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PREFACE.

THE completion of this volume has been inordinately delayed, from circumstances entirely beyond the Editor's control.

When the first-half of this last number had been printed off, the Editor found himself suddenly translated to a new official sphere, involving a wholly new set of duties. A medical man who for a dozen years had been practising exclusively as a consulting surgeon would find it a little perplexing to have to take up suddenly an enormous practice of a brother physician. The change in the Editor's case was even greater, and consequently for the first few months it was impossible for him to find even a moment's time for *any* thing outside his official work.

As soon as the new work had been mastered, he put through the Press the second volume of "*The Game Birds*," and this disposed of was able at last to attend to STRAY FEATHERS.

This irregularity of publication is a great drawback to STRAY FEATHERS, and no one regrets it more than the Editor, but no one can command *all* circumstances; and, if all were known, the real matter for surprise would be, not that STRAY FEATHERS is at times, as now, behind time, but that it is ever published at all.

ALLAN HUME.

March 23rd, 1880.

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STRAY FEATHERS.

Vol. VIII. APRIL 1879 No 1.

Elementary Sketch of the Osteology of Birds.

With four plates.

By R. Lydekker, B.A., Geological Survey of India.

Preface.

I have been asked by Mr. Hume to contribute to "Stray Feathers" an elementary sketch of the general osteology of birds, in order that ornithologists in India, who have no opportunity of obtaining works devoted specially to that subject, may thereby be able to arrive at a general idea of the structure and homologies of the bird-skeleton.

Many ornithologists content themselves merely with a knowledge of the external parts of birds, and remain entirely unacquainted with the internal anatomy. As far as regards the distinction between closely-allied species of birds, this superficial knowledge is probably in most cases sufficient, because the variations in the internal anatomy of most allied groups of birds are in general very small. When, however, the naturalist desires to compare the relationships of more distantly-related avian groups, he will not be able to arrive at a truthful conclusion, unless he be acquainted, at least to some extent, with their internal as well as their external structure. The present sketch does not pretend to go into any details regarding the osteological anatomy of the various groups of birds, but is merely intended to enable the student to determine for himself the names and homologies of the bones of any birds which he may come across. With this knowledge, the student will be perfectly able to institute for himself comparisons between the homologous bones of different birds, and to draw his own conclusions as to their relationships, as thereby indicated.

Before reading this sketch I would strongly recommend the reader to obtain for himself the skeleton of any common bird, such as a crow or a kite (which he can easily prepare by macerating the body of such bird, or by placing it over an ants' nest,)

and comparing it with the descriptions given below. He will, in this manner, be able to arrive at a far more thorough and sound knowledge than he would merely by studying the figures given here. If this imperfect and hasty sketch should induce any Indian ornithologist to take up systematically the study of the osteology, and ultimately of the anatomy of the soft parts of birds, (which still offers a wide field for research) it will have fully attained its object.

I must add that I have not written this sketch for students in England, who have abundant means of access to text books and memoirs. I must also disclaim any attempt at originality in the matter of this sketch, or in the manner of its treatment, since I have no claim to any special knowledge of the subject. The sketch is mainly written from my own ordinary knowledge of Avian anatomy, which has been originally in great part derived from the writings of others, and more especially from those of Professor Huxley, from which I have borrowed to a considerable extent. The figures used in illustrating this sketch have also been borrowed from the memoirs of other authors, to whom I owe apologies for having copied such figures without having obtained previous permission. The delay necessary to obtain an answer from Europe must be my excuse for this omission.

I have appended below* a list of some of the more important Works and Memoirs on the Osteology of Birds, which may be useful to such ornithologists as desire to enter more fully into the subject.

In making use for the first time, of each scientific term employed in this sketch, I have appended in a note its original meaning and application. It must, however, be observed that the names of most bones were originally applied to the bones of the human skeleton, at a time when Comparative Anatomy was virtually unknown. Consequently when we come to consider a class of animals so far removed from man, as are birds, the original meaning of the names used is frequently inapplicable, and the student will therefore very often find it preferable to consider such names as purely abstract terms.

INDIAN MUSEUM, CALCUTTA; *February*, 1879. RICHARD LYDEKKER.

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* Eyton—"Osteologia Avium."
Foster and Balfour—"Elements of Embryology."
Garrod—"Shizognathous Birds"; Proc. Zool. Soc., Lon., 1873.
Huxley—"Anatomy of Vertebrated Animals."
Huxley.—"Classification of Birds." Proc. Zool. Soc., Lon., 1867.
Milne-Edwards—"Oiseaux Fossiles de la France."
Morrell—"Students' Manual of Comparative Anatomy." Pt. II.
Owen—"Anatomy and Physiology of Vertebrates," Vol. II.
Parker—Article, "Birds" Osteology; Encyclopædia Britannica.
Parker.—"Ægithognathous Birds." Trans. Zool. Soc., Lon., Vol. IX.
Parker and Bettany—"Morphology of the Skull."

General Characters.—The osseous system of birds is generally remarkable for the lightness and delicacy of its structure, and also for the extent to which many of the component bones have been soldered together by "anchylosis."* These two characters are induced by the necessity for a low specific gravity in the bones, in order that they may be suitable for an aërial life, coupled with the equal necessity for firm bases of bony support for the powerful muscles necessary for flight. The lightness is attained by the permeation of most of the bones by air cavities, which are in direct communication with the tubes of the lungs, and therefore also with the external air. In some kinds of birds this permeation of the skeleton by air is carried to such an extent that even the toe-bones are hollowed. Other birds, however, such as the Ostrich, which are not formed for flight, have the larger bones filled with marrow, as in mammals.

The requisite strength, which, as we have said, is of equal importance with lightness in the bones of birds, is attained both by anchylosis and by the structure of the bones themselves, which are generally more compact and close-grained than are those of other animals. In consequence of this compact structure, the bones of birds are generally distinguished from those of other animals by their whiter color and more porcellanous appearance. The compact structure is in consequence of a larger relative proportion of mineral over organic matter which enters into their composition. In such bones as are not permeated by air, this white color and compact structure is not nearly so noticeable, owing to the proportionally greater quantity of organic matter which is present.

The Skull.—In order to arrive at a thorough knowledge of the skull of a bird, and its homological relations, it would be necessary, in the first place, to study the development of the skull of fœtal birds; and, secondly, to study in considerable detail the skulls of the mammalia, because since the bones of the skull were mainly named, first of all, from the mammalian skull, we must naturally go back to that, if we wish to arrive at the original meaning of the terms. It would, however, be beyond the scope of the present sketch to attempt such a task. Taking, however, the adult bird-skull, and surveying its general form, we shall be able to arrive at a fair general idea of its structure, though some points in relation to the original compound structure of certain bones must be taken by the reader on trust. The adult bird-skull is generally noticeable for its smooth and rounded cranial portion, and for the great extent

* Anchylosis, from ἄγκυλος, crooked, and so probably a crooked or irregular union. The term is applied to the union by bony matter of two or more originally distinct bones.

to which the original forms and relations of the component bones have been obscured by anchylosis.

Fowl's Skull.—On plate II are given five views of bird skulls; figures 1 and 2 being slightly enlarged lower and upper views of the skull of the common fowl. I propose first to take a general survey of the bones shown in these two last-named figures, and then to notice a few respects in which some of these bones are modified in other groups of birds.

Commencing with the hinder part of the skull, we find that this portion is articulated to the back-bone or vertebral column (pl. I. c.v.) by a single hemispherical condyle* (pl. II. cn.,) which is called the *occipital condyle,* and which is formed entirely from the *basi-occipital*† bone (b.o.), which occupies the hinder part of the base of the skull. The presence of this single occipital condyle serves at once to distinguish the skull of a bird from that of a mammal, in which there are always present two condyles, which are formed in great part by the ex-occipital bones (e.o.) Reptiles‡ on the other hand, agree with birds in having but one occipital condyle. The hinder part of the skull of the adult bird consists of an apparently single bone, which surrounds the foramen§ for the passage of the spinal chord. In the young bird, however, as in the young and frequently in the adult mammal, this apparently single bone consists of four completely distinct elements.‖ In the under view of the fowl-skull (fig. 1) the general position of these four bones is indicated. Below the spinal foramen, we have the basi-occipital (b.o.), extending as far forward as the transverse suture¶ which runs across the base of the skull, the two ex-occipitals (e.o.) laterally, and the single supra-occipital (s.o.) above. Occasionally, as in the skull of the common Goose, vacuities occur in the occipital bone above the foramen magnum,

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* Condyle, from κόνδυλοσ, a knuckle; applied in Anatomy to any articular bony surface of a more or less spherical form. The occipital condyle is so called from being placed on the "occiput."

† Basi-occipital. The term "os occipitalis," or occipital bone, was originally applied in human anatomy to the large bone, pierced for the passage of the spinal chord, which forms the base of the skull (occiput.) It was subsquently found that this bone really consisted of four anchylosed bones. Two of them form a pair on either side, and were hence called *ex-occipitals* (*ex*, from): another which forms the top of the occiput was termed *supra-occipital* (*supra*, above,): while a fourth which occupied the base was termed the *basi-occipital* (*basis*, base of.)

‡ The term reptile in this sketch is used in its scientific meaning, as being equivalent to the class REPTILIA, and as excluding the frogs and newts, (AMPHIBIA) which are popularly classed as reptiles.

§ The term *foramen*, meaning an aperture, is applied in osteology to any aperture in a bone which serves to transmit a nerve or blood-vessel. The foramen referred to above is the *foramen magnum*, or great foramen, which transmits the spinal chord and vessels to the brain.

‖ The term element in osteology is applied to any bone which is formed from a single primitive point of ossification.

¶ Suture, from *suo*, I sew, is the line of junction of two bones.

which indicate the original boundaries between the supra- and ex-occipitals. Anteriorly the basi-occipital (b.o.) may be seen to be produced into a long pointed style running along the base of the skull, the anterior portion of which is termed the *sphenoidal rostrum** (sph.r.) Between this sphenoidal rostrum and the basi-occipital there is really intercalated another bony element which corresponds to the *basi-sphenoid* (b.sph.) of mammals; anchylosis, however, has entirely obliterated the original divisions between these bones. The sphenoidal rostrum is considered to be the representative of the parasphenoid† of reptiles,—a bone which is not found in the mammalian skull.

The lateral border of the hinder portion of the palatal aspect of the skull is formed on either side by a slender bony rod (pl. II q.j.), which is mainly composed of two elements, the *quadrato-jugal*‡ (q.j.) posteriorly, and the *jugal*§ (j.) anteriorly; the second of these bones corresponds to the cheek-bone (jugal) of man and other mammals, while the former is unrepresented in the mammalian skull. On its inner aspect the quadrato-jugal style posteriorly presents an articular facet which fits loosely into a hollow of the *quadrate*‖ bone (qu.) The latter bone is somewhat square-shaped inferiorly; while superiorly it forms a flattened plate giving off two processes, one of which is directed upwards and inwards towards the orbit, while the other, which

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* Sphenoidal rostrum, and basi-sphenoid. The *os sphenoide* of human anatomy (from σφήν a wedge, and εἶδος likeness, in allusion to its shape) was applied to a large irregularly-shaped bone which occupies the base and sides of the human skull in front of the occiput, and which extends upwards to the orbits. This bone was divided into three portions, the *body* (forming the base of the skull in front of the basi-occipital) and the *greater and lesser wings*, the latter transmitting the optic nerve. Subsequently, by the light of Comparative Anatomy, it was found that the sphenoid really was a complex bone, and that it consisted of two median and three lateral pairs of elements. The two median elements were contained in the so-called body, and were named *basi-sphenoid* and *pre-sphenoid* (*præ*, in front of); the two pairs of wings likewise each consisted of a pair of elements; the greater wings were called *alisphenoids* (a barbarous word derived from the Latin *ala* a wing, and σφῆν) while the lesser wings, as being connected with the orbit, were termed *orbito-sphenoids* (also a barbarous word, derived from the Latin *orbis*, the socket of the eye, and σφῆν). The other two bones, forming part of the so-called sphenoid, were called pterygoids, and will be again noticed below.

The reader unacquainted with human anatomy will, perhaps, find some difficulty in following the above; but it is not of much importance in bird osteology, and it will be better, when the various sphenoidal bones are named in reference to the bird skull, to take them as abstract terms, without caring much for their original derivation.

† Para-sphenoid; παρα, by the side of, and sphenoid.

‡ See note ‖.

§ Jugal, from *jugum*, a yoke, so named because this bone in man unites two projecting processes of the maxilla and squamosal (*vide infra*.)

‖ Quadrate, from *os quadratum*, the "square-shaped bone;" a bone connecting the lower jaw of birds and reptiles with the skull, and so named from its shape. The name *quadrato-jugal* indicates a bone connecting the quadrate with the jugal.

is blunter, passes upwards and backwards, and fits loosely into a hollow in the *squamosal* (sq. fig. 2)* element of the skull.

The squamosal bone is that which surrounds the aperture of the ear, and with which are closely connected the *petrosal*† and *tympanic* bones which contain the internal ear. The squamosal in birds very often gives off a short process which descends downwards over the quadrate. Inferiorly the quadrate bone presents two oblique condyles on its anterior border, which serve for the articulation of the lower jaw or mandible (m.n. pl. 1). The intervention of the quadrate bone between the mandible and the squamosal element of the skull is a peculiarity of the skulls of birds and reptiles. In mammals the mandible always articulates directly with the squamosal itself, and the quadrate bone is supposed to be represented by the *malleus*‡ of the internal ear, which is wanting in the ear of birds, where the *incus* and *stapes*§ are alone present.

The lower jaw or mandible of birds, in its young state consists of several distinct elements, but these with the exception of the anterior or dentary piece, are firmly soldered together in the adult; the vacuity which occurs near the posterior extremity of the mandible indicates, however, one of the original lines of separation. The two rami‖ of the mandible are almost always anchylosed together anteriorly. The posterior or articular extremity of each ramus may be either abruptly truncated, or produced backwards into a curved process. In the compound nature of the mandible, birds agree with reptiles and differ from mammals, in which each ramus consists of a single element.

The quadrate also articulates by an ascending process with the *prootic*¶ and *alisphenoid*** which are small bones generally anchylosed with the squamosal, and which need not occupy us further here. The antero-internal angle of the

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* Squamosal, from *squama*, a scale, applied, from its flat shape and articulation, to the bone of the skull which articulates with the lower jaw in mammals, and subsequently to the corresponding bone which articulates with the quadrate in birds and reptiles. In human anatomy the squamosal was called the squamous part of the temporal bone.

† Petrosal and tympanic, two bones connected with the organ of hearing: the former named from its solid structure (πετρον a rock); the latter from its containing the drum of the ear (tympanum).

‡ Malleus, a hammer: applied to the larger of the internal bones of the ear, so named from its shape.

§ Incus, an anvil; stapes, a stirrup—names applied to the smaller bones of the internal ear, and so named from their shape. The internal ear of the bird also contains a third rod-like bone called the *columella*, which does not occur in mammals.

‖ Ramus, a branch;—applied to the two horizontal bars of the mandible.

¶ Prootic, one of the bones forming the chain around the ear, which can only be shown in fœtal skulls.

** Ali-sphenoid. See sphenoidal rostrum above. The boundaries of the ali-sphenoid are obliterated in the bird skull, but its general position is indicated from the association of the quadrate indicated above.

quadrate also articulates with the *pterygoid* (pt.)—a bone to which we shall have occasion to refer again.

The anterior portion of the jugal style comprizes a small bone which is the homologue of the maxilla* (fig. 1, mx.) of mammals, and which inferiorly expands into the so-called maxillo-palatine† process (mxp.) which is very characteristic of the bird-skull. By far the greater portion of the upper jaw is formed by the two premaxillæ‡ (p. mx.) These bones are very peculiar in shape, and are of relatively large size, each being divided into three processes. Of these three processes a palatine process (pl. II. fig. 1) runs along the palate towards the palatines,§ an ascending process (n. pmx, fig. 2) passes upwards in the middle line between the nasals (na.)‖ while an external or maxillary process forms the greater part of the margins of the upper jaw, and unites posteriorly with the maxilla. The orbit¶ (o. pl. I.) is open inferiorly, and is bounded above by the frontals, which generally send down a descending post-orbital process, (pl. II., figs. 1 and 2, p. f.) This process may be developed from the alisphenoid, and in that case may be separately ossified. The exterior border of the orbit is usually defined by a loosely attached and frequently spongy bone, which corresponds to the *lachrymal*** of mammals (fig. 2, l.) The lachrymal articulates with the nasal and frontal above, and with the maxilla below. The lachrymal is frequently closely united internally with the prefrontal†† which is connected with the nasal passages. The lachrymal, which is often loosely articulated with the frontal, is greatly developed in the Parrots and Raptorial birds, and is generally spongy in the latter. In connection with the frontal there may be, as in *Arboricola*, a chain of small bones developed above the orbit, which may be called *supra-orbital*‡‡, and occasionally an infra-orbital chain may be developed near the jugal arcade.

The external nares§§ (na. pl. I.) are mainly bounded by the nasals and premaxillæ.

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* Maxilla, a jaw; in mammals the bone carrying all the upper teeth behind the incisor or "front" teeth.

† The name maxillo-pallatine indicates that the process in question is given off from the maxilla, and is in connection with the palatine.

‡ Premaxilla, from *præ*, in front, and *maxilla*; in mammals the bone which is situated in advance of the maxilla and which carries the incisor teeth.

§ Palatine, from *palatum*, the palate: the bones forming the hinder part of the palate of mammals, articulating with the hinder border of the maxilla.

‖ Nasals, (from *nasa*, the nose), the bones of the nose.

¶ Orbit, from *orbis*, the socket of the eye.

** Lachrymal, from *lachryma* a tear; in mammals this bone carries a duct from the eye to the nose.

†† Prefrontal; *præ* in front of, and *frontal*, (*vide* frontal *infra*.)

‡‡ Supra-orbital, *supra*, above and *orbis*.

§§ Nares, the nose.

The upper part of the brain-case (pl. II., fig. 2, fr. to pa.) consists in the adult bird of a smooth spherical surface of bone without any distinct sutures. The median line of the skull, however, shows a depressed channel, which indicates the original line of union between the large bones which form this part of the skull, and which are termed the *frontals* (fr.)* The frontals in the adult appear to extend backwards as far as the supra-occipital, but in reality a pair of bones (pa.) are interposed, which correspond to the *parietals*† of man. These bones in the adult are indistinguishably anchylosed together in the median line, and in front and behind to the frontals and supra-occipital. The portion of the skull which forms the division between the two orbits (o. pl. I) consists of a very thin vertical septum‡ which may be completely ossified, or which may present one or more vacuities which are occupied by membrane in the living animal. This septum chiefly consists of bones which correspond to the ethmoid§ and the pre- and orbito-sphenoids‖ of mammals. A part of the ethmoid also appears on the top of the skull, between the anterior extremities of the frontals (eth. fig., 2; pl. II.) In part of this ethmoidal septum, in the dry skull, there is usually a vacant space, and then we come to another anteriorly placed thin vertical septum, separating the two nasal cavities. This latter septum is often very incompletely ossified. Within the nasal cavities are contained the *turbinal*¶ bones which carry the mucous membrane of the nose. Inferiorly the bird-skull (pl. II., figs. 1, 3, 4, 5) comprizes, in addition to the bones which we have already noticed, the *pterygoids* (pt.)** which articulate posteriorly with the quadrate bones (qu.) and anteriorly with either the *vomer* (vo.)†† or the *palatines* (pl.) The palatines themselves (pl.) are moveably united either partly together and partly with the sphenoidal rostrum (sph. r.) or with the vomer. The latter (vo.) is a mesial bone of various forms occupying the anterior part of the lower surface of the skull. This bone is

* Frontal, from *frons*, the forehead; the bones situated immediately above the orbits.

† Parietal, from *paries*, a wall; the bones roofing the brain-case behind the frontals.

‡ Septum, properly an enclosure, and then a partition.

§ Ethmoid, from ἠθμός a sieve; the bone forming the septum of the nose; so named from its spongy and perforated nature in man.

‖ Pre- and orbito-sphenoids. See note on *sphenoidal rostrum* given above.

¶ Turbinal, from *turbo* a top, applied to the bones of the nasal cavities, from their twisted character.

** Pterygoids (from πτέρυξ a wing, and εἶδος likeness) are small bones articulating with and placed behind the palatines in mammals; in human anatomy called pterygoid processes of the sphenoid.

†† Vomer, a ploughshare; applied to a median bone at the forepart of the lower surface of the skull.

occasionally absent. These bones on the inferior surface of the skull will be again alluded to more fully below, as they are of considerable importance in one of the modern schemes of classification of birds. By the moveable posterior articulations of the palatines, sphenoidal rostrum, jugal arches, and quadrates, the whole framework which supports the upper jaw is capable in general of a certain extent of upward motion, which is especially marked in the Parrots.

The posterior nares, or internal nostrils, are situated between the palatines and the vomer. The Eustachian* tubes (or passages between the internal ear and the gullet or pharynx) generally pierce the basi-sphenoid, and open by a common aperture on the inferior surface of this bone. (Plate II. eu.)

The jaws of all species of living birds are enclosed in a continuous horny sheath, with cutting edges and, no teeth ever appear externally. In some fœtal Parrots, however, teeth do appear within the jaws, though they never cut the gum. Certain extinct birds however (*Odontopteryx*† and *Ichthyornis*,‡ were provided with a full series of teeth in both upper and lower jaws, and in this character afford an almost complete transition from the avian to the reptilian skull.

General plan of the bones of the skull.— The student, who has no previous acquaintance with osteology, may, perhaps, be somewhat confused at this heterogeneous survey of the cranial bones, and I have therefore added the following table, which is intended to shew the general system on which the vertebrate skull is constructed. This table is taken with some modifications from one published by Professor Huxley. A few of the bones named in this table were not mentioned in the bird-skull, where they have no distinct representatives.

It will be seen from this table that the brain-case is constructed of three principal segments, which, reckoning from behind forwards, may be called *Occipital*, *Parietal* and *Frontal*. Each of these segments has a roof, lateral walls, and a floor, the latter being composed of the Basi-occipital, Basi-sphenoid, and Presphenoid, which conjointly with the applied Parasphenoid (sphenoidal rostrum of the bird) are often collectively termed the *basi-cranial axis*. The first and second segments are separated respectively by the ear and the eye, around the former of which are collected a series of bones like the squamosal,

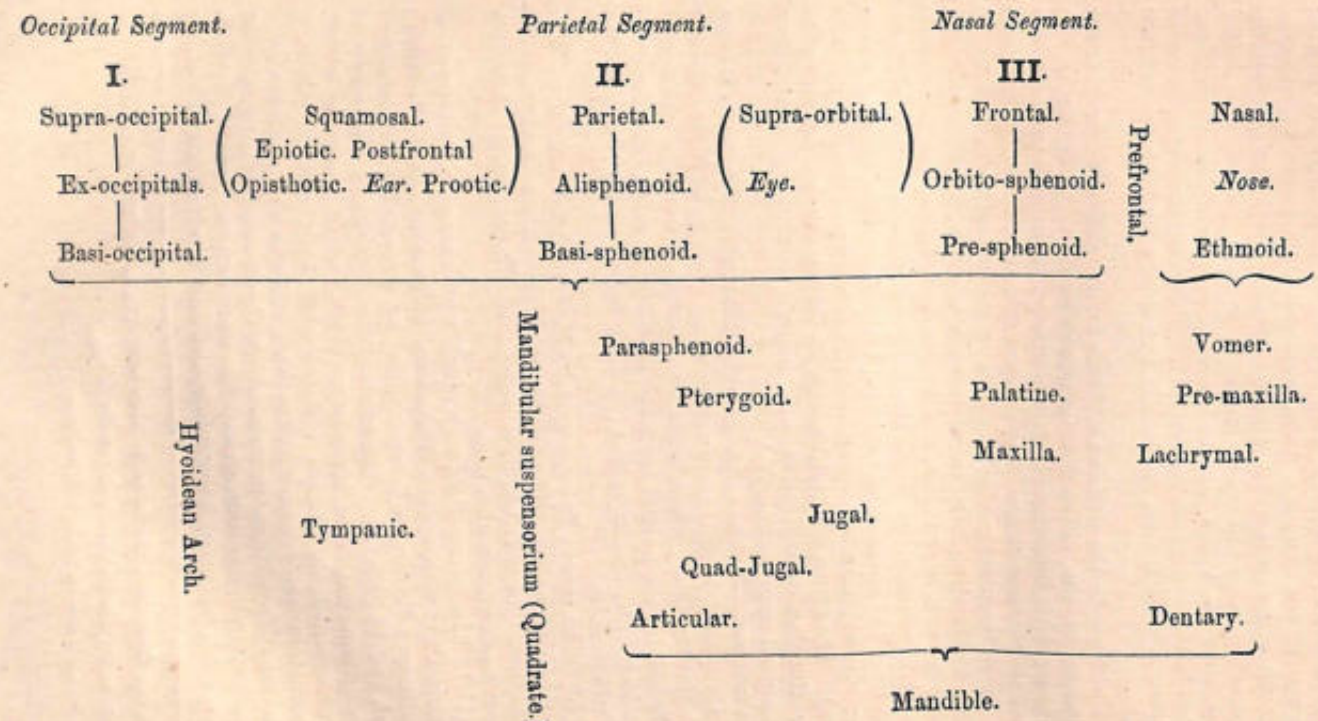
* Eustachian, a term derived from the name of the discoverer of these passages.

† Odontopteryx, (from ὀδούς a tooth, and ὄρνις a bird); a fossil bird with teeth, from the London clay.

‡ Ichthyornis, (from ἰχθυς a fish. and ὄρνις a bird). A fossil bird from cretaceous rocks of America, with teeth and with vertebræ hollowed on either side *(amphicœlous)* like those of fishes, whence the name is derived.

which are wedged in between the primary elements of the two segments. In front of the frontal segment we have an incomplete segment, comprehending the bones related to the nasal cavity.

Below the basi-cranial axis (the long horizontal line in the diagram) we have other bones which form the palatal and adjacent regions of the skull. These bones do not, like those above the axis, enclose a tubular nervous cavity, and are consequently not so easily divided into segments. The table shows their relations to the superior bones. Posteriorly these bones form two arches—the hyoidean, and the mandibular; the latter commences with the quadrate, and then continues with the elements of the mandible which are bent so as to be directed forwards. From the base of this latter arch (quadrate) there arises another chain or arcade of bones, which is directed forwards, and which comprehends the quadrato-jugal, jugal, maxilla, and lachrymal. Above this arcade, and below the basi-cranial axis, are interposed the chain of the pterygoids, palatines and premaxillæ. The latter are in close connection with the vomer, and so with the nasal bones.


Occipital Segment.
Parietal Segment.
Nasal Segment.
I.
II.
III.
Supra-occipital.
Ex-occipitals.
Basi-occipital.
Squamosal.
Epiotic. Postfrontal
Opisthotic. Ear. Prootic.
Parietal.
Alisphenoid.
Basi-sphenoid.
Supra-orbital.
Eye.
Frontal.
Orbito-sphenoid.
Pre-sphenoid.
Prefrontal.
Nasal.
Nose.
Ethmoid.
Vomer.
Pre-maxilla.
Lachrymal.
Parasphenoid.
Pterygoid.
Palatine.
Maxilla.
Jugal.
Quad-Jugal.
Articular.
Dentary.
Mandible.
Hyoidean Arch.
Tympanic.
Mandibular suspensorium (Quadrate.)

Characters of the skull in different groups.—As the inferior aspect of the skull has been taken by Professor Huxley as affording characters for the classification of birds, it will be necessary to go somewhat more fully into this portion. For this purpose views of the inferior surface of the skull of four birds have been given on plate II. These views exhibit the chief types of modification to which the bones on this surface are liable.

Ratitæ.—In the division of birds known as the Ratitæ (corresponding to the old order or tribe Cursores., pl. II. fig. 5) the vomer (vo.) is broad and cleft posteriorly, and usually supports the posterior extremities of the palatines (pl.), and the anterior extremities of the pterygoids (pt.), thus preventing either of these bones from articulating with the sphenoidal rostrum. Strong processes, carrying articular facets, and known as *basi-pterygoid processes* (b. pt.), which arise from the body of the basi-sphenoid, and not from the sphenoidal rostrum, articulate with facets, which are placed near the postero-internal angles of the pterygoids (pt.) The figured skull, which is taken as an example of the Ratitian modification of palate, is that of the Emeu (*Dromæus novæ-hollandiæ*).

Carinatæ.—In the other great division of living birds, known as Carinatæ, which comprehends all living birds which are not Ratitæ, four groups have been made from the characters afforded by the palatal aspect of the skull, namely, (I.) *Dromæognathæ;* (II.) *Schizognathæ;* (III.) *Desmognathæ;* and (IV.) *Ægithognathæ.*

(I.) The group Dromæognathæ* comprehends only the Tinamous (*Tinamidæ*). The structure of the palate in these birds is the same as that which occurs in the Ratitæ, and therefore needs no further notice here.

(II.) The group Schizognathæ† which comprehends most of the old Cuvierian orders, Columbæ, Gallinæ (except *Tinamidæ*‡) Grallæ and Natatores is exemplified by the skull of the common fowl, (pl. II., fig. 1). The characteristic points of the palate of this group are that the vomer (vo.), which may be either large or small, is always pointed anteriorly, while posteriorly it embraces the sphenoidal rostrum between the palatines (pl.) The maxillo-palatine processes (mxp.) are usually elongated or lamellar, and pass inwards over the anterior processes of the palatines, (pl.), with which they unite, and then bending inwards along

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* From Δρομαιος, the scientific name of the Emeu and γναθος, a jaw.

† From σχιζω I cleave, and γναθος, a jaw.

‡ *Turnix* is said to be Ægithognathous.

the inner ends of the same bones, leave a broader or narrower fissure (whence the name of the group) between themselves and the vomer, and do not unite either with it or with themselves. With the exception of the fowl, all Schizognathous birds have small bones known as "meso-pterygoids," which do not occur in mammals.

(III.) The group Desmognathæ* comprehends such of the Cuvierian orders Grallæ (*Ardeidæ*, *Ciconidæ* and *Tantalidæ*), and Natatores (*Anatidæ*, *Phœnicopteridæ* and *Pelicanidæ*) as are not Schizognathous, the Accipitres or Raptores, the Scansores (Picariæ in part), and a large number of the old fissirostral Passeres or Insessores. This group includes such a heterogeneous mixture of birds that its importance in classification may be open to doubt, though morphologically it is of the highest interest. I have selected as an illustration of this form of palate the skull of the Common Heron, (*Ardea cinerea*) (pl. II, fig. 3). In this group the vomer (vo.) is frequently very small, or may be entirely absent; when present, it is always slender and pointed anteriorly. The maxillo-palatine processes (mxp.) are united across the middle line (whence the name of the group) either directly or by the intermediate ossifications of the nasal septum. The ends of the palatines (pl.) and the anterior ends of the pterygoids articulate directly with the sphenoidal rostrum; and the basi-pterygoid processes are placed on this rostrum.

(IV.) The remaining Carinatæ are comprehended in the group Ægithognathæ† in which the palatine structure is in some respects intermediate between that of the Schizo-and Desmognathous groups; while in others it is peculiar. A skull of a raven, (*Corvus corax*) (pl. II., fig. 4) is given as an example of this form of palate.

The vomer (vo.) is a relatively broad bone, abruptly truncated anteriorly and deeply cleft behind, and which embraces the sphenoidal rostrum. The maxillo-palatine processes are slender at their origin, and extend obliquely inwards and backwards over the palatines (pl.), ending beneath the vomer in expanded extremities, which do not become united by bone, either with one another or with the vomer.

The birds comprized in these three last groups have been again sub-divided into families from the characters afforded by the bones of the palate. It is not, however, within the scope of this slight sketch to indicate these minor divisions, and the student, who desires to go further into this subject, is accordingly referred to the papers of Professors Huxley and Parker on this subject. It may, however, be noted here that Mr. Garrod has divided the

* From δεσμος a bond, and γναθος.

† From αἰγίθος, a sparrow, and γναθος, jaw.

Shizognathous birds into two main sections, from characters afforded by the nasal bones. In the first of these sections, which is known as Schizorhinal (split-nasals), and which includes among others the Pigeons, Sand-grouse, Plovers, Snipe, Gulls, Cranes, and Auks, the posterior border of the nares is not rounded, but apparently formed by the divergence of two bony bars, which inclose an angle between them; these bars appear to be processes of the nasals. In the second of these sections, which is known as Holorhinal, (entire nasals) and which comprehends among others the Petrels, Divers, Fowls, Rails, Bustards and Cariamas, the posterior border of the nares is rounded, and the nasal bones do not present the appearance of two distinct splints enclosing an angle.

I may also add that Professor Parker does not use the group Desmognathæ, but classes the birds forming that group, together with the Woodpeckers, (which Huxley classes with the Ægithognathæ) in a group which he calls Saurognathæ, (reptile-jawed).

*Hyoid arch.**—The hyoid arch, which supports the tongue, contains a basi-hyal, and two pairs of cornua† one larger than the other; these cornua never unite with the periotic element of the skull. In the Woodpeckers, the posterior cornua are enormously developed, and curve over the back of the skull towards the frontals, which are grooved to receive them.

Sclerotic.‡—Though not strictly belonging to the true skeleton, it may be noticed that birds are provided with a chain of overlapping osseous plates within the sclerotic of the eyeball.

The vertebral column§.—The vertebral column of a bird (pl I. cv. to cx.) is divided into a cervical‖ region (cv.), in which the vertebræ do not carry ribs which articulate with the sternum¶ (st.); a dorsal** region (dv.) which comprehends all the vertebræ behind, and including the first one which carries ribs articulating with the sternum, as far as the sacrum††, the sacral region (sm.) which consists of a number of anchylosed vertebræ, probably corresponding to the lumbar‡‡, sacral, and anterior caudal§§ vertebræ of mammals, and

* Hyoid from U. and εἶδος likeness, named from the U.-shaped form of the human hyoid.

† Cornua, from *cornu*, a horn, applied to the slender processes of the hyoid bone

‡ Sclerotic (from σκληρός, solid,) the outer coating of the eye.

§ Vertebral column, derived from *vertebra* a bone of the back, which is again derived from *verto*, I turn.

‖ Cervical, from *cervix*, the neck.

¶ Sternum, from στέρνον the breast; in anatomy applied to the breast bone.

** Dorsal, from *dorsum*, the back.

†† Sacrum, applied in anatomy to the vertebræ articulating with the ilia (q. v.) the name is derived from the fact that this part of cattle was offered in sacrifice.

‡‡ Lumbar, from *lumbris*, the loin; connected with the loins.

§§ Caudal, from *cauda*, the tail.

a caudal region (c. vt. and cx.) which includes the remaining vertebræ. The cervical vertebræ (cv.) are always numerous, being never less than eight, and sometimes exceeding twenty in number. The first vertebra or atlas* is a small ring-shaped bone, which is very frequently divided into two segments by the ossification of the transverse ligament. With the exception of this vertebra, all the vertebræ of birds consist of two parts,—a body or centrum, which forms the inferior portion, and an arch, called the neural arch, which surrounds the spinal chord. This arch in the later vertebræ generally carries a ridge or spine (shown in the dorsal vertebræ of the figured skeleton) and which is known as the neural spine. The vertebræ articulate with one another by the apposition of their centra, and also by two other pairs of oblique joints known as *prezygapophyses*† (pl IV., fig 4, pz.) which look downwards, and *postzygapophyses*‡ pt. z) which look upwards. We have already said that the first vertebra has no centrum. This centrum has in fact become united, as in mammals, with the centrum of the second or axis vertebra, of which it forms the odontoid§ process, and on which as a pivot the atlas turns, carrying with it the skull. The neural‖ spines of the succeeding cervical vertebræ are either very small, or are entirely wanting. The articular surfaces of their centra are formed on a kind of ball and socket plan, the anterior surface being convex vertically, and concave transversely, while the posterior surface presents an exactly opposite arrangement. This form of the articular surfaces of the centra of the cervical vertebræ is very characteristic of birds. The latter cervical vertebræ bear a median spine on their inferior surfaces, which is developed to the greatest extent anteriorly.

The dorsal vertebræ (pl. I. d.v.) are characterized by having large and square neural spines, which in old individuals may become anchylosed together to a considerable extent. They also develope from their lateral surfaces other flat plates of bone, or transverse processes with which the *tuberculum*¶ of the rib articulates. This transverse process arises solely from the neural arch. At the anterior border of the lateral surface of the

* Atlas, applied to the first cervical vertebra, as bearing the head.

† Prezygapophyses, a barbarous word, derived from *præ*, before (anterior) ζυγός, a union, and ἀπόφυσις, the anatomical word for a process. Applied to the anterior articulating oblique facets of vertebræ.

‡ Postzygapophyses, a similarly-formed word to the last, substituting *post* (behind) for *præ*.

§ Odontoid, from ὀδούς ὀδόντος, a tooth, and εἶδος like.

‖ Neural, from νεῦρον a nerve; applied to the spine, which is situated over the spinal chord or nerve.

¶ Tuberculum, a little tubercle, applied to the second vertebral articulation of a rib.

centrum of each vertebra there is a small cup-shaped cavity which articulates with the head or *capitulum** of the rib. It is very characteristic of birds that the facets for the articulation of the ribs occupy the same position throughout the entire series of dorsal vertebræ, whereas in reptiles the articulations vary very much in their relative position at the two extremities of the series.

The anchylosed mass of vertebræ which forms the sacrum of a bird (pl. I. sm.),† probably, as we have already seen, represents the lumbar, sacral, and some of the anterior caudal vertebræ of other Vertebrata, and it is probable, from considerations into which we need not enter here, that only some five of the middle vertebræ of this mass correspond to the true sacral vertebræ of a mammal or a reptile. The free caudal vertebræ (c. vt) are generally of simple structure and few in number; they are usually terminated by a three-cornered bone (cx.) usually known as the coccyx‡ or ploughshare bone *(os en charrue)* which appears to consist of several incomplete and agglomerated vertebræ. This bone has no cavity for the reception of the spinal marrow. In an extinct bird (*Archæopteryx*) the caudal vertebræ formed a long tapering series, as in reptiles and most mammals. In another group of extinct birds (*Ichthyornis*)§ (*Apatornis*)‖ the vertebræ, instead of having modified ball and socket joints, were concave on both articular surfaces, (amphicœlous) and inclosed a bi-convex disc of cartilage between every two of them.

Ribs.—The ribs of birds (pl. I., r.) are flattened bones, which, as we have already seen, carry widely separated capitula and tubercula for articulation with the centra and transverse processes of the vertebræ. They are generally few in number, and the most anterior have *uncinate processes* (p. u.) which project upwards and backwards from their posterior margins. Similar processes occur in the ribs of crocodiles, but never in those of mammals. The true or vertebral ribs are directed almost immediately downwards, and are always completely ossified. At their distal extremities they articulate with other frequently less well ossified ribs (sternal ribs) which are directed upwards and forwards, and which articulate at their free extremities

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* Capitulum, diminution of *caput*, the head, applied to the terminal vertebral articulation of a rib.

† The sacral vertebræ are not really seen in the figure, as they are concealed by the pelvis, the letters merely indicate their position.

‡ Coccyx, from κοκκυξ, a cuckoo. The last anchylosed vertebræ; so called from the supposed resemblance of these vertebræ in man to a cuckoo's beak.

§ Ichthyornis, see previous note.

‖ Apatornis (from ἀπατεῶ to deceive, and ὄρνις a bird). A fossil American bird with fish-like vertebræ, from which deceptive character the name is taken.

with the sternum. These sternal ribs are homologons with the *costal cartilages* of man.

Sternum.—The sternum or breast bone of birds necessarily attains an unusually large size in most species of the class, since the muscles used in flight are mainly attached to it. In the adult bird (pl. I. st. pl. III., figs. 1, 2, 3) the sternum consists of a single complex bone, but in the fœtus it is developed from at least two and generally from five distinct centres of ossification.

The sternum of an ordinary winged bird (pl. III., fig. 3 which represents the sternum of a fowl) consists of a median ridge of bone (ca.) which is known as the carina,* and which stands out at right angles from a curved bony shield which forms the body of the sternum (figs. 1 and 2, st.) One or two pairs of membraneous fontanelles† frequently remain unossified in the inferior and lateral portions of the sternum, and give rise to as many holes or notches separating slender processes in the dry skeleton. The median one of these processes (mx.) forms the downward continuation of the carina, and as being the homologue of the xiphisternum‡ of mammals is called the *middle xiphoid process*; the pair of processes (ix.) next to the middle one are known as the *internal xiphoid processes*, while the outermost pair (ex.) are called *external xiphoid processes*. In the angle situated between the carina and the body of the sternum are placed the powerful pectoral muscles which move the wing in flight. The superior angle of the sternum is sometimes developed into a median process or *rostrum*§ (fig. 3, r.); the angles on either side of this median process are known as the costal processes (c. p.) to which some of the ribs articulate, the rest articulating lower down (pl. I.) At the superior or anterior border of the sternum of most birds there are situated two grooves which receive the distal extremities of the coracoids (pl. III., figs. 1, 2, cor.)

Having now become acquainted with the typical sternum of a bird it is necessary to say a few words as to some of the modifications which this bone may undergo in the different groups. The two great divisions of living birds, called Ratitæ and Carinatæ were formed by Professor Huxley on account of the character of the sternum, and from which character the two

* Carina, a keel.

† Fontanelle, French *fontanelle*, a little fountain; originally applied to the unossified gap which exists in the skull of the human infant at the junction of the parietals and frontals. Subsequently used in anatomy for any aperture in a bone which does not serve for the transmission of either a nerve or vessel, and which in the living animal is generally closed by membrane.

‡ Xiphisternum, from ξίφος, a sword, and στερνον the breast bone; applied to the lower termination of the mammalian sternum which in man is pointed.

§ Rostrum, a beak, used frequently in anatomy for a bony process.

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names have been derived. The Ratitæ (from *ratis*, a flat-bottomed boat, in allusion to the flat sternum), which, as we have seen, comprehend the old order Cursores, or the Ostriches and their allies, are characterized by having no carina or median keel to the sternum, which forms merely an oblong and slightly convex plate of bone, presenting many points of resemblance to the sternum of a reptile. The sternum of the Ratitæ ossifies solely from paired centres.

In the Carinatæ, on the other hand, the sternum (as in the three figured specimens) always possesses a carina, and ossifies from a median centre in that carina, as well as from lateral paired centres.* (The term Carinatæ is derived from *carina*, a keeled vessel.)

Very considerable variations in the form of the sternum occur among the Carinatæ, which are in great part due to the relative development of the notches and processes. In the Tinamous (*Dromæognathæ*), the notch between the middle and internal xiphoid processes extends nearly to the summit of the sternum, the internal xiphoid processes forming long and slender rods, and the external xiphoid processes being undeveloped. The whole sternum is excessively slender. In the Ducks, Auks, many Waders, and diurnal birds of prey, the sternum, though of ordinary breadth, is of enormous length, and extends down to or even beyond the pelvis. In the Swifts and Humming-birds, some Eagles and Petrels, and some other birds, there are no notches or perforations in the sternum, and the sternum is hence called *entire*. The sternum of the Frigate bird (*Tachypetes*) represented in figure 2 of plate III, is "entire," and is noticeable for its excessive breadth and shortness. The sternum of *Phænorhina* (one of the Columbidæ) represented in figure 1 of the same plate, is an example of an average-shaped sternum, with the notches fairly developed. The sternum of the fowl (fig. 3) has the notches extending much higher up, and the processes in consequence much more separated and distinct. In the greater number of birds belonging to the old order Passeres, the sternum is of average width and breadth, has large costal processes, a well-developed rostrum, and only a single moderate-sized notch inferiorly.

Shoulder-girdle.—We now come to the consideration of the bones forming the shoulder-girdle, which in birds consists of three bones—the *scapula*† (pl I, sc.), the *coracoid*‡ (pl. I, III,

* It is possible that the peculiar parrot, *Strigops*, may be an exception to this rule.

† Scapula, the shoulder blade.

‡ Coracoid, the name coracoid, (from κόραξ a raven, and εἶδος like), was originally applied to a process of the human scapula, which was supposed to resemble a raven's beak.

figs. 1 and 2; IV, fig. 6, cor.), and the *furculum** or clavicles (*ibid.* fu.). The scapula (sc.) corresponds to the shoulder-blade or scapula of mammals, but in place of being a broad and expanded plate with a median ridge, as is generally the case in that class, is a compressed sabre-shaped bone, in length generally proportional to the power of flight, and generally placed parallel with the vertebral column. There is no bone in birds corresponding to the supra-scapula† of reptiles. The coracoid (cor.) which corresponds to the coracoid process‡ of the higher mammalian scapula, in birds, as in reptiles and the lowest mammals, always exists as a distinct bone. The distal end of the coracoid is received into the groove of the sternum, which we have already referred to, when describing that bone, while the proximal end articulates with the scapula to form the glenoid cavity for the reception of the head of the humerus. There is never any notch or fontanelle in the coracoid of the bird, as is so often the case in reptiles.

The relative position of the scapula and coracoid afford an important point of distinction between the Ratitæ and the Carinatæ. In the former group the long axis of that part of the scapula which lies near the glenoid cavity is parallel to, or continuous with, that of the coracoid, and the two bones are always anchylosed together. In the Carinatæ, on the other hand, the long axis of the scapula nearly always forms an acute angle with that of the coracoid, though in the Dodo, and one or two other birds, this angle is slightly obtuse. An ossification of the tendons above the scapula frequently occurs in many of the Picariæ and Passeres which has been somewhat inappropriately named *scapula accessoria*.

The third bone of the avian shoulder-girdle is the furculum or "merry-thought" (fu.), which corresponds to the united clavicles of mammals and reptiles. In most birds the furculum forms one continuous bone, but occasionally, as in some Parrots, Owls and Pigeons (pl. III, fig. 1), the two clavicles always remain distinct. In other cases, as in *Tachypetes* (pl. III, fig. 2) anchylosis extends down to the other elements of the shoulder-girdle, and the furculum becomes immoveably united with the rostrum of the carina of the sternum. In *Opisthocomus*, the furculum becomes united both with the carina of the sternum and with the coracoids. In the Passerine birds (pl. I., fu.) the sternal extremity of the furculum usually developes a large flat vertical

* Furculum, a little fork, applied to the united clavicles or collar-bones of birds. The word clavicle is derived from the diminution of *clavis* a key, from some supposed resemblance of the human collar-bone to that instrument.

† Supra-scapula, *supra* above, and *scapula*.

‡ The coracoid process in all mammalia ossifies from a centre quite distinct from that of the scapula.

and median plate or *hypocleidium*,* while, on the other hand, the scapular extremity is likewise expanded, and ossifies separately as an *epicleidium*.† The united clavicles of birds appear to be quite peculiar to the class, and their great development and strength is correlated with the development of the power of flight. Their anchylosis mesially operates to counteract the tendency of the chest to collapse by the force of the downward stroke of the wings.

The fore-limb.—The fore-limb of birds presents the same divisions as in man and other mammals. The proximal bone (h. pl. I., fig. I, pl. IV.) or *humerus*‡ lies parallel with the long axis of the body, its typically ventral surface looking outwards. Its proximal extremity is expanded laterally into a large head (pl. IV., fig. 1 h); its outer (or ventral) surface superiorly is expanded into a large *pectoral crest* (p.c.), which affords attachment to the powerful pectoral muscles; this surface is convex. The upper part of the anterior surface presents a depression for the passage of the tendon of the biceps§ muscle. The inner (or dorsal) surface (right side of figure) is concave, and carries the pneumatic aperture in those birds which have a hollow humerus. The distal extremity of the humerus is also expanded and carries two condyles,—an internal condyle (i.c.) for the articulation of the *ulna* and an external condyle (e.c.) for the *radius*; the latter condyle forms a convex facet directed obliquely upwards and inwards on the anterior surface. Such are the general features of the humerus of a carinate bird. In the Ratitæ, on the other hand, the humerus is much less developed, and is in general a slender, cylindrical, and slightly curved bone. In the *Apteryx* the humerus, and the other bones of the fore-limb, are practically rudimentary.

The ulna ‖ (pl. I., ul.) forms the larger of the two bones of the forearm; it is a cylindrical bone slightly expanded at its two extremities, and which is not developed into an olecranon as in mammals. On its outer surface the ulna generally shows a row of tubercles which formed the points of attachment of the secondary quill-feathers. The radius (pl. I. r.) ¶ is a slender, slightly curved bone, which carries the greater part of the carpus or wrist at its distal extremity. The radius and ulna are placed not by the side of one another, but one is placed in front of the other,

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* Hypocleidium; derived from ὕπο beneath, and κλεῖς the clavicle.

† Epicleidium; a similarly-formed word to the last, substituting ἐπι upon, for ὕπο.

‡ Humerus, the shoulder, applied to the bone of the upper arm.

§ Biceps, from *bis*, double, and *ceps*, a form of *caput*, the head. The main flexor muscle of the arm which arises from two distinct heads.

‖ Ulna, from ὠλενη the elbow, applied to the outer one of the two bones of the fore-arm.

¶ Radius, a spoke, applied to the inner one of the two bones of the fore-arm.

and they are so articulated together, and with the humerus, as to admit of scarcely any rotation one or the other.

The carpus* which corresponds to the human wrist, is not composed of two rows of small bones as in the latter, but consists of only two bones placed side by side, one of which *(radiale)*, articulates with the radius, and the other (*ulnare*) with the ulna.

The manus† (plate I., m. & ph. 1, 2, 3) of the bird generally has three digits, which correspond to the pollex‡ and the second and third digits of the human hand (fore and middle fingers); the metacarpal bones of these digits are usually anchylosed together. The metacarpal bone of the pollex (m. 1) is usually much shorter than either of the metacarpals of the other two digits. The metacarpal of the second digit (m. 2) is stout and straight, while that of the third (m. 3) is curved and slender; a vacant space is generally left between the metacarpals; but this may be filled up with bony matter. The pollex has usually two phalanges, § the last of which may be curved and sheathed with horn. ‖ The second digit has typically three phalanges, but frequently as in the figure (ph. 2) only two are developed. The third digit never has more than two phalanges, and frequently, as in the figure (ph. 3), has only one.

In some of the Ratitæ *(Apteryx and Casuarius)* there is but one complete digit in the manus, which probably corresponds to the second digit of man. This digit is incased in horn and forms a claw. In the Ostrich the second digit is likewise terminated by a claw, but in no bird is the third digit so modified.

Pelvis.¶—The position of the pelvis of the bird is shown in the figured skeleton (pl. I., pl.), while the details of the conjoint bones, which form this part of the skeleton, are shown in figures 4 and 5 of plate III. Like that of a mammal or reptile, the pelvis of a bird consists of three distinct pairs of bones, *viz.*, the *ilium*** (il.), the *ischium*†† (is.), and the *pubis*‡‡ (pb.), the three united bones of either side being united to the vertebræ of the sacrum, and adjacent regions (sm.) The ilia (il.) of the avian pelvis are remarkable for their great antero-posterior extension, and for uniting with the whole length of the edges of the sacrum (sm.) Superiorly each ilium forms a

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* Carpus, from κάρπος, the wrist.
† Manus, the hand.
‡ Pollex, the thumb.
§ Phalanges, φαλαγξ a row—applied to the bones of the fingers and toes.
‖ In the figured skeleton the phalanges of the pollex are wanting.
¶ Pelvis, a basin,—applied to the bony arch with which the hind limbs of the Vertebrata articulate.
** Ilium, from *ilia*, the flanks. The haunch bone—so called from supporting the flanks.
†† Ischium, from ἰσχίον the hip.
‡‡ Pubis, from *pubes*, hair, so called because this bone underlies the hair of the groin. *(See further as to the Pubis, the P. S. p. 28.)*

wide arch over the upper part of the acetabulum (am.),* the centre of which is always occupied by membrane. In the majority of birds the ischium (is.) becomes broader posteriorly and extends backwards nearly parallel with the ilium, both bones uniting posteriorly. The vacuity which occurs between these two bones anteriorly corresponds to a notch in the mammalian pelvis, known as the *ischio-sciatic* notch; this interval in most birds forms a foramen.

The pubis (pb.) at its anterior extremity forms part of the socket for the head of the femur (am), and from thence is continued backwards and downwards as a slender curved bone running approximately parallel to the ischium; in general it is united only by ligament with its fellow of the opposite side. The ischium and pubis are entirely shut out by the ilium from any contact with the sacrum.

Such is the general arrangement of the pelvic bones in birds, though there are a few exceptions. In the Tinamous, and in many of the Ratitæ, the ischium is not united posteriorly by bone with the ilium, and the ischio-sciatic interval consequently forms a notch in place of a foramen. In *Rhea* the ischia unite in a median symphysis beneath the sacral vertebræ, which latter are only very imperfectly ossified. In the Ostrich (*Struthio*), alone among birds, the pubes unite in a median ventral symphysis. The general form of the pelvis of the Ratitæ, and specially the anterior projection of the ilium and the backward extension and slender form of the ischium and pubis, shew many points of affinity to the pelvis of certain extinct orders of reptiles (*e.g.*, Dinosauria), and indicate the close relationship which exists between these two classes of vertebrates.

The Hind-limb.—We now come to the consideration of the hind-limb of birds, which, as we shall see immediately, presents some very remarkable points of difference from the hind-limb of the mammalia. The first segment of the limb forming the thigh-bone or *femur*† (pl. I. f. and pl. IV., fig. 3) has the same composition in birds as in mammals. The upper articular head (h) which articulates with the acetabulum of the pelvis is rounded, and its axis is placed nearly at right angles to the long axis of the shaft. The centre of the head presents a slight rough depression (l.t.), indicating the point of attachment of the round ligament (*ligamentum teres*). The shaft is generally stout, and in its natural position lies nearly horizontally; it is terminated inferiorly by two condyles (i.c. & e.c.) which are elongated antero-posteriorly. A very characteristic

* Acetabulum, a vinegar-cup,—applied in anatomy to the socket for the head of the femur.

† Femur, the thigh—applied to the bone of the thigh.

ridge which plays between the heads of the tibia and fibula, is seen upon the posterior surface of the external condyle (e.c.) Though not belonging to the true skeleton it may be noticed that a sesamoid* bone, called the patella,† is usually developed in the tendon of the *quadriceps extensor femoris*‡ muscle, and that this sesamoid may occasionally be double.

We come now to the second segment of the leg of the bird, which is very characteristic, and which has been modified in a very peculiar manner from the primitive type form. In man and other mammals the lower leg, or leg below the knee, consists of two bones,—*tibia*§ and *fibula*‖; these are succeeded inferiorly by the ankle or *tarsus*¶ composed of two rows of small cuboidal bones placed one below the other. The ankle-joint is always placed between the tibia and the first row of the tarsus. The tarsus is succeeded by a row of five metatarsals**, and each metatarsal carries its own phalanges, which are two in number in the great toe (*hallux*), and three in all the others. With this slight sketch of the bones of the lower leg in man, we shall be able to understand the differences which exist in the leg of the bird. The small bone of the leg or fibula (pl. I., fi.) in birds forms a long slender style placed on the outer side of the tibia (t.) which terminates inferiorly in a point, and which is frequently anchylosed to the latter bone. The larger bone of the leg, the tibia or rather the *tibio-tarsus*†† (pl. I. t. pl. IV., fig. 2) is a very characteristic bone. Its proximal end is expanded and produced into a large *cnemial*‡‡ crest or process (cn). Its distal end (as.) is terminated by a rounded pulley-like surface; above this pulley there is frequently on the anterior surface an oblique bridge of bone (br.) beneath which pass the tendons of the *tibialis anticus* and of other long extensor muscles of the legs. The distal extremity of this bone (as.) in the young bird ossifies from a distinct centre, and it has been found that this portion really

* Sesamoid, from σησάμη, Indian corn, applied to nodular osseous tissues developed in the tendons of muscles.

† Patella, a cap; in osteology the bone of the knee-cap.

‡ Quadriceps extensor—the muscle forming the anterior part of the thigh which extends the lower leg. Its name is derived from its arising from four distinct heads.

§ Tibia, a trumpet, applied to the large bone of the lower leg, probably from its length and hollowness.

‖ Fibula, the pin of a broach, applied to the small bone of the lower leg.

¶ Tarsus, from ταρσος, the flat of the foot: in anatomy the bones forming the ankle joint.

** Metatarsals, from μετα, after, and ταρσος,—the bones which succeed the tarsus inferiorly.

†† Tibio-tarsus, compounded of *tibia* and ταρσος a barbarous but very convenient word, indicating that the bone to which it is applied is compounded of elements from the tibia and tarsus.

‡‡ Cnemial, from κνημη the bone of the lower leg.

corresponds to one of the elements (astragalus)* of the mammalian tarsus, and that consequently the so-called tibia of a bird is really a *tibio-tarsus*. The ankle-joint of a bird consequently occurs, not between the tibia and the tarsus, as in mammals, but in the middle of the tarsus itself.† In the succeeding portion of the limb of the bird we find no series of small cuboidal bones corresponding to the second row of the mammalian tarsus, but on the other hand we have a single long bone (pl. I. t. m. ; pl. IV., fig. 5) terminated superiorly by an expanded head (h.) and inferiorly by three semi-distinct pulley-like, or trochlear surfaces (tr.) The study of the development of this bone has shown conclusively that it really consists of a proximal element, which corresponds to the lower half of the mammalian tarsus, and of three parallel long bones, which together form its distal element, and of which the three extremities remain as the trochleæ below. These three united bones correspond to the metatarsals of the second, third and fourth digits of the mammalian foot, and the whole bone is consequently called the *tarso-metatarsus*.‡ In many birds distinct clefts or vacuities appear in the lower part of the shaft of this bone, which indicate its original composite origin. The fifth digit is invariably unrepresented in birds, and when the first or hallux§ is present (as in the figured skeleton) its metatarsal is generally incomplete above, and is united by ligament to the tarso-metatarsus. In some of the gallinaceous birds, a bony spur is developed from the shaft of the tarso-metatarsus: this spur is ensheathed in horn, and forms a formidable weapon of offence and defence.

We have now seen the very remarkable differences which exist between the leg of a bird and the leg of a mammal, and before leaving the subject, it may be well to notice that in certain reptiles an intermediate modification of the bones prevails. In living reptiles, as in crocodiles, the tibia and fibula are of equal length, and the latter always articulates with the tarsus. The two rows of the latter remain quite distinct, but the ankle-joint occurs *between these two rows*. The tibia has no cnemial crest, and the metatarsals are distinct. In certain extinct reptiles, however, belonging to the order Dinosauria, the fibula was very slender inferiorly, and the tibia had a large cnemial crest. The astragalus became anchylosed to the tibia to form a tibio-tarsus, but the distal elements of the tarsus and the metatarsus, in most cases at all events, remained distinct. We have

* Astragalus ἀστράγαλος the ankle bone.

† In other words the lower portion of what Ornithologists usually call the Tibia, is in reality a part of the Tarsus, so that the joint is between two parts of this latter.

‡ Tarso-metatarsus, compounded of ταρσος and μετα, after.

§ Hallux, from *allex*, the great toe.

here, therefore, a transition from the mammalian limb through the crocodilian and dinosaurian to the avian limb, which confirms the very close relationship which we have already found to exist between the osseous systems of birds and reptiles.*

There now only remains the foot of the bird; the component digits and phalanges of which are shown in the figured skeleton, I., II., III., IV. As we have already seen, the fifth toe is never developed, and the normal number of the phalanges in the digits of the bird is (as in many reptiles), 2, 3, 4, 5, reckoning from the first to the fourth digit. Usually the first digit is directed backwards, and the other three forwards. In the Owls, the fourth digit can also be directed backwards at will, and in the Parrots, Toucans, Cuckoos, Woodpeckers, and other climbing birds this, as well as the first digit is directed permanently backwards. In the Trogons, the first and second digits are directed backwards; while in the Swifts and some other birds all the four digits are directed forwards.

Classification.—In concluding this sketch I have appended two of the modern schemes proposed for the classification of birds. The first of these, with the exception of the first great division, to which is appended the name of Professor Marsh, is the arrangement put forth by Professor Huxley, in his paper on the classification of birds which we have already referred to. The second arrangement, which differs from Professor Huxley's, only in respect to part of the Carinatæ, is that put forward recently by Professor Newton, in the article "Birds" in the "Encyclopædia Britannica."

AVES.

I.—The jaws furnished with teeth.

1. ODONTORNÆ. (Marsh.)

a. Vertebræ biconcave.

1. *Icthyornidæ.* (Icthyornis.)†
2. *Apatornidæ.* (Apatornis.)

b. Vertebræ normal.

3. Hesperornidæ. (Hesperornis, Lestornis.)
4. Odontopterygidæ. (Odontopteryx.)

II.—Jaws without teeth.

A. Metacarpals not anchylosed together; tail longer than body.

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* I would refer the reader to Professor Huxley's "Anatomy of Vertebrated Animals," for farther details respecting the similarities between the skeletons of birds and reptiles.

† It is not impossible that these birds with biconcave vertebræ should be put into a separate division of the first class; for which the name *Ichthyospondylia* might be used.

II. SAURURÆ.*

5. *Archæopterygidæ* (Archæopteryx.)

B. Metacarpals anchylosed together; tail much shorter than body.

A. Sternum keelless.

III. RATITÆ.

a. Humerus rudimentary or very short, not more than one ungual phalanx.

a. A hallux.

6. *Apterygidæ* (Kiwis.)

b. No hallux.

7. *Dinornidæ* (Moas.)

8. *Casuaridæ* (Cassowaries.)

b. Humerus long; two ungual phalanges.

a. Ischia uniting beneath sacrum; pubes free.

9. *Rheidæ* (American Ostriches.)

b. Ischia free, pubes uniting in a ventral symphysis.

10. *Struthionidæ* (Ostriches.)

B. Sternum provided with a keel.†

IV. CARINATÆ.

a. Vomer broad behind, interposing between pterygoids, palatines, and sphenoidal rostrum.

(*Dromæognathæ.*)

11. *Tinamomorphæ* (Tinamous)

b. Vomer narrow behind; pterygoids and palatines articulating largely with sphenoidal rostrum.

a. Maxillo-palatines free.‡

i. Vomer pointed in front.

(*Schizognathæ.*)

12. *Charadriomorphæ* (Plovers, and Tringas.)

13. *Cecomorphæ* (Gulls, Petrels, Divers and Auks.)

14. *Spheniscomorphæ* (Penguins.)

15. *Geranomorphæ* (Cranes, Bustards, Rails, and *Dicholopus.*)

16. *Turnicomorphæ* (Hemipods.)

17. *Alectoromorphæ* (Fowls.)

18. *Pteroclomorphæ* (Sand-grouse.)

19. *Peristeromorphæ* (Pigeons and Dodo.)

20. *Heteromorphæ* (Hoazins.)

ii. Vomer truncated in front.

(*Ægithognathæ.*)

21. *Coracomorphæ* (Passerines.)

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* The term Saururæ is now somewhat inappropriate for this order as, *Hesperornis*, had also a long tail.

† Rudimentary in *Strigops*.

‡ Except *Dicholopus* and some species of *Crax*.

22. *Cypselomorphæ* (Swifts, Humming Birds, and *Podargus.*) (?)
23. *Celeomorphæ* (Woodpeckers and Wrynecks.)
    β. Maxillo-palatines united.
    (*Desmognathæ*)
24. *Aetomorphæ* (Birds of Prey.)
25. *Psittacomorphæ* (Parrots.)
26. *Coccygomorphæ* (Cuckoos, Kingfishers, Trogons, Goat-suckers, (?) Bee-Eaters, Hornbills, and Hoopoes.)
27. *Chenomorphæ* (Anserine Birds.)
28. *Amphimorphæ* (Flamingoes.)
29. *Pelargomorphæ* (Storks and Herons.)
30. *Dysporomorphæ* (Cormorants.)

Professor Newton's arrangement of the Carinatæ is as follows:—

IV. CARINATÆ.

(a.) Vomer broad behind, interposing between pterygoids, palatines and sphenoidal rostrum.
Dromæognathæ.
11. *Tinamomorphæ* (Tinamous.)

(b.) Vomer narrow behind; pterygoids and palatines articulating largely with sphenoidal rostum.

a. Maxillo-palatines free.
i. Vomer pointed in front.
(*Schizognathæ.*)
12. *Charadriomorphæ* (Plovers and Tringas.)
13. *Cecomorphæ* (Gulls, Petrels, Divers and Auks.)
14. *Spheniscomorphæ* (Penguins.)
15. *Geranomorphæ* (Cranes, * Bustards, Rails, and *Dicholopus.*)
16. *Alectoromorphæ* (Fowls.)
17. *Pteroclomorphæ* (Sand-grouse.)
18. *Peristeromorphæ* (Pigeons and Dodo.)
19. *Heteromorphæ* (Hoazins.)
20. *Coccygomorphæ* (part) (Goatsuckers.)
21. *Trochilomorphæ* (Humming birds.)

ii. Vomer truncated in front.
(*Ægithognathæ.*)
22. *Geranomorphæ* (part) (Thenocorinæ.)
23. *Turnicomorphæ* (Hemipods.)
24. *Cypselomorphæ* (Swifts.)
25. *Coracomorphæ* (Passerines.)

iii. Vomerine halves permanently distinct; maxillo-palatines arrested.

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* Except *Thinocorus.*

(*Saurognathæ.*)

26. *Celeomorphæ* (Woodpeckers and Wrynecks.)

β. Maxillo-palatines united, either by coalescence with nasal septum, or by meeting in a suture in middle line, or by complete anchylosis of plates of both sides.

27. *Aetomorphæ* (Birds of Prey.)
28. *Psittacomorphæ* (Parrots.)
29. *Coccycomorphæ* (Cuckoos, Kingfishers, Trogons, Bee-Eaters, Hornbills, and Hoopoes.)
30. *Chenomorphæ* (Anserine Birds.)
31. *Amphimorphæ* (Flamingoes.)
32. *Pelargomorphæ* (Storks and Herons.)
33. *Dysporomorphæ* (Cormorants.)

P.S.—Since the above has been in type, I have seen two very important papers by Professor O. C. Marsh,* in which an entirely new interpretation of the homology of part of the avian pelvis is put forth. On page 22 of this sketch, I have called the long slender bone forming the lower border of the avian pelvis, the *pubis* (plate III, fig. 5, pb.) Professor Marsh, from the study of the pelvis of some new American Dinosaurian reptiles has, however, conclusively proved that this slender bone is not the homologue of the pubis of a crocodile, (which is a stout bone, placed in front instead of behind the acetabulum), but is the homologue of a similarly-situated process of the pelvis of certain Dinosauris. In those animals the pubis consists of a stout portion in front of the acetabulum, which is directed downwards and forwards, and which corresponds to the pubis of the Crocodile, and of a second slender portion, behind the acetabulum, which runs parallel to the ischium, and which corresponds to the so-called pubis of the bird. This slender portion ossifies separately, and has been named by Professor Marsh the *post-pubis*. The homologue of the reptilian pubis proper is represented in the pelvis of the bird by the small process which occurs on the lower border immediately in front of the acetabulum. This small process is most developed in those birds which use the hind limb to a greater extent than is usually the case (*Geococcyx, Dromæus, Apteryx.*) The slender post-pubis seems to be developed only in birds, and in those Dinosaurian reptiles, which seem in walking to have habitually used their hind limbs only. The Dinosaur is, however, distinguished from the bird by always

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* American Journal of Science, November 1878—January 1879.

having the true pubis well developed, in place of being almost or quite rudimentary. In those reptiles, on the other hand, which habitually make use of both pairs of limbs in walking, the post-pubis is never developed, while the true pubis is always of large size.

It would seem, therefore, that in birds and reptiles the development of the post-pubis is correlated with the power of walking on the hind-limb only, and that this development is probably necessary for the proper balance of the body when in this position. It also seems that when the fore-limbs cannot be put on the ground at all, as in birds, that the true pubis becomes practically rudimentary.

For details respecting this very interesting and important discovery, I must refer the reader to Professor Marsh's papers.

R. L.

PLATE I.

(EXPLANATION.)

Skeleton of *Corvus jamaicensis:* copied from plate 142 of M. M. Edward's "Oiseaux fossiles de la France."

ca. carpus.
cor. coracoid.
cr. cranium.
c. v. cervical vertebræ.
c. vt. caudal vertebræ.
cx. coccyx.
d. v. dorsal vertebræ.
f. femur.
fi. fibula.
fu. furculum (clavicles.)
h. humerus.
l. lachrymal.
mn. mandible.
m. 1. 1st metacarpal.
m. 2. 2nd do.
m. 3. 3rd do.
na. nares (external.)
o. orbit.
ph. 2, ph. 3 } proximal phalanges of 2nd and 3rd digits of manus.
pl. pelvis.
p. mx. præmaxillæ.
p. u. processus uncinatus.
r. rib.
ra. radius.
sc. scapula.
sm. sacrum.
st. sternum.
t. tibio-tarsus.
t. m. tarso-metatarsus.
ul. ulna.
I 1*st* digit of foot.
II 2*nd* do.
III 3*rd* do.
IV 4*th* do.

PLATE II.

(EXPLANATION.)

Fig. 1.—Under view of skull of Common Fowl, to show Schizognathous modification; enlarged $1\frac{1}{2}$ diameters.

Fig. 2.—Upper view of same skull.

Fig. 3.—Under view of skull of *Ardea cinerea*, to show Desmognathous modification.

Fig. 4.—Under view of skull of *Corvus corax*, to show Ægithognathous modification.

Fig. 5.—Under view of skull of *Dromæus novæ-hollandiæ*, to show Dromæognathous modification.

bo. basi-occipital.
b.pt. basi-pterygoid process.
b.sph. basi-sphenoid.
cn. occipital condyle.
eo. ex-occipital.
eth. ethmoid.
eu. eustachian opening.
f.m. foramen magnum.
fr. frontal.
m.xp. maxillo-palatine process.
na. nasal.
n.pmx. nasal process of pre-maxilla.
pa. parietal.
pf. post-orbital process of frontal.
pl. palatine.
p.mx. pre-maxilla.
pt. pterygoid.
qj. quadrato jugal.
qu. quadrate.
so. supra-occipital.
sph. r. sphenoidal rostrum.
sq. squamosal.
vo. vomer.

Figures 1 and 2 are copied from the article "Birds" in "Encyclopædia Britannica" (figs. 19 and 20); the other three are copied from Professor Huxley's paper on the classification of Birds published in the Proceedings of the Zoological Society of London for April 1867 (figs. 3, 25, 32.)

PLATE III.

(EXPLANATION.)

Fig. 1.—Sternum, coracoids, and furculum of *Phænorhina goliath*.—"*Oiseaux fossiles de la France*," pl. 139, fig. 1.

Fig. 2.—Sternum, coracoids, and furculum of *Tachypetes aquila*.—*Ibid*, pl. 35, fig. 2.

Fig. 3.—Lateral view of sternum of Common Fowl. Huxley's "Anatomy of Vertebrated Animals," fig. 81.

Figs. 4. & 5.—Superior and lateral views of pelvis of *Francolinus asiæ*.—"*Oiseaux fossiles de la France*," pl. 118, figs. 1, 3.

am. acetabulum.
ca. carina.
cor. coracoid.
c.p. costal process.
e.x. external xiphoid process.
fu. furculum.
il. ilium.
is. ischium.
ix. internal xiphoid process.
m.x. middle do.
pb. pubis.
sm. sacrum.
st. sternum.

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Plate IV.

(EXPLANATION.)

Fig. 1.—Anterior view of right humerus of *Anser albifrons*—"*Oiseaux fossiles de la France*," pl. 18, fig. 1.

b.a. groove for brachialis anticus muscle.
b.i. groove for biceps muscle.
e.c. external condyle.
b. head.
i.c. internal condyle.
pc. pectoral crest.

Fig. 2.—Anterior view of left tibio-tarsus of *Anser albifrons*.—*Ibid*, pl. 14, fig. 1.

as. astragalus.
cn. cnemial crest.
br. bridge over extensor tendons.

Fig. 3.—Posterior view of right femur of *Aquila fulva*.—*Ibid*, pl. 2, fig. 4.

ec. external condyle.
i.c. internal do.
h. head.
l.t. fossa for ligamentum teres.
tr. great trochanter.
pop. popliteal space.

Fig. 4.—Inferior view of seventh cervical vertebra of *Aquila fulva*.—*Ibid*, pl. 6, fig. 12.

c. centrum.
pt.z. postzygapophysis.
pz. prezygapophysis.

Fig. 5.—Anterior view of left tarso-metatarsus of *Aquila fulva*.—*Ibid*, pl. 3, fig. 1.

h. head.
tr. digital trochleæ.

Fig. 6.—Anterior view of left coracoid of *Aquila fulva*.—*Ibid* pl. 4, fig. 6.

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of the Peninsula, and of these several, I am inclined to believe never do occur there.

From time to time I have had parties down there collecting, chiefly towards the extreme south, and have had all the Malaccan collections overhauled, but even after thus collecting many thousand specimens, I found that I could not count four hundred species, and that I was still quite ignorant of the limits of distribution of most of them, and so I determined to give up desultory raids, and, instead, work thoroughly and systematically the western half of the Peninsula.

Accordingly my whole staff—two European and eight native collectors—have been located in four suitable working stations, (where of course each party gets what local assistance it can) which with their environs they will work exhaustively. They will then take up four new stations—and so on. Considering that Malacca and its immediate neighbourhood has been watched for us for several years, we having been through probably over 30,000 birds prepared there, that Davison has already pretty exhaustively worked Johore, and that a friend has been working Singapore for us, I apprehend that eight judiciously chosen stations in the plains and four in the hills will suffice to give us a very fair idea of the birds of the western half of the Malay Peninsula, where I hope myself to spend a few months during next cool season.

In a couple of years, then, I may hope to present a rough resumé of the birds of this region similar to that lately furnished for Tenasserim.

In the meantime I shall publish, from time to time, notes on species possessing any special interest, and an *ad-interim* tentative list of species at present known or recorded from this tract, and I shall be deeply grateful for any references to papers and works, other than those above enumerated, dealing with the subject, as also for information as to species omitted from my list.

One very interesting result of our investigations, so far as they have yet gone, is the discovery in the Malayan Peninsula of the previously unknown species to which Mr. Gray bestowed the name of *Turdus avensis* on the faith of a native drawing.

This bird is figured and described at page 530 of Griffith's Translation of Cuvier's Animal Kingdom, Vol. VI, part *Aves*, J. E. Gray, 1829.

The figure is not a very bad one, and can be certainly identified as our bird. The description runs as follows:—

"The Ava Thrush, so named by Mr. Gray, is from Mr. Crawfurd's collection of Indian drawings. It may, probably,

when better known, exhibit some deviations from the ordinary type of the genus *Turdus*, and is therefore referred to it conditionally. The bill is much bent towards the point; the top of the head and nape are bright brown," (figured, and correctly so, a sort of maroon chestnut); "the belly, vent, wing-coverts, and spots before and behind the eye, at the base of the lower mandible, and the chin, a yellowish white."

This, though a poor description, is, coupled with the plate, sufficient to fix the species, in regard to which the following remarks may, I think, be useful:—

Geocichla avensis, *J. E. Gray.*

Like G. interpres, *but with the lores and the greater portion of the ear-coverts white, and with no white tippings to the greater wing-coverts.*

This is a remarkable Malayan, or possibly Siamese representative form (running up, it would appear, into Upper Burmah) of the Javan *G. interpres* (Kuhl), and the Celebean *G. erythronota* (Sclater); agreeing with the former in the dark back, with the latter in the white lores and ear-coverts, and differing, *inter alia*, from both in wanting the white tips to the greater wing-coverts, and thus exhibiting only *one* white wing bar.

The only specimen as yet obtained by us was shot in the hills in the native state of Rumbow, which lies east of the British possessions at Malacca.

Dimensions (from the skin).—Length, 7·0; wing, 4·25; tail, 2·5; tarsus, 1·1; bill from frontal bone, 0·82.

Legs and feet pale yellow; bill deep brown, yellowish white at base of lower mandible.

Lores white; forehead, crown, occiput, nape and sides of the neck, behind ear-coverts, rather bright ferruginous chestnut; chin more or less white; throat black, mottled with white, this being the colour of the basal portions of the feathers; sides of lower mandible (except apparently a tiny white patch) * cheeks, tips of upper portion of ear-coverts, and nearly the entire breast, jet black; rest of ear-coverts (the feathers with very disunited webs) silky white; rest of lower parts white, sullied on sides and lower tail-coverts; each feather of the lowest portion of the breast and the upper abdomen, with a conspicuous terminal black spot; edge of the wing at the carpal joint white; wing lining black, feathers obsoletely

* The specimen is a poor one, and I cannot make sure about the chin and this patch.

margined with white ; a very broad conspicuous white wing bar on the lower surface of the quills, not extending to the first three primaries, occupying the bases of the secondaries and later primaries, and running some distance down the webs of the fourth and fifth primaries, the two last to which it extends.

Upper surface a dusky brownish ashy, with a faint olivaceous shade (I guess this specimen was a female, I dare say the male is more cyaneous ;) tail and upper tail-coverts plain hair brown ; the outermost feather on each side, with a sullied white wedge-shaped spot on the inner web at the tip, and a corresponding speck on the next feather.

Wings dark hair brown ; the whole of the median coverts pure white ; the third and succeeding primaries with dull grey edgings to the outer webs above the emarginations, and the secondaries with an olivaceous shade on the outer webs.

The lower tail-coverts have a pale dingy rufous tinge. I do not know whether this is dirt or natural. The flanks are marked with spots similar to those of the upper abdomen, but smaller and duller coloured.

It is satisfactory thus to recover a bird hitherto unseen by any European, and generally confounded with *G. interpres*, just as it was to find out in my *Rallina telmatophila* (S. F., VII, 142 and 451) the real *Rallus superciliaris*, Eyton, so long and so inexplicably confounded with *Porzana cinerea*.

Another scarcely less interesting species is, I believe, new, and I shall designate it after the gentleman who procured it, Captain Webber, Chief Adviser of the Rajah of Tonka, in whose territories it was shot.

Ixidia webberi, *Sp. Nov.* ?

Like I. squamata, *but the yellow of upper surface darker and more olivaceous ; the abdomen and flanks like the breast, and almost the whole inner web of the outer tail-feather white.*

This interesting species which forms the third of Blyth's genus *Ixidia*, distinguished amongst other things from *Brachypodius*, by its square tail and shorter and less full upper tail-coverts, runs very close to *Ixidia* (*Ixos*) *squamata*, Tem. P. C., 453, fig. 2 ; but yet differs sufficiently to be instantly separable therefrom.

The following are dimensions from the dry skin :—

Length, 6·0 ; wing, 3·2 ; tail, 2·75 ; tarsus, 0·6 ; bill, at front, from frontal bone, 0·62.

Forehead, lores, cheeks, ear-coverts, crown, occiput and nape glossy black, with a scarcely perceptible steely gloss; chin and entire throat, snow white; lower tail-coverts intense gamboge yellow; rest of the lower parts black, each feather narrowly fringed with white, only a narrow stripe of feathers down the centre of the lower abdomen to the vent sullied white; entire mantle golden olive, brightening to pure golden on the upper tail-coverts; tail dull black, outer feather on each side tipped, and with nearly the entire inner web, white; next three feathers on either side, with a similar but successively diminishing patch of white on the inner web; wings hair brown, the third and next few succeeding primaries suffused on the outer webs above the emarginations with a golden olive, brighter than on the interscapulary region; the rest of the quills, with nearly the whole of the outer webs, of this colour growing duller as it recedes to the tertiaries, which have the greater part of *both* webs thus coloured.

The bill appears to have been dark brown, paler on the lower mandible; the legs and feet were probably plumbeous, but it is impossible to be certain.

Captain Webber assures us that this species is not uncommon in the interior of the Tonka territories.

I cannot avoid remarking *en passant* that Mr. Gray's location of *Brachypodius chalcocephalus* (figured on the same plate with *Ixidia squamata*) between *Volvocivora* and *Lalage* is, to me, perfectly inexplicable and untenable, the bird being a typical Bulbul of the *Brachypodius* type.

And now about this list: it is a very poor thing, but the best I have been able to put together; and considering that at present no list at all exists, I would fain hope that it will prove better than none, and that ornithologists in Europe and America, into whose hands it may fall, will kindly assist me in correcting and enlarging it. Some of the species entered in my list are quite unknown to me, and only receive a place because they have been said to occur in the Malayan Peninsula, and I do not know how to dispose of them. Very possibly they are synonyms of species which I have already recorded.

For instance I can make nothing of *Euptilosus euptilosus*, Gray's H. L. P. 271, ex. Jard. and Selb. Ill. Orn. New Ser. pl. 3. What is this?

What, again, is *Hydrocissa migratorius*, Maingay? There are several others which, in like manner, I cannot trace.

In the list, I have printed in Roman type only those species which (despite anything that may have been asserted to the contrary) do not, *so far as I know*, occur anywhere in Tenasserim, Burmah, India, Ceylon, the Andamans and Nicobars,

and which, therefore, do not appear at all, or only appear in italics, in my list of the birds of India. All birds which do also occur in any of the above countries or localities, and which are not, therefore, *quoad the British Empire*, peculiar to the tract we are dealing with, appear in italics.

To every species of which we have ourselves secured specimens in the Malay Peninsula, I have prefixed a star, and I have added the localities at which *we* have obtained them. I have also added in the case of these and of other species *in italics*, localities, (other than those where we have obtained them) assigned for them by others and the authorities for the same.

In the case of birds of which I doubt either the validity of the species, or their occurrence in the Malay Peninsula, I have prefixed a note of interrogation to the name.

It will be understood that the region to which this list refers is that portion of the Malay Peninsula, bounded north by the Pakchan Estuary, east by the central watershed line, and west and south by the sea; and that though including small islands close along shore, such as Junk-selan, Penang, Singapore, &c., it does not as yet pretend to deal with the islands lying further out to sea.

The eastern half of the Peninsula, with which we hope to deal hereafter, will, I am inclined to believe, prove to yield a somewhat different set of birds, and to belong to a recognizably distinct sub-province.

And now for the list, I merely repeating, to prevent any possible misconstruction, that it makes no pretence to completeness, and is only what in mathematics we should designate a working hypothesis.

The list contains altogether 408 species, out of which I consider that 20, as indicated by notes of interrogation, are doubtful.

Out of the 408 species in all, or 388 that I admit, we have only as yet ourselves collected specimens of 302, to each of which a star is prefixed. Doubtless during the current year we shall get most of the remaining species, and a great many more; I shall be greatly surprised if this tract does not prove to contain at least 600 species.

Out of the 408 species, there are only 124 which, so far as we know, neither cross the Pakchan Estuary northwards, nor (like *Lalage terat* and *Cinnyris pectoralis*) appear at the Nicobars, though nowhere on the mainland of India or Burmah. The names of these 124 species are printed in the list in roman type; the names of the rest, which do occur elsewhere in our Indian dominions, are printed in italics.

I have no doubt that I have often failed to use the oldest name. I believe that some few species, which, following my betters, I have accepted as identical with others, named originally from Borneo, Java, &c., will prove distinct and require separate titles, and I think it possible that in one or two instances (though I have carefully examined all Blyth's specimens) my identifications may be wrong. I have tried my best to avoid such errors, but in some cases have been unable to make certain even with the original descriptions before me.

To no species included in my "List of the Birds of India," have I thought it necessary to give references; such must be sought for in that list. To a few of the others I have added references to passages in STRAY FEATHERS, where they have been described or discussed.

LIST.

2.—*Otogyps calvus, Scop.*

[*Malayana, Sharpe, Cat. I.*]

4.—*Gyps indicus, Scop.*

[*Malayana, Gr. B. M. H. List*, 2; *Bly. J. A. S. B. XIX.*, 504.]

5.—*Pseudogyps bengalensis, Gm.*

[*Malacca, Cantor, Horsf. and Moore, Cat.*, 414.]

*8.—*Falco peregrinus, Gm.*

[Malacca.]

14.—*Falco severus, Horsf.*

[*Malacca, Jerd. Salvad. U. di B.*, 2.]

*20 *ter.*—*Microhierax fringillarius, Drap.*

[Malacca, Kurroo, Chohong, Johore, Singapore; *Penang, Cantor, Horsf. and Moore, Cat.*, 414.]

22.—*Astur trivirgatus, Reinw. in Tem.*

[*Malay Pen., Bly. J. A. S. B. XIX.* 333—*Mt. Ophir, Malacca, Wall., Sharpe, Cat. I.* 106.]

23 *ter.*—*Astur soloensis, Horsf.*

[*Malacca, Wall. Salvad. U. di B.*, 18.; *Sharpe, B. M. Cat. I.*, 115.]

*23 *ter A.*—Astur cuculoides, *Tem.*

[Malacca.]

*25.—*Accipiter virgatus, Reinw. in Tem.*
[Malacca, Pulo Seban, Kurroo.—*Penang; Cantor, Horsf. and Moore, Cat.*, 414.]

? 25 *A.*—Accipiter stevensoni, *Gurney.*
[*Singapore, Wall. Ibis*, 1868, 216.]

*31.—Aquila pennata, *Gm.*
[Singapore.]

*32.—Neopus malaiensis, *Reinw. in Tem.*
[Malacca.]

*34.—*Limnaetus caligatus, Raffl.*
[Malacca; *Penang, Cantor, Horsf. and Moore, Cat. Mus. E. I. C.*, 414.]

*34 *A.—Limnaetus horsfieldi, Vig.*
[Malacca; *Penang, Cantor, Horsf. and Moore, Cat. Mus. E. I. C.*, 414.]

*34 *ter.—Limnaetus alboniger, Bly.*
[Singapore; *Penang, Malacca, Bly. Salvad. U. di B.*, 15.]

37.—*Lophotriorchis kieneri, Gerv.*
[*Malacca, Sharpe, B. M. Cat. I.*, 256.]

*39 *quat A.*—Spilornis pallidus, *Wald.*
[Malacca, Nealys, Johore.]

? 39 *quint.*—Spilornis bacha, *Daud.*
[*Singapore, Bly. Salvad. U. di B.*, 8; *Malacca, Sharpe, B. M. Cat. I.*, 291.]

I think this species, founded on Levaillant's plate, should be rejected; it is impossible to identify it with certainty.

40.—*Pandion haliaetus, Lin.*

Davison feels sure he has seen this along the coast.

41.—*Polioaetus ichthyaetus, Horsf.*
[*Penang, Cantor, Horsf. and Moore, Cat. Mus. E. I. C.*, 415.]

41 *ter.—Polioaetus humilis, S. Müll. and Schl.*
[*Malacca, Bly.; Singapore, Strickl. Salvad. U. di B.*, 7.]

*43.—*Haliaetus leucogaster, Gm.*
[Singapore.—*Malacca, Wall. Salvad. U. di B.*, 6; *Penang, Cantor, Horsf. and Moore, Cat. Mus. E. I. C.*, 415.]

48 *bis.—Butastur indicus, Gm.*
[*Malacca, Egton. Salvad. U. di B.*, 9.]

53 *A.*—Circus spilonotus, *Kaup.*
[*Malayan Peninsula, Sharpe, B. M. Cat. I., 59.*]

*54.—*Circus æruginosus, Lin.*
[Malacca.]

55.—*Haliastur indus, Bodd.*
[*Malacca, Wall. Salvad. U. di B.,* 12; *Penang, Cantor, Horsf. and Moore, Cat. Mus. E. I. C.,* 415.]

Seen at Singapore by Davison. May prove to be *H. intermedius.*

56 *ter.*—*Milvus affinis, Gould.*
[*Penang, Cantor, Horsf and Moore, Cat. Mus. E. I. C.,* 414.]

*57.—*Pernis ptilorhyncha, Tem.*
[Singapore.]

*57 *bis.*—Pernis brachypterus, *Bly.*
[Malacca.]

I am much disposed to consider this form distinct; see my remarks, S. F., VI, 24. Certainly we get in the Malay Peninsula, two types, one the normal Indian form, the other a smaller, intenser colored, very long-crested race. We have as yet, however, too few specimens to speak positively.

57 *ter.*—*Machæramphus alcinus, Westerm.*
[*Malacca, Gray, Brit. M. H. List,* 26.]

58.—*Baza lophotes, Cuv.*
[*Malacca, Schl. Wall. Ibis,* 1868, 19; *Sharpe, B. M. Cat. I,* 353.]

58 *bis A.*—Baza jerdoni, *Blyth,* J. A. S. B., XI., 464; XV., 4.
[*Malacca, Blyth.*]

I do not think that this species has yet been satisfactorily identified. Blyth's own identification was, I think, certainly wrong. It may prove identical with my *Baza incognita,* but I do not think it is either *magnirostris, sumatrensis* or *reinwardti.*

59.—*Elanus cæruleus, Desf.*
[*Penang, Cantor, Horsf. and Moore, Cat. Mus. E. I. C.,* 414.]

60.—*Strix javanica, Gm.*
[*Malacca, Salvad. U. di B.,* 22.]

62.—*Phodilus badius, Horsf.*

[*Malacca, Wald. Salvad. U. di B., 22; Penang, Cantor, Horsf. and Moore, Cat. Mus. E. I. C.*, 415.]

*63 *A.*—Syrnium maingayi, *Hume.* S. F. VI., 27.

[Malacca.]

65 *bis.*—*Syrnium seloputo, Horsf.*

[*Penang, Wall. Salvad. U. di B.*, 21.]

*71 *bis.*—*Bubo orientalis, Horsf.*

[Pulo Seban; *Malacca, Cantor, Horsf. and Moore, Cat. Mus. E. I. C.*, 415; *Singapore, Wall., &c., Salvad. U. di B.*, 20.]

*73 *bis.*—*Ketupa javanensis, Less.*

[Malacca, Pulo Seban, Nealys, Johore; *Penang, Cantor, Horsf. and Moore, Mus. E. I. C.*, 415.]

*74 *A.*—Scops stictonotus, *Sharpe.*

[Malacca.]

I am now becoming inclined to doubt the validity of this and many other species of *Scops*, which I have hitherto admitted. I fear we shall have "to lump" extensively.

* 74 *sex.*—Scops malayanus, *Hay.*

[Malacca.]

74 *nov.*—*Scops sagittatus, Cassin.*

[*Malacca, Gr. B. M. H.-List*, 46.]

74 *nov. A.*—Scops rufescens, *Horsf.* Tr. L. S., XIII, 140.

[*Mt. Ophir, Malacca, Wall. Sharpe, B. M. Cat. II.*, 103.]

* 75 *quint.*—*Scops lempiji, Horsf.*

[Malacca, Singapore; *Penang, Wellesley Pro. Cantor, Horsf. and Moore, Cat. Mus. E. I. C.*, 415.]

? 77.—*Glaucidium radiatum, Tick.*

[*Quedah, Cantor, Horsf. and Moore, Cat. Mus. E. I. C.*, 415.]

I do not for one moment believe in the occurrence of this species in the Malay Peninsula. Probably some Siamese representative of this and the Javan *castanopterum*, occasionally straggles into both Tenasserim and the northern portions of our present region

* 81 *bis.*—*Ninox scutulata, Raffl.*

[Malacca, Pulo Seban, Tampin, Singapore; *Penang, Cantor, Horsf. and Moore, Cat. Mus. E. I. C.*, 415.]

* 82 *bis.*—*Hirundo gutturalis, Scop.*

[Malacca, Pulo Seban, Kurroo, Johore, Singapore; *Penang, Wald., Salvad. U. di B.*, 126.]

83.—*Hirundo javanica, Sparrm.*

[*Malacca, Moore; Penang, Cantor, Salvad, U. di B.*, 126.]

I have never got the bird, and I must say that I feel doubts as to its complete identity with the Nilghery *domicola*, Jerd.

* 85 *quint A.*—Hirundo archetes, *Hume.* S. F., V, 266.

[Malacca, Kurroo.]

There is a *Hirundo badia*, of Cassin, Gr. H. List, 69, which *may* be this species, but I cannot discover where it was described, and should be much obliged to any one who would send me a copy of the description. The bird is at any rate quite distinct from *hyperythra* of Ceylon.

* 95 *bis.*—*Chætura leucopygialis, Bly.*

[Kurroo, Nealys, Johore; *Penang, Cantor, Salvad. U. di B.*, 125]

96 *bis.*—*Chætura gigantea, Hass.*

[*Malacca, Bly.; Penang, Cantor; Singapore, Wall.; Salvad. U. di B.*, 124.]

100 *bis.*—*Cypsellus subfurcatus, Bly.*

[*Penang, Cantor; Malacca, Cantor; Wall.; Salvad. U. di B.*, 110.]

101 *bis.*—*Cypsellus pacificus, Lath.*

[*Penang, Cantor; Malacca, Bly., Salvad. U. di B.*, 119.]

* 102 *bis.*—*Cypsellus infumatus, Sclat.*

[Johore, Singapore.]

* 103 *bis.*—*Collocalia linchi, Horsf.*

[Johore; *Malacca, Wall. Salvad. U. di B.*, 121.]

103 *quat.*—*Collocalia spodiopygia, Peale.*

[*? Malacca, Jerd. Salvad U. di B.*, 121.]

103 *quat A.*—Collocalia troglodytes, *G. R. Gray.*

[*Malacca, Bly., Cat. Mus. A. S. B.*, 336.]

* 104 *bis.*—*Dendrochelidon comata, Tem.*

[Johore.]

* 104 *ter.*—*Dendrochelidon longipennis, Rafin.*

[Malacca, Pulo Seban, Johore, Singapore.]

* 105 *ter.*—Batrachostomus affinis, *Bly.*

[Malacca.]

* 105 *ter A.*—Batrachostomus stellatus, *Gould.*
[Malacca.]

* 105 *ter C.*—Batrachostomus auritus, *Tem.*
[Malacca.]

? 107.—*Caprimulgus indicus, Lath.*
[*Malacca, Horsf. and Moore, Mus. E. I. C.*, 113.]

I doubt the occurrence of this species if *jotaka* be really distinct, for in that case it would be the latter that would occur here.

* 110.—*Caprimulgus macrurus, Horsf.*
[Malacca, Pulo Seban, Kurroo, Singapore; *Penang and Welles. Prov. Stol.*]

114 *bis.*—*Lyncornis cerviniceps, Gould.*

The note of this species is quite distinct from that of *temminckí*; Davison feels perfectly certain that he has heard it in the northern portions of the region.

* 114 *ter. A.*—Lyncornis temmincki, *Gould.*
[Malacca, Kurroo, Nealys, Johore; *Penang, Cantor, Salvad. U. di B.*, 115]

* 115 *A.*—Harpactes diardi, *Boie.*
[Malacca, Pulo Seban, Kurroo, Nealys, Johore, Singapore.]

* 115 *B.*—Harpactes kasumba, *Raffl.*
[Malacca, Nealys, Singapore; *Wellesley Prov. Stol.*]

* 115 *bis.*—*Harpactes duvauceli, Tem.*
Malacca, Kurroo, Nealys, Johore.]

* 115 *bis. A.*—Harpactes rutilus, *Vieill.* (S. F., VI., 65.)
[Malacca.]

* 117 *A.*—Merops sumatranus, *Raffl.*
[Malacca, Pulo Seban, Kurroo, Chobong, Singapore; *Penang, Cantor, Horsf. and Moore, Mus. E. I. C.*, 416.]

* 118.—*Merops philippinus, Lin.*
[Malacca, Pulo Seban, Kurroo, Nealys, Singapore; *Wellesley Prov. Stol.*]

* 119.—*Merops swinhoii, Hume.*
[Tonka, Penang.]

* 122 *bis.*—*Nyctiornis amictus, Tem.*
[Malewoon (Malay. Pen.), Malacca, Kurroo.]

* 126.—*Eurystomus orientalis, Lin.*
[Kopah, Malacca, Pulo Seban, Kurroo ;—*Singapore, Diard., Salvad. U. di B.*, 105.]

* 127 *bis.*—*Pelargopsis burmanica, Sharpe.*
[Malacca.]

* 127 *bis A.*—Pelargopsis malaccensis, *Sharpe.*
[Pulo Seban, Kurroo, Johore.]

* 128.—*Pelargopsis amauropterus, Pears.*
[Kopah.]

* 129.—*Halcyon smyrnensis, Lin.*
[Pulo Seban, Nealys, Singapore ;—*Penang, Cantor, Horsf. and Moore, Mus. E. I C.*, 417.]

* 130.—*Halcyon pileata, Bodd.*
[Kopah, Malacca, Pulo Seban, Kurroo, Singapore ;—*Wellesley Prov. Stol. ; Penang, Cantor, Horsf. and Moore, Mus. E. I. C.*, 417.]

* 131.—*Halcyon coromanda, Lath.*
[Malacca ;—*Penang, Sharpe ; Salvad. U. di B.*, 101 ; *Wellesley Prov. Stol.*]

* 131 *bis.*—*Halcyon concreta, Tem.*
[Malacca.]

*132.—*Halcyon chloris, Bodd.*
[Malacca ;—*Penang, Cantor, Salvad. U. di B.*, 103.]

* 132 *ter.*—*Carcineutes pulchellus, Horsf.*
[Malacca, Kurroo, Johore, Singapore ;—*Wellesley Prov. Stol.*]

* 133.—*Ceyx tridactylus, Pall.*
[Malacca, Pulo Seban ;—*Wellesley. Prov. Stol ; Penang, Cantor, Horsf. & Moore, Mus. E. I. C.*, 392.]

* 133 *A.*—Ceyx rufidorsus, *Strickl.*
[Malacca ;—*Singapore, Sharpe, Salvad. U. di B.*, 97.]

* 134.—*Alcedo bengalensis, Gm.*
[Malacca, Pulo Seban, Nealys, Chohong, Singapore ;—*Penang, Cantor, Salvad. U. di B.*, 93; *Wellesley Prov. Stol.*]

* 135 *bis A.*—Alcedo euryzona, *Tem.*
[*Malacca, Blyth ; Salvad. U. di B.*, 95.]

Whether *euryzona* and *nigricans* are really identical, and if not, which of the two occurs in the Peninsula, is still doubtful (*vide* S. F. VI, 82.)

* 135 *ter.*—*Alcedo meninting, Horsf.*
[Malacca, Singapore;—*Penang, Cantor, Salvad. U. di B.*, 94.]

136.—*Ceryle rudis, Lin.*
[*Quedah, Cantor, Horsf. and Moore, Mus. E. I. C.*, 417.]

* 137 *bis.*—*Calyptomena viridis, Raffl.*
[Malacca, Chobong, Johore, Singapore;—*Wellesley Prov. Stol.; Penang, Cantor, Horsf. and Moore, Mus. E. I. C.*, 417.]

* 139 *ter.*—*Eurylæmus javanicus, Horsf.*
[Malacca, Nealys, Johore, Singapore.]

* 139 *ter A.*—*Eurylæmus ochromelas, Raffl.*
[Malacca, Nealys, Johore, Singapore;—*Penang, Wald. Salvad. U. di B.*, 108; *Wellesley Prov. Stol.*]

* 139 *quint.*—*Cymborhynchus macrorhynchus, Gm.*
[Malacca, Pulo Seban, Kurroo, Nealys, Chobong, Singapore;—*Wellesley Prov. Stol.*]

* 139 *sex.*—*Corydon sumatranus, Raffl.*
[Malacca, Singapore;—*Wellesley Prov. Stol.*]

140.—*Dichoceros cavatus, Shaw.*
[*Malacca, Penang, Cantor, Horsf. and Moore, Mus. E. I. C.*, 584.]

* 140 *A.*—Buceros rhinoceroides, *Tem.*
[Malacca, Johore;—*Singapore, Diard. Salvad. U. di B.*, 87.]

* 141 *bis.*—Hydrocissa convexa, *Tem.*
[Malacca;—*Penang, Cantor; Singapore, Wall. Salvad. U. di B.*, 81.]

* 143 *bis.*—Hydrocissa malayana, *Raff.*
[Malacca;—*Wellesley Prov. Cantor, Horsf. and Moore, Mus. E. I. C.*, 592.]

* 143 *bis A.*—Hydrocissa nigrirostris, *Bly.*
[Malacca, Kurroo.]

I know that Elliot, following Wallace, considers this and the preceding to be identical; but while not dogmatizing I may say that our investigations, thus far, almost seem to point to a different conclusion.

? 143 *bis B.*—Hydrocissa migratorius, *Maingay.*
[*Malacca, Gray, B. M. H. List*, 128.]

I cannot find that this species has ever been described, nor have I the least idea what it is intended for.

145 *ter.*—*Berenicornis comatus, Raffl.*

[*Malacca, Cantor, Horsf. and Moore, Mus. E. I. C.*, 595.]

*145 *quat.*—*Anorrhinus galeritus, Tem.*

[Malacca.]

*145 *quat A.*—Craniorrhinus corrugatus, *Tem.*

[Malacca.]

*146 *bis.*—*Rhyticeros undulatus, Shaw.*

[Malacca;—*Penang, Cantor, Salvad. U. di B.*, 85; *Horsf. and Moore, Mus. E. I. C.*, 593.]

*146 *quint.*—*Rhinoplax vigil, Forst.*

[Malacca;—*Quedah, Cantor, Horsf. and Moore, Mus. E. I. C*, 582.]

? 148.—*Palæornis torquatus, Bodd.*

[*Penang, Cantor, Horsf. and Moore, Mus. E. I. C.* 612.]

This, I feel sure, is another of Cantor's cage birds. I feel very confident that this species does not occur wild on the Peninsula.

? 151 *ter.*—*Palæornis caniceps, Bly.*

[*Penang, Cantor.*]

The same may be said of this species. The bird is a Nicobar species *pur et simple*, though continually brought over in cages to the Peninsula, by Malay, Burmese and Chinese Junks that trade between its ports and the Nicobars.

? 152.—*Palæornis fasciatus, P. L. S. Müll.*

[*Malacca, Salvad. U. di B.*, 25.]

This species *may* occur in a wild state in the northern part of the Peninsula, but I doubt it.

*152 *ter A*—Palæornis longicauda, *Bodd.*

[Malacca;—*Penang, Mus. Brit. Salvad. U. di B.*, 23; *Cantor, Horsf. and Moore, Mus. E. I. C.*, 619.]

*153 *A.*—Loriculus galgulus, *Lin.*

[Malacca, Johore,—Singapore;—*Wellesley Prov. Stol.*]

*153 *ter.*—*Psittinus incertus, Shaw.*

[Malacca, Pulo Seban, Kurroo, Nealys, Chohong, Singapore;—*Penang, Cantor, Horsf. and Moore, Mus. E. I. C.*, 609.]

*163 *bis.*—*Yungipicus canicapillus, Bly.*

[Johore, Singapore;—*Malacca, Bly. Salvad. U. di B.*, 42.]

*164 *A.*—Reinwardtipicus validus, *Reinw. in Tem.*
[Malacca, Pulo Seban, Kurroo;—*Wellesley Prov. Stol.*]

*165 *bis A.*—*Hemicercus sordidus, Eyt.*
[Malacca, Pulo Seban, Kurroo, Nealys, Johore, Singapore.]

*165 *ter.*—*Meiglyptes tristis, Horsf.*
[Malacca, Pulo Seban, Nealys, Chohong, Johore;—*Singapore, Bly. Salvad. U. di B.*, 56; *Penang and Wellesley, Prov., Stol.*]

*165 *quint.*—*Meiglyptes tukki, Less.*
[Malacca, Pulo Seban, Kurroo, Nealys, Johore, Singapore.]

? 166.—*Chrysocolaptes sultaneus, Hodgs.*
[*Penang, Cantor; Horsf. and Moore, Mus. E. I. C.*, 653.]

Is this not rather *C. strictus*, Horsf. Malh. Pic. pl. LXV, f. 1-5? I must say I altogether doubt the true *sultaneus* occurring here.

*168.—*Muelleripicus pulverulentus, Tem.*
[Malacca, Johore;—*Penang, Cantor; Horsf. and Moore, Mus. E. I. C.*, 651. *Singapore, Bly. Cat. Mus. A. S. B.*, 54]

*169 *quat.*—*Thriponax javensis, Horsf.*
[Malacca, Pulo Seban, Kurroo, Johore;—*Wellesley, Prov. Stol.; Penang, Bly. Cat. Mus., A. S. B.*, 55.]

171 *bis.*—*Gecinus vittatus, Vieill.*
[*Malacca, Sund. Salvad. U. di B.*, 55.]

* 175 *bis.*—*Callolophus mentalis, Tem.*
[Malacca, Pulo Seban, Nealys, Chohong, Johore;—*Singapore, Doria; Salvad. U. di B.*, 50; *Wellesley Prov. Stol.*]

* 175 *ter.*—*Callolophus puniceus, Horsf.*
[Malacca, Pulo Seban, Kurroo, Nealys, Johore;—*Penang, Bly. Cat. Mus. A. S. B.*, 59.]

* 175 *quat.*—*Callolophus malaccensis, Lath.*
[Malacca, Kurroo, Nealys, Johore.]

* 176 *bis.*—*Blythipicus porphyromelas, Boie.*
[Malacca, Kurroo, Johore;—*Wellesley Prov. Stol.*]

* 178 *bis.*—*Micropternus brachyurus, Vieill.*
[Penang, Malacca, Pulo Seban, Singapore;—*Wellesley, Prov. Stol.*]

184.—*Tiga javanensis, Ljungh.*

[*Malacca, Horsf. and Moore. Salvad. U. di B.*, 54; *Wellesley Prov. Stol.*; *Penang, Cantor, Horsf. and Moore, Mus. E. I. C.*, 658.]

* 185 *bis.*—*Gauropicoides rafflesi, Vig.*

[Malacca, Kurroo;—*Singapore, Sund. Salvad. U. di B.*, 55; *Penang, Wellesley Prov. Stol.*]

* 187 *bis.*—Sasia abnormis, *Tem.*

[Malacca.]

* 190 *bis.*—*Calorhamphus hayi, J. E. Gr.*

[Malacca, Pulo Seban, Nealys, Johore, Singapore.]

* 196 *bis A.*—Megalæma henrici, *Boie.*

[Malacca, Johore, Singapore.]

* 196 *quat.*—*Megalæma mystacophanus, Tem.*

[Malacca;—*Penang, Wellesley Prov. Stol.*]

* 196 *quat A.*—Megalæma versicolor, *Raffl.*

[Malacca, Johore, Singapore;—*Penang, Cantor, Salvad. U. di B.*, 33]

* 196 *quat B.*—Megalæma chrysopogon, *Tem.*

[Malacca;—*Wellesley Prov. Stol.*]

197.—*Xantholæma hæmacephala, P. L. S. Müll.*

[*Penang, Wellesley Prov. and Malacca, Stol.*; *Quedah, Cantor, Horsf. and Moore, Mus. E. I. C.*, 645.]

* 198 *ter A.*—Megalæma duvauceli, *Less.*

[Malacca, Singapore;—*Wellesley Prov. Stol.*]

* 200.—*Cuculus striatus, Drap.*

[Malacca.]

*202 *A.*—Cuculus pravatus, *Horsf.* S. F. VI., 156.

[Malacca, Kurroo, Johore.]

*203.—*Cuculus micropterus, Gould.*

[Malacca.]

*205 A.—Hierococcyx fugax, *Horsf.*

[Malacca, Kurroo.]

*206.—*Hierococcyx nisicolor, Hodgs.*

[Malacca.]

207.—*Hierococcyx sparveroides, Vig.*

[*Malacca, Bly. Cat. Mus. A. S. B.*, 70.]

208 *A.*—Cacomantis merulinus, *Scop.*

[*Penang; Cantor, Horsf. and Moore, Mus. E. I. C.*, 697; *Malacca and Singapore, Bly. Cat. Mus. A. S. B.*, 72.]

*209.—*Cacomantis threnodes, Cab.*

[Malacca, Nealys, Singapore;—*Penang, Cantor, Horsf. and Moore, Mus. E. I. C.*, 698.]

*210.—*Surniculus lugubris, Horsf.*

[Malacca.]

*211 *bis.*—*Chrysococcyx xanthorhynchus, Horsf.*

[Malacca.]

*211 *ter.*—*Chrysococcyx malayanus, Raffl.*

[Pulo Seban;—*Malacca, Raffl., Cantor, Salvad. U. di B.*, 62; *Singapore, Bly. Cat. Mus. A. S. B.*, 73.]

*213.—*Coccystes coromandus, Lin.*

[Malacca;—*Singapore, Bly. Salvad. U. di B.* 68; *Penang, Cantor, Horsf. and Moore, Mus. E. I. C.*, 693.]

*214 *bis.*—*Eudynamis malayana, Cab. and Heine.*

[Malacca;—*Penang, Cantor, Salvad. U. di B.*, 68; *Wellesley Prov. Stol.*]

? 215.—*Rhopodytes tristis, Less.*

[*Penang, Bly. Cat. Mus. A. S. B.*, 76.]

May occur. Seems to me doubtful.

*215 *bis.*—*Rhopodytes diardi, Less.*

[Malacca, Pulo Seban, Kurroo, Nealys, Chohong;—*Wellesley Prov. Stol.*]

*215 *ter.*—*Rhopodytes sumatranus, Raffl.*

[Malacca, Pulo Seban, Kurroo, Nealys, Chohong, Johore;—*Singapore, Doria, Salvad. U. di B.*, 73.]

*216 *ter.*—*Rhamphococcyx erythrognathus, Hartl.*

[Malacca, Pulo Seban, Kurroo, Nealys, Johore;—*Wellesley Prov. Stol.*]

*216 *quat.*—*Rhinortha chlorophaea, Raffl.*

[Malacca, Pulo Seban, Kurroo, Nealys, Chohong, Johore;—*Penang, Cantor, Salvad. U. de B.*, 69; *Wellesley, Prov., Stol.*]

*216 *quint.*—*Zanclostomus javanicus, Horsf.*

[Malacca, Pulo Seban.]

*217 *A.*—Centrococcyx rectunguis, *Strickl.*
[Malacca.]

*217 *quint A.*—Centrococcyx eurycercus, *Hay.* S. F., VI., 170.
[Malacca, Pulo Seban, Kurroo.]

*218.—*Centrococcyx bengalensis, Gm.*
[Malacca, Kurroo, Johore, Singapore;—*Penang, Cantor, Salvad. U. di B.*, 77.]

? 219.—*Taccocua leschenaulti, Less.*
[*Malacca, Gray, B. M. H.-List*, 207.]

I utterly disbelieve the occurrence of this species in the Malay Peninsula.

*224.—*Arachnothera longirostra, Lath.*
[Malacca, Nealys, Singapore.]

*224 *A.*—Arachnothera crassirostris, *Reich.*
[Kurroo.]

*224 *B.*—Arachnothera flavigastra, *Eyt.*
[Malacca, Pulo Seban, Kurroo, Chohong, Johore.]

*224 *C.*—Arachnothera robusta, *Müll. and Schl.*
[Malacca.]

*224 *D.*—Arachnothera simillima, *Hume.* S. F., V., 487; VII. 170.
[Malacca.]

*224 *bis.—Arachnothera modesta, Eyt.*
[Malacca, Kurroo, Nealys, Chohong, Johore;—*Penang and Wellesley Prov. Stol.*]

*224 *ter.—Arachnothera chrysogenys, Tem.*
[Malacca, Pulo Seban, Kurroo, Singapore.]

*225 *ter A.*—Æthopyga siparaja, *Raffl.*
[Penang; Wellesley Province, Singapore;—*Malacca, Cab. Salvad. U. di B.*, 174.]

*231 *ter.—Chalcostetha insignis, Jard.*
[Copah, Malacca, Singapore;—*Penang, Gould. Salvad, U. di B.*, 178.]

*233 *bis.—Cinnyris braziliana, Gm.*
[Malacca;—*Penang, Moore, Salvad. U. di B.*, 177; *Wellesley Prov. Stol.*]

*233 *ter.*—*Anthreptes malaccensis, Scop.*
[Tonkah, Copah, Penang, Malacca, Pulo Seban, Kurroo, Nealys, Chohong, Johore, Singapore;—*Wellesley Prov., Stol.*]

*233 *ter A.*—Anthreptes rhodolæma, *Shell.*
[Malacca, Singapore.]

233 *quat.*—*Anthreptes simplex, S. Müll.*
[*Singapore, Malacca; Bly., Salvad. U. di. B.*, 173.]

*233 *quint.*—*Anthreptes hypogrammica, Müll.*
[Malacca, Kurroo, Singapore;—*Penang, Moore, Salvad. U. di B.*, 172.]

*233 *sex.*—*Chalcoparia singalensis, Gm.*
[Malacca, Pulo Seban, Johore.]

*234 *bis.*—*Cinnyris pectoralis, Horsf.*
[Penang, Singapore.]

234 *ter.*—*Cinnyris flammaxillaris, Bly.*
[*Wellesley Prov. Stol; Penang, Cantor, Horsf. and Moore, Mus. E. I. C.*, 739.]

*236.—*Dicæum cruentatum, Tem.*
[Copah, Malacca, Kurroo, Singapore;—*Wellesley Prov. Stol; Penang, Cantor, Horsf. and Moore, Mus. E. I. C.*, 748.]

*236 *bis.*—*Dicæum trigonostigma, Scop.*
[Penang, Malacca, Nealys, Johore, Singapore;—*Wellesley Prov. Stol.*]

*237.—*Dicæum chrysorrhæum, Tem.*
[Malacca, Pulo Seban;—*Wellesley Prov. Stol.*]

*237 *ter.*—*Dicæum olivaceum, Wald.*
[Kurroo.]

*240 *quat.*—*Prionochilus percussus, Tem.*
[Malacca, Kurroo, Johore.]

*240 *quint.*—*Prionochilus maculatus, Tem.*
[Malacca, Nealys;—*Penang, Cantor, Salvad. U. di B.*, 164.]

*240 *sex.*—*Prionochilus modestus, Hume.*
[Copah.]

*240 *sept.*—Prionochilus thoracicus, *Tem.*
[Malacca, Johore.]

*253.—*Dendrophila frontalis, Horsf.*
[Malacca.]

*257 *A*.—Lanius bentet, *Horsf.*

[Singapore.]

*260 *quat.*—*Lanius magnirostris, Less.*

[Malacca, Pulo Seban, Kurroo, Nealys, Chohong, Johore, Singapore;—*Wellesley Prov., Stol.*;—*Penang, Cantor, Horsf. and Moore, Mus. E. I. C.*, 419.]

*261.—*Lanius cristatus, Lin.*

[Malacca;—*Penang, Cantor, Horsf. and Moore, Mus. E. I. C.*, 419.]

? *261 *A*.—*Lanius superciliosus, Lath.*

[Malacca, Pulo Seban, Chohong, Singapore;—*Penang, Cantor, Horsf. and Moore, Mus. E. I. C.*, 394.]

I believe this to be only the adult of *L. cristatus*; (*v.* S. F., VII., 270.)

*261 *bis.*—*Lanius lucionensis, Lin.*

[Pulo Seban, Kurroo, Nealys, Singapore;—*Wellesley Prov. Stol.*]

*263 *A*.—Tephrodornis gularis, *Raffl.*

[Malacca, Johore;—*Singapore, Bly., Salvad. U. di B.*, 157;—*Penang and Wellesley Prov., Stol.*]

*266.—*Muscitrea grisola, Bly.*

[Singapore;—*Penang, Bly. Salvad, U. di B.*, 158.]

*267 *bis.*—Hemipus obscurus, *Horsf.*

[Malacca, Kurroo, Nealys, Johore.]

*267 *bis A.*—Xanthopygia tricolor, *Hartl.*

[Malacca;—*Penang, Cantor, Horsf. and Moore, Salvad. U. di B.*, 422.]

*268 *ter.*—Volvocivora culminata, *Hay.*

[Malacca, Johore, Singapore;—*Malacca, Stol.*]

*269 *ter.*—*Lalage terat, Bodd.*

[Malacca, Nealys, Singapore;—*Penang, Barbe, Salvad. U. di B.*, 146.]

270 *quat. A.*—Graucalus sumatrensis, *S. Müll.*

[*Malacca, Wald. Salvad. U. di B.*, 150].

*273 *bis.*—*Pericrocotus igneus, Bly.*

[Malacca, Johore.]

273 *quat.*—*Pericrocotus flammifer, Hume.*

[*Wellesley Prov., Stol.*]

*273 *quat. A.*—Pericrocotus ardens, *Boie.*
[Johore;—*Malacca, Wald.*]

*273 *quat. B.*—Pericrocotus ?
[Malacca.]
Apparently a quite distinct species.

*277 *ter A.*—Pericrocotus cinereus, *Lafr.*
[Malacca, Pulo Sebau, Kurroo, Singapore.]
This is quite distinct from the Tenasserim form *P. immodestus, nobis.*

*279.—*Dicrurus annectans, Hodgs.*
[Malacca, Pulo Seban, Kurroo, Nealys, Johore, Singapore.]

280 *ter.*—*Buchanga leucophæa, Vieill.*
[*Malacca, Stol.*]

*280 *quat.*—*Buchanga leucogenys, Wald.*
[Malacca.]

*282 *bis.*—*Chaptia malayensis, Hay.*
[Malacca, Kurroo, Nealys, Johore.]

*285 *A.*—Dissemurus platurus, *Vieill.*
[Malacca, Nealys, Chobong, Johore, Singapore;—*Penang and Wellesley Prov., Stol.*]

*289.—*Muscipeta affinis, Hay.*
[Malacca, Pulo Seban, Nealys;—*Penang, Wald, Salvad. U. di B.*, 137.]

*289 *A.*—Muscipeta incii, *Gould.*
[Malacca, Singapore.]

*289 *B.*—Muscipeta princeps, *Tem.*
[Malacca, Kurroo.]

*289 *bis.*—*Philentoma pyrrhopterum, Tem.*
[Malacca, Kurroo, Chobong, Singapore.]

*289 ter.—*Philentoma velatum, Tem.*
[Malacca, Chobong, Johore;—*Singapore, Gould; Salvad. U. di B.*, 139;—*Wellesley Prov., Stol.*]

*290.—*Hypothymis azurea, Bodd.*
[Malacca, Kurroo, Johore;—*Wellesley Prov., Stol.*]

*291 *A.*—Leucocerca perlata, *Müll.*
[Malacca, Johore]

*293 *bis.*—*Leucocerca javanica, Sparrm.*
[Penang, Malacca, Nealys, Singapore.]

*295.—*Culicicapa ceylonensis, Sws.*
[Kurroo, Johore;—*Malacca, Cantor, Salvad. U. di B.*, 135.]

*297.—*Alseonax latirostris, Raffl.*
[Tonka, Malacca, Pulo Seban, Nealys, Singapore;—*Penang, Cantor, Salvad. U. di B.*, 130.]

*299.—*Alseonax ferrugineus, Hodgs.*
[Kurroo.]

*301 *A.*—Stoporala thalassoides, *Cab.*
[Johore.]

*303 *A.*—Cyornis cyanopolia, *Boie.* S. F., V., 489*n*; VII, 516.
[Malacca.]

*304 *A.*—Cyornis elegans, *Tem.* S. F., VI., 228.
[Malacca.]

*307 *ter A.*—Cyornis albo-olivacea, *Hume.* S. F., V., 488.
[Malacca.]

324 *A.*—Erythrosterna erythaca, *Bly.*
[*Malacca, Blyth, J. A. S. B., XVI*, 126; *Salvad. U. di B.*, 127.]

*336 *A.*—Brachypteryx malaccensis, *Hartl.*
[Malacca, Johore.]

*344 *quat.*—*Pitta cærulea, Raffl.*
[Malacca.]

*345 *bis.*—*Pitta moluccensis, P. L. S. Müll.*
[Tampin, Malacca;—*Penang, Cantor, Horsf. and Moore, Mus. E. I. C.*, 419.]

*345 *quat.*—*Pitta coccinea, Eyt.*
[Malacca, Johore, Singapore;—*Wellesley Prov., Stol.*]

*346.—*Pitta cucullata, Hartl.*
[Malacca.]

*346 *bis A.*—Pitta boschii, *Müll.*
[Malacca.]

?355 *ter.*—Geocichla innotata, *Bly.*

[*Malacca, Cantor; Horsf. and Moore, Mus. E. I. C.*, 400.]

I do not believe at present in this species, *vide* S. F., VI., 250.

*356 *A.*—Geocichla avensis, *J. E. Gr.* S. F., VIII, 39.

[Rumbow.]

*369 *bis.*—*Turdus obscurus, Gm.*

[Malacca, Singapore;—*Wellesley Prov., Stol.*]

*387.—*Trichastoma abbotti, Bly.*

[Malacca, Nealys.]

387 *A.*—Trichastoma rostratum, *Bly.*

[*Malacca, Cantor; Horsf. and Moore, Mus. E. I. C.*, 405.]

387 *B.*—Trichastoma olivaceum, *Strick.* A. & M. of N. H., 1847, 132.

[*Malacca, Bly. Cat. Mus. A. S. B.*, 147.]

*390 *A.*—Alcippe cinerea, *Bly.*

[Nealys;—*Penang and Malacca, Cantor, Horsf. and Moore, Mus. E. I. C.*, 406.]

*390 *ter A.*—Turdinus macrodactylus, *Strickl.*

[Malacca, Johore;—*Wellesley Prov., Stol.*]

*395 *A.*—Macronus ptilosus, *Jard. and Selb.*

[Malacca, Pulo Seban, Johore;—*Singapore, Horsf. and Moore, Salvad. U. di B.*, 216.]

*395 *bis.*—*Mixornis gularis, Raffl.*

[Malacca, Kurroo, Chohong, Johore, Singapore.]

*396 *A.*—Timalia nigricollis, *Tem.*

[Penang, Malacca, Kurroo;—*Singapore, Bly. Salvad. U. di B.*, 212;—*Wellesley Prov, Stol.*]

*396 *B.*—Timalia maculata, *Tem.*

[Malacca, Johore.]

*396 *C.*—Timalia poliocephala, *Tem.*

[Malacca, Johore.]

*396 *bis.*—*Cyanoderma erythropterum, Bly.*

[Malacca, Pulo Seban, Kurroo, Johore.]

396 *bis A.*—Cyanoderma bicolor, *Bly.* S. F., III., 322*n.* VI, 269.

[*Malacca, Gray, B. M. H.-List*, 315.]

*396 *bis B.*—Kenopia striata, *Bly.*
[Malacca.]

*396 *bis C.*—Trichixos pyrrhopygus, *Less.*
[Malacca;—*Wellesley Prov.*,]

*396 *ter.*—*Malacopterum magnum, Eyt.*
[Malacca;—*Penang, Bly. Salvad. U. di B.*, 225.]

*396 *ter. A.*—Malacopterum cinereum, *Eyt.* S. F., VI, 271, 272.
[Malacca, Pulo Seban, Kurroo, Nealys, Johore.]

*396 *ter B.*—Malacopterum magnirostris, *Moore.*
[Malacca, Kurroo, Johore.]

*396 *ter C.*—Malacopterum affinis, *Bly.*
[Pulo Seban, Kurroo, Johore;—*Malacca, Bly. Salvad. U. di B.*, 231.]

396 *ter D.*—Setaria albogularis, *Bly.*
[*Malacca, Bly. J. A. S. B., XIII.*, 385, *XVI.*, 462;—*Salvad. U. di B.*, 232.]

396 *ter E.*—Alcippe cantori, *Moore.*
[*Penang, Cantor, Horsf. and Moore, Mus. E. I. C.*, 406].

*396 *quat.*—*Malacopterum ferruginosum, Bly.*
[Malacca.]

*396 *sept.*—*Drymocataphus nigricapitatus, Eyt.*
[Malacca.]

*399 *sex.*—*Pellorneum subochraceum, Swinh.*
[Tonka.]

*402 *A.*—Pomatorhinus borneensis, *Cab.*
[Malacca.]

*447 *ter.*—*Hypsipetes malaccensis, Bly.*
[Malacca, Johore, Nealys.]

*449 *bis.*—*Trachycomus ochrocephalus, Gm.*
[Kopah, Malacca, Pulo Seban, Kurroo;—*Penang, Gray, Salvad. U. di B.*, 197.]

*450 *A.*—Criniger theoides, *Hume.* S. F., IV., 214.
[Johore.]

*451 *ter.*—*Criniger gutturalis, Müll.*
[Malacca, Kurroo, Nealys.]

*451 *quat.*—*Criniger phæocephalus, Hartl.*

[Malacca, Johore;—*Singapore, DeStorr.; Penang, Barbe; Salvad. U. di B.* 208;—*Wellesley Prov., Stol.*]

*451 *quint.*—*Criniger tristis, Bly.*

[Pulo Seban, Malacca, Johore.]

?451 *quint. A.*—Euptilosus euptilosus, *Jard. and Selb.*—*(Ill. Orn. New Ser., pl.* 3,—*Gray, B. M. H.—List,* 271.*)*

This may be a good species, or it may be a synonym of some other. I can make nothing of it.

*451 *sex.*—*Tricholestes criniger, Hay.*

[Malewoon, (Malay Penin.), Malacca.]

*452 *ter.*—*Ixus finlaysoni, Strickl.*

[Tonka, Malacca, Kurroo, Nealys, Chohong.]

*452 *sex.*—*Otocompsa analis, Horsf.*

[Malacca, Pulo Seban, Nealys, Chohong, Johore, Singapore;—*Penang, Cantor, Salvad. U. di B.*, 197.]

*452 *sept.*—*Ixus plumosus, Bly.*

[Malacca, Kurroo, Chohong, Johore.]

*452 *oct.*—*Ixus brunneus, Bly.*

[Malacca, Pulo Seban, Nealys, Johore, Singapore.]

*452 *oct. A.*—*Ixus finschii, Salv.*

[Malacca, Pulo Seban, Kurroo, Chohong, Johore.]

*452 *nov.*—*Ixus pusillus, Salvad.*

[Kurroo, Johore.]

452 *nov. A.*—Microtarsus olivaceus, *Moore.*

[*Malacca; Horsf. and Moore, Mus. E. I. C.*, 249.]

This is not improbably identical with *I. pusillus,* Salvad., in which case Moore's name would stand.

*452 *dec. A.*—Ixus olivaceus, *Bly.* S. F., VI., 314.

[Malacca, Johore.]

*452 *dec. B.*—Iole terricolor, *Hume.* S. F., VII., 141, 451.

[Malacca.]

452 *dec. C.*—Iole cinerea, *Hay.* (*Bly.*) J. A. S. B., XIV. 573.)

[*Malacca; Hay. Bly. Cat. Mus. A. S. B.*, 339.]

This may possibly prove to be the same as *I. terricolor*, Hume, in which case Hay's name would stand.

*453 *A.*—Microtarsus melanoleucus, *Eyt.*
[Malacca;—*Penang and Wellesley Prov., Stol.*]

*457 *bis.*—*Brachypodius melanocephalus, Gm.*
[Kopah, Penang, Malacca, Pulo Seban, Nealys;—*Wellesley Prov., Stol.*]

*457 *quint.*—*Ixidia cyanventris, Bly.*
[Malacca, Johore, Singapore;—*Penang and Wellesley Prov., Stol.*]

*457 *quint. A.*—Ixidia webberi, *Hume.* S. F., VIII, 40.
[Tonka.]

*460.—*Otocompsa emeria, Lin.*
[Penang].

*463 *ter.*—*Phyllornis javensis, Horsf.*
[Malacca, Pulo Seban, Nealys, Johore, Singapore;—*Wellesley Prov., Stol.*]

*463 *ter A.*—Phyllornis icterocephala, *Less.*
[Malacca, Pulo Seban, Kurroo, Nealys, Johore, Singapore;—*Penang and Wellesley Prov., Stol.*]

*463 *quat.*—*Phyllornis cyanopogon, Tem.*
[Malacca, Pulo Seban, Chohong, Johore;—*Penang, Cantor, Salvad. U. di B.*, 194; *Horsf. and Moore, Mus. E. I. C.*, 411;—*Wellesley Prov., Stol.*]

*468.—*Iora tiphia, Lin.*
[Penang, Malacca, Pulo Seban, Nealys, Singapore.]

*468 *ter.*—*Iora viridissima, Tem.*
[Malacca, Nealys, Johore;—*Penang and Wellesley Prov., Stol.*]

*468 *quat.*—*Iora lafresnayi, Hartl.*
[Malacca—*Wellesley Prov., Stol.*]
It still remains to me an open question whether *I. innotata*, Blyth, is really identical with this species. See further S. F., V., 423.

*469 *A.*—Irena cyanea, *Begbie.*
[Malacca, Johore, Singapore;—*Wellesley Prov., Stol.*]

*471.—*Oriolus indicus, Jerd.*
[Malacca, Kurroo;—*Penang, Cantor, Horsf. and Moore, Mus. E. I. C.*, 422.]

*473 *bis.*—*Oriolus xanthonotus, Horsf.*

[Malacca, Pulo Seban, Kurroo, Nealys, Johore, Singapore;—*Wellesley Prov., Stol.*;—*Penang, Cantor, Horsf. and Moore, Mus. E. I. C.*, 422.]

*475 *bis.*—*Copsychus musicus, Raffl.*

[Kopah, Malacca, Penang, Kurroo, Nealys, Johore, Singapore;—*Wellesley Prov., Stol.*]

*476.—*Cercotrichas macrura, Gm.*

[Malacca, Johore, Singapore;—*Wellesley Prov., Stol.*;—*Penang, Cantor, Horsf and Moore, Mus. E I. C.*, 422.]

500.—*Ruticilla aurorea, Pall.*

[*Malacca, Bly. Cat. Mus. A. S. B.*, 168.]

*507 *bis.*—*Larvivora cyane, Pall.*

[Malacca.]

*515 *bis.*—*Acrocephalus orientalis, Tem. and Schl.*

[Singapore].

518.—*Aurundinax ædon, Pall.*

[*Malacca, Gr. B. M. H. List*, 208].

* 530 *bis.*—*Orthotomus atrigularis, Tem.*

[Malacca, Kurroo, Nealys, Johore, Singapore.]

* 530 *bis A.*—Orthotomus maculicollis, *Moore.* P. Z. S., 1854, 309. Sharpe, "Ibis," 1877, 116. S. F. VII, 452.

[Singapore.]

* 530 *ter.*—*Orthotomus ruficeps, Less.*

[Malacca, Kurroo, Singapore.]

* 530 *ter A.*—Orthotomus cineraceus, *Bly.*

[Singapore;—*Malacca, Bly. J. A. S. B., XIV*, 589;—*Salvad U. di B.*, 248.]

* 532.—*Prinia flaviventris, Deless.*

[Singapore.]

* 539.—*Cisticola cursitans, Frankl.*

[Singapore and Wellesley Prov.]

* 556.—*Phylloscopus magnirostris, Bly.*

[Kurroo.]

* 556 *bis.*—*Phylloscopus borealis, Blas.*

[Kopah, Penang.]

* 563 *bis.*—*Reguloides coronatus, Tem. and Schl.*
[Malacca.]

*564.—*Reguloides trochiloides, Sund.*
[Nealys.]

? 584 *ter.*—*Henicurus leschenaulti, Vieill.*
[*Wellesley Prov., Stol., J. A. S. B., XXXIX.*, 304.]
I do not believe that this gets down so far south.

*584 *quat.*—*Henicurus frontalis, Bly.*
[Malacca.]

*588 *bis.*—*Henicurus ruficapillus, Tem.*
[Malacca;—*Wellesley Prov., Stol.*]

592.—*Calobates melanope, Pall.*
[*Penang, Cantor, Horsf. and Moore, Mus. E. I. C.*, 350.]

593.—*Budytes cinereocapilla, Savi.*
[*Malacca, Bly., Salvad. U. di B.*, 261.]

593 *bis.*—*Budytes melanocephala, Licht.*
[*Malacca Cantor; Salvad. U. di B.*, 260;—*Horsf. and Moore, Mus. E.I.C.*, 351.]

*593 *ter.*—*Budytes flava, Lin.*
[Singapore.]

*595.—*Limonidromus indicus, Gm.*
[Penang, Malacca, Pulo Seban.]

*595 *bis.*—Eupetes macrocercus, *Tem.*
[Malacca;—*Wellesley Prov., Stol.*]

*600 *bis.*—*Corydalla malayensis, Eyt.*
[Kopah, Malacca, Nealys, Singapore.]

*631 *A.*—*Zosterops lateralis, Tem.*
[Penang, Malacca.]

*650.—*Melanochlora sultanea, Hodgs.*
[Malacca; Kurroo, Nealys, Johore;—*Wellesley Prov., Stol.*]

660.—*Corvus macrorhynchus, Wagl.*
[? *Malacca. Jerd. Salvad. U. di B.*, 282;—*Penang, Cantor, Horsf. and Moore, Mus. E. I. C.*, 354.]

*662.—Corvus enca, *Horsf.*
[Malacca, Johore.]

*668 *ter.*—*Platylophus ardesiacus, Cab.*

[Malacca, Nealys, Johore;—*Penang and Wellesley Prov., Stol.*]

? 678 *quat.*—*Crypsirhina variant, Lath.*

[*? Malacca, Salvad. U. di B.*, 280.]

I doubt this getting down so far south.

*678 *quint.*—*Platysmurus leucopterus, Tem.*

[Malacca, Pulo Seban, Kurroo, Johore.]

? 686.—*Acridotheres fuscus, Wagl.*

[*Penang and Malacca, Cantor, Horsf. and Moore, Mus. E. I. C.*, 538.]

I must believe that this was another of Cantor's cage birds. It often comes over in cages in vessels trading to the Madras coast.

689 *sex.*—*Sturnia sturnina, Pall.*

[*Malacca, Eyton, Cantor, Salvad. U. di B.*, 271.]

*690 *bis.*—*Calornis chalybæus, Horsf.*

[Kopah, Malacca, Pulo Seban, Singapore;—*Penang and Wellesley Prov. Stol.*]

*693.—*Eulabes javanensis, Osb.*

[Malacca, Kurroo, Nealys, Johore, Singapore;—*Wellesley Prov., Stol.*]

*694 *bis.*—*Ploceus baya, Bly.*

[Wellesley Prov., Malacca.]

*697 *A.*—Amadina maja, *Lin.*—S. F. I, 460.

[Wellesley Prov., Singapore;—*Malacca, Bly.; Penang, Cantor; Salvad. U. di B.*, 264.]

*698 *A.*—Amadina atricapilla, *Vieill.*

[Wellesley Prov.;—*Malacca, Stol.; Singapore, Doria; Salvad. U. di B.*, 265; *Penang, Cantor, Horsf. and Moore, Mus. E. I. C.*, 508.]

Differs from *rubronigra*, in wanting the *black* ventral patch.

*699 *A.*—Amadina nisoria, *Tem.*

Pulo Seban, Kurroo, Nealys, Singapore;—*Penang, Cantor, Horsf. and Moore, Mus. E. I. C.*, 506.]

*701 *bis.*—*Amadina leucogastra, Bly.*

[*Malacca, Bly. Salvad. U. di B.*, 267.]

*702.—*Amadina acuticauda, Hodgs.*

[Kurroo, Johore, Singapore;—*Wellesley Prov., Stol.; Malacca and Penang, Cantor, Horsf. and Moore, Mus. E. I. C.*, 511.]

*703 *bis.*—Amadina oryzivora, *Lin.*

[Singapore;—? *Malacca, Cantor, Salvad. U. di B.*, 263.]

As already noticed (S. F., VI, 403) I believe this occurs, wild, nowhere in the Peninsula except on the island of Singapore, and there it has, I think, been introduced.

703 *ter.*—*Erythrura prasina, Sparrm.*

[? *Malacca, Salvad. U. di B.*, 269.]

*710.—*Passer montanus, Lin.*

[Singapore, Tonka (Junk Seylon.)]

*723.—*Euspiza aureola, Pall.*

[Johore.]

*771.—*Treron nipalensis, Hodgs.*

[Malacca, Johore, Singapore.]

*771 *A.*—Treron capellei, *Tem.*

[Malacca, Johore.]

*774 *A.*—Osmotreron olax, *Tem.*

[Malacca, Pulo Seban, Nealys, Chohong, Johore, Singapore;—*Penang and Wellesley Prov., Stol.*]

*774 *bis.*—*Osmotreron vernans, Lin.*

[Malacca, Singapore;—*Penang, Wall. Salvad. U. di B.*, 286;—*Wellesley Prov., Stol.*]

776 *bis.*—*Osmotreron fulvicollis, Wagl.*

[*Malacca, Tem. Salvad. U. di B.*, 288.]

778 *A.*—Sphenocercus oxyurus, *Reinw. in Tem*—(P. C., 240.)

[*Malacca, Bp.; Wall., "Ibis,"* 1865, 373.]

778 *B.*—Sphenocercus korthalsi, *Bp.*—(Consp. II, 9.)

[*Malacca, Bp., Wall., "Ibis,"* 1865, 374.]

*779 *A.*—Ptilonopus jambu, *Gm.*

[Malacca, Pulo Seban, Singapore;—*Wellesley Prov., Stol.*]

780.—*Carpophaga ænea, Lin.*

[*Malacca, Wall Salvad. U. di B.*, 290.]

*781 *ter A.*—*Carpophaga badia, Raffl.*

[Malacca.]

781 *quint.*—*Carpophaga bicolor, Scop.*

[*Malacca, Bly., Salvad. U. di B.*, 292;—*Wellesley Prov., Cantor, P. Z. S.*, 1859, 466.]

?781 *quint. A.*—Carpophaga grisea, *Bp.*—(Consp. II, 36.)
[*Malasia, Wall.* "*Ibis,*" 1865, 386.]

791 *ter.*—*Macropygia assimilis, Hume.*
[*Wellesley Prov., Stol., J. A. S. B., XXXIX,* 331.]

*795 *bis.*—*Turtur tigrinus, Tem.*
[Malacca, Singapore;—*Penang and Wellesley Prov., Stol.*]

797 *bis.*—*Turtur humilis, Tem.*
[*Malacca, Wall.* "*Ibis,*" 1865, 392.]

*797 *ter.*—*Geopelia striata, Lin.*
[Tonka, Penang, Singapore;—*Malacca, Bly., Salvad. U. di B.,* 299;—*Wellesley Prov., Stol.*]

*798.—*Chalcophaps indica, Lin.*
[Kurroo;—*Malacca, Bly. Salvad. U. di B.,* 300.]

?798 *bis.*—*Calænas nicobarica, Lin.*
[*Malayan Pen., Bly. Cat. Mus. A. S. B.,* 238.]

I very much doubt the occurrence of this species on the Peninsula. Junks trade between the Straits and the Nicobars, and specimens are continually brought over in cages to the Peninsula; and these die and the birds are skinned there; but the species does not, I believe, occur wild on the Peninsula.

803 *bis.*—*Pavo muticus, Lin.*
[*Penang, Bly. Cat. Mus. A. S. B.,* 240.]

*803 *ter.*—*Argus giganteus, Tem.*
[Malacca.]

*803 *quint.*—Polyplectron bicalcaratum, *Lin.*
[Malacca;—*Wellesley Prov., Stol.*;—? *Penang, Bly. Cat. Mus. A. S. B.,* 242.]

*811 *A.*—Alectrophasis erythropthalmus, *Raffl.*
[Malacca.]

*811 *quint.*—*Euplocamus vieilloti, G. R. Gr.*
[Malacca;—*Nr. Penang, Bly. Cat. Mus. A. S. B.,* 243.]

*812.—*Gallus ferrugineus, Gm.*
[Malacca;—*Wellesley Prov., Stol.*]

813 *A.*—Gallus varius, *Shaw.*
[*Johore, Wampoa;—Malayan Pen., Bly. Cat. Mus. A. S. B.,* 339.]

Mr. Wampoa showed Davison a magnificent live specimen of this species, given him by the Maharajah of Johore, who assured him that it had been captured in his own territories.

825 *quat.*—Arboricola charltoni, *Eyt.*
[*Penang, Bly., Cat. Mus. A. S. B.*, 253.]

*831.—*Excalfactoria chinensis, Lin.*
[Malacca, Nealys;—*Penang, Mus. Brit. Salvad. U. di B.*, 311.]

*831 *ter.*—*Rollulus roulroul, Scop.*
[Malacca, Johore;—*Wellesley Prov., Stol.*]

*831 *ter A.*—Melanoperdix niger, *Vig.*
[Malacca.]

831 *quat.*—*Calloperdix oculeus, Tem.*
[*Malacca, Bly., Salvad. U. di B.*, 310.]

*831 *quat. A.*—Rhizothera longirostris, *Tem.*
[Johore;—*Malacca, Maingay, Bly., Salvad. U. di B.*, 311;—*Cat. A. S. B.*, 252.]

*833.—*Turnix plumbipes, Tem.*
[Malacca, Kurroo, Singapore;—*Wellesley Prov., Stol*]

The Marquis of Tweedale held that the *Javan pugnax* was distinct.

I have had no opportunity of comparing this, *vide* S. F., VI., 451.

*842.—*Glareola orientalis, Leach.*
[Singapore.]

845.—*Charadrius fulvus, Gm.*
[*Malacca, Bly., Salvad. U. di B.*, 314;—*Eyton, P. Z. S.*, 1839, 107.]

*847.—*Ægialitis mongola, Pall.*
[Singapore.]

*849.—*Ægialitis dubia, Scop.*
[Tonka, Singapore.]

*855 *bis.*—*Lobivanellus atronuchalis, Bly.*
[Malacca, Nealys.]

*870.—*Gallinago sthenura, Kuhl.*
[Wellesley Prov., Malacca;—*Singapore, Peale, Salvad. U. di B.*, 335.]

*871.—*Gallinago gallinaria, Gm.*
[Malacca.]

*876.—*Terekia cinerea, Güld.*
[Kopah.]

*882.—*Tringa subarquata, Güld.*
[Singapore.]

884 *bis.*—*Tringa ruficollis, Pall.*
[*Malacca, Eyton, P. Z. S.*, 1839.]

*891.—*Rhyacophila glareola, Lin.*
[Malacca, Pulo Seban, Nealys.]

*893.—*Tringoides hypoleucus, Lin.*
[Kopah, Malacca, Chohong, Singapore.]

*897.—*Totanus calidris, Gm.*
[Singapore.]

902*A*.—Porphyrio calvus, *Vieill.* S. F., VII., 13, 16.
[*Malayan Pen., Bly. Cat. Mus. A. S. B*, 339;—*Malacca, Eyton, P. Z. S.*, 1839, 107.]

*903 *bis.*—*Podica personata, G. R. Gr.*
[Malacca.]

904.—*Gallicrex cinereus, Gm.*
[*Malayan Pen., Bly. Cat. Mus. A. S. B.*, 283.]

*907.—*Erythra phœnicura, Penn.*
[Malacca.]

*910 *ter.*—*Porzana cinerea, Vieill.*
[Singapore;—*Malacca, Eyton, Blyth, Salvad, U. di B.*, 339.]

*912 *bis.*—*Rallina fasciata, Raffl.*
[Malacca, Pulo Seban, Singapore.]

*912 *bis A*.—Rallina superciliaris, *Eyton.* (R. telmatophila, *Hume.* S. F., VII., 142, 451.)
[Malacca.]

*913.—*Hypotænidia striata, Lin.*
[Malacca, Nealys, Singapore.]

915.—*Leptoptilus argalus, Lath.*
[*Malacca, Jerd., Salvad. U. di B.*, 357.]

916.—*Leptoptilus javanicus, Horsf.*
[*Malacca, Jerd., Salvad. U. di B.*, 358.]

?920.—*Dissura episcopa, Bodd.*
[*Malay countries, Bly. Cat. Mus. A. S. B.*, 277.]

*927.—*Herodias garzetta, Lin.*
[Malacca.]

930 *A.*—Ardea leucoptera, *Bodd.*
[*Malacca, Gray, B. M. H. List, Vol. III.*, 30.]

*931.—*Butorides javanica, Horsf.*
[Malacca.]

*932.—*Ardetta flavicollis, Lath.*
[Singapore;—*Malayan Pen., Bly. Cat Mus. A. S. B.*, 282.]

*933.—*Ardetta cinnamomea, Gm.*
[Malacca.]

*934.—*Ardetta sinensis, Gm.*
[Malacca.]

*936 *bis.*—*Goisakius melanolophus, Raffl.*
[Malacca.]

938 *A.*—Tantalus lacteus, *Tem.*
[*Malacca, Bly., Cat. Mus. A. S. B.*, 275.]

951.—*Nettopus coromandelianus, Gm.*
[*Malayan Pen., Bly. Cat. Mus. A. S. B.*, 302.]

952.—*Dendrocygna javanica, Horsf.*
[*Malacca, Bly., Salvad. U. di B.*, 362.]

990.—*Sterna media, Horsf.*
[*Malacca, Bly., Salvad, U. di B.*, 377.]

991.—*Sterna sumatrana, Raffl.*
[*Malacca, Jerd. Salvad, U. di B.*, 375.]

992.—*Sterna anaetheta, Scop.*
[*Singapore, Bly. Salvad. U. di B.*, 374; *Cat. J. A. S.*, 293.]

993.—*Anous stolidus, Lin.*
[*Neighbourhood of Malacca ;—Voy. Novara, Salvad. U. di B.*, 379.]

*998.—*Sula australis, Steph.*
[Between Malacca and Penang.]

1004.—*Pelecanus philippensis, Gm.*
[*Malacca, Maingay, Salvad. U. di B.*, 363.]

Recently-described Species.

Republications.

Acridotheres melanosternus, *Legge.*

A comparison of the entire series of *Acridotheres tristis* in the national collection, from all parts of India, as well as from localities into which the Indian species has been introduced, such as the Mauritius and Bourbon, has convinced me of the propriety of separating the Ceylonese race ; and for it I propose the above title.

Messrs. Blyth and Jerdon pointed out many years ago that the Ceylon birds of this species were darker than the Indian. The former, in his Catalogue of the Birds of the Asiatic Society's Museum (1849), has the following remark :—"No. 574, *Dark variety* from Ceylon. Presented by Dr. Templeton." Jerdon follows, in his "Birds of India," Vol. II., with "those from Ceylon appear to be always darker." It is true the Ceylon race is much darker, both as regards the colouration of the upper surface and the hue of the flanks ; but the writers in question appear to have overlooked a feature in the plumage of the bird, which is constant in the Ceylon race and always absent in the Indian, *viz.*, that the black of the throat descends down the centre of the breast, and passes above the white abdomen, forming a sort of border to this region. In the Indian race this part is somewhat lighter than the surrounding plumage, instead of being darker. Specimens from the northern parts of the Peninsula are less albescent down the centre of the lower breast, and the sides of it are a pale, though sullied-looking, isabelline colour.

The nearest approach to the colouration of the Ceylonese bird is found, as one would naturally expect, in those from

Travancore, which have the black of the throat descending a little more upon the breast than the northern specimens, and have the *inner webs* of the feathers, exactly down the centre of the breast, blackish brown; but this is all, and this trifling amount of nigrescent does not continue down to the white of the abdomen.—A. & M. N. H., 5th Ser., III., 168, Feby. 1879.

Pyctorhis nasalis, *Legge.*

The Ceylonese race of *Pyctorhis sinensis* has the nostril as black as the bill, there being no trace of the yellow colour round the nostril which characterizes birds from all parts of the Peninsula and Burmah. It is altogether a darker bird than the Continental, the latter having the head reddish brown, and the outer webs of the quills cinnamon or pale chestnut-red. A comparison of a fine series of Ceylonese with an equally good one of Indian examples shows me that the pale character is constant in the latter, and the dark coloration equally so in the former. The insular bird has the primaries margined externally with reddish brown, which imparts a very different appearance from that which is noticeable in the red closed wing of the Indian form. It is somewhat remarkable that such a peculiar distinction should exist as that which I have noticed in regard to this bird's nostril; and I therefore have proposed the above title for our race, which I think will be found to be a well-marked sub species of the genus in question.—A. & M. N. H., 5th Ser., III., 169, Feby. 1879.

A Rough Tentative List of the Birds of India.

At the earnest and repeated requests of numerous subscribers, I publish the subjoined very crude and tentative, List of the Birds of India.

It has been very hurriedly put together to meet an urgent and crying want, and will doubtless prove to embody innumerable errors and to require many additions as well as corrections.

In the matter of generic names, it will certainly be especially open to criticism, as I have not yet given much attention to generic synonymy, nor have I, except in a very few cases, made up my mind as to what genera have priority, which should be retained intact, which subdivided, which rejected.

I ought, perhaps, however to note here that I have employed a few generic names, chiefly my own, which are doubtless not generally known, *viz.*:—

Ocyceros, (Nests and Eggs, Rough Draft, 113, 1873). Type *Buceros birostris*, *Scop.*

Cyanocinclus, (Nests and Eggs, Rough Draft, 226, 1873). Type, *Turdus cyanus, Lin.*

Molpastes, (S. F., I., 378, 1873). Type, *Muscicapa hæmorrhousa, Gm.*

Turdinulus, (S. F. VI, 235, 1878). Type, *Turdinulus roberti, God.-Aust. & Wald.*

Blanfordius, (S. F., I., 300, 1873). Type, *Blanfordius striatulus, Hume.*

Dissemuroides, (S. F., I., 408, 1873). Type, *Dissemuroides dicruriformis, Hume.*

Heteroglaux, (S. F., I., 467, 1873). Type, *Heteroglaux blewitti, Hume.*

Heterorhynchus, (S. F., I., 415, 1873; V., 238,). Type, *Heterorhynchus humii, Mandelli.*

Pycnorhamphus, (Nests and Eggs, Rough Draft, 469, 1874). Type, *Coccothraustes icterioides, Vig.*

Pseudototanus, (S. F., VII., 488, 1879; IV., 347). Type, *Totanus haughtoni, Armstrong.*

All of these (except perhaps *Blanfordius*, which might *possibly* be merged in *Drymœca*, though I am not sure of this) indicate, so far as I can at present judge, generic divisions, for which no previous, unoccupied, name exists, and which, unless we agree to lump nearly all modern generic divisions, are necessary and proper to be retained.

The specific synonymy I have partially worked up for about two-thirds of the species, but in the remaining third, in which I have merely followed other writers without any personal investigation, there may, for all I know to the contrary, be any number of errors.

In the arrangement I still follow Dr. Jerdon; firstly, because his is the only complete work on the Birds of India as yet available; and, secondly, because defective and illogical as his classification, in some respects, doubtless is, I have as yet met with no general system which did not appear to me to be equally, or even more, open to objection, and I have hitherto had no time to work out, in the light of modern research, a classification that I can myself approve.

The simple numbers in this list are those of Dr. Jerdon's work; all species to which these are prefixed will be found there described. Numbers compounded with *bis, ter, &c.*, A, B, &c., indicate (with some half dozen exceptions) species not included by Dr. Jerdon, but which have been (more or less satisfactorily) described in STRAY FEATHERS.

For the help of fellow-workers I have added, after each species, references to *some* of the places in JERDON'S BIRDS OF INDIA (Jerd.) and STRAY FEATHERS (S. F.), at which it will be found described, discriminated or discussed.

I have not referred to passages merely giving an account of breeding habits or nidification, because all these will be easiest referred to in the new edition of NESTS AND EGGS, now soon I hope to issue.

Of course the bird will not always be found described under the particular name now adopted in the list. Thus, taking 91*bis*.—Ptyonoprogne obsoleta, *Cab.*—S. F., I, 1, 417. Turning to the first reference, the reader will find a Ptyonoprogne pallida, *Hume*, described, but a glance at page 417 (the second reference) will show that the two are identical. Thus too in the case of a vast number of species on turning up the reference to Dr. Jerdon's work, the reader will find there, under the same number, a bird described under a different name to that used in this list. The conclusion to be drawn in all such cases is, that I believe that the bird described by Jerdon, in the passage and at the number indicated, should stand under the name given in the list, and not under that adopted by Jerdon.

A full and complete description will not, in some cases, be found at any *one* of the places referred to, but any one who reads *carefully* all the several passages to which references are given, will generally have little difficulty in identifying the species, since even where no detailed description has been furnished, the characteristic points of difference between the species in question and other nearly allied and more common ones which *have* been fully described, will have been clearly set forth.

It will not unfrequently happen, that on looking up all the references, contradictory opinions will be found to have been expressed. Where these are by the same authority, the author's latest utterances must be accepted as his more mature opinion, but where they are by different authors, the reader must accept the point as an unsettled one, and do what he can towards elucidating it.

This list includes the Birds of the whole Empire, except Beluchistan, Afghanistan, Badakshan, Wakhan, &c., on the North-West; the Maldives, the Mergui Archipelago, and the western half of the Malay Peninsula.

I have for long had in hand a complete list including the birds of these also, (so far as they are known to me,) with the full specific synonymy of each species, together with its distribution within the Empire as a whole.

The first draft of this, however, which is a work involving great labour, can hardly appear in less than two or three years, and in the meantime this list will, I am assured, be very useful to my numerous coadjutors, will enable them, I hope, to identify *any* species they get, will show the names that, *so far as I have*

yet gone into the question, should I believe be borne by each species, as also what species of each genus I at present accept (E. & O. E.), as occurring within the narrower limits above indicated.

Names printed in italics indicate species whose occurrence within our limits, or whose validity or distinctness, I disbelieve or seriously doubt.

There are a good many species, of whose validity as species in some cases, or as to whose occurrence within our limits in others, I am by no means *certain*. It is not so much that I actually disbelieve in these, as that I have as yet been unable to acquire any certainty in regard to them; these I have printed in ordinary type, but I have prefixed to them a note of interrogation, signifying that I personally do not guarantee them, and am not to be quoted as asserting either their validity as species, or occurrence within our limits, as the case may be.

Throughout, the authority that I have quoted, is the giver of the specific name, and this being stated, I have deemed it unnecessary to cumber the page with the sign *(sp.)* after every name, as recommended in the Code. (§ D. *vide* S. F., V., 377.)

Generally I may say that I have honestly endeavoured to act up strictly to the precepts of the British Association Code.

Pace the editors of the *Ibis* (*vide* S. F., VII., 521.) I assume (there being nothing about this in the Code) that whatever their derivations or construction, all generic names are *used** as substantives, and all specific ones as adjectives, and where the gender of the former is ascertainable either by its derivation (*e.g. Columba*), or from the form used (*e.g. Perdicula*), I have endeavoured always to make the latter, if of classical origin, agree, except in the case of Linnæan names which Linné printed with a capital first letter, and which, so far as I know, I have always left intact as regards gender. Whether or no I have done right in this, seems quite an open question. The Code is silent here.

Genders are, however, not always easily ascertainable. Many words were used in both genders by the ancients, and have continued to be so used, indiscriminately, by naturalists.

In some cases there is no real difficulty. Thus the word ὄρνις enters as the last member of the compound into a great many generic names, and writers use these indiscriminately as masculine and feminine. No doubt, the word *was* not unfrequently

* For instance, the generic name *Ochromela* is, of course, by derivation a pure adjective, but when applied as a generic name, I consider it to be used substantively *pro hac*, and to signify "The black and ochraceous one."

Again the specific name *rex*, in *Balæniceps rex*, is of course by derivation a substantive, but in its capacity of specific appellation, I hold it to be used as an adjective, and read the name as signifying "The Kingly Whale-head."

in later Attic used as feminine, especially when "*a hen*" was talked of, but speaking of birds generally, and taking the whole range of Greek literature ὄρνις, was as a rule treated as masculine. Under these circumstances no reasonable objection can be raised to treating all such compounds uniformly and invariably as masculine, despite the present popular tendency to treat most of them as feminine.

But other words (*e.g.* πέρδιξ, grus, &c.,) were used absolutely indiscriminately at all times as both masculine and feminine, and here as some rule is necessary to ensure uniformity, I have had to adopt, what the ancients ungallantly termed, the nobler gender.

Some words again are masculine or feminine according as you spell them, *e.g.*, *Ægialites*, masculine, and *Ægialitis*, feminine; both forms are equally correct, and we can then only go back to the original definition of the genus and see which form was used. In this particular case, Boie, who gave the name in 1822, used the feminine form; Kaup, quite unwarrantably changed it to the masculine in 1829. I have of course kept it as feminine.

Other words, again, are not really classical, but are only formed, often irregularly, on the model of some classical compound or derivative (*e.g. Arboricola*), and here the gender can only be guessed with reference to that of its supposed prototype (in this particular case presumably *agricola*). I have treated all generic names ending in *cola* as masculine, despite the fact that most authors treat "*Saxicola*" as feminine.

Others again, perhaps *intended* to be classical, are unintelligible. It is impossible, for instance, to guess what Bonaparte meant by the word *Chettusia*. Agassiz and others seem to have supposed that it was intended for a derivative of χαίτη a mane, and have spelt it *Chætusia*, but it is impossible to arrive at this latter by any rule or analogy, and it seems best in this and many similar cases to treat the name as a nonsense word, merely assuming its feminality from its termination, to secure euphony in the specific name.

The Code rule for converting Greek into Latin words will be found quoted, S. F., V., 370. To this, as well as other rules, I have endeavoured to adhere consistently.

According to the Code, ον terminal should become *um*; how is it that no one hardly is bold enough to give us *Malacopterum*, *Trochalopterum*, *Polyplectrum*, *&c.*? In the majority of cases the rule is commonly adhered to; in these and a few other cases it is ignored by almost every one. It seems to me that if you have a rule you should stick to it, and I have therefore adopted in every such case the spelling prescribed by the Code.

Some one looking over my list wishes to know why *melanopogon, Chelidon, Treron, Æsalon, Corydon, Delichon, &c.*, are exempted, forgetting that πώγων, χελιδών, τρήρων, ἀισάλων, κορυδών, do *not* end in ον and that *Delichon* is one of those objectionable anagrammatic words like *Dacelo*, &c., which belong to no language, and can be dealt with by no rule.

Delichon is not, I believe, a Greek word, only a kaleidoscopic re-arrangement of the letters of *Chelidon*.

Although I have not altered Linnæan specific names, commencing with a capital to secure agreement in gender, I have not hesitated to do this to secure uniformity of transliteration. Thus *Clangula glaucion*, the latter word being clearly derived from γλαύκιον, a certain grey-eyed water bird, I have rendered in accordance with rule *C. glaucium*—similarly I have altered *chrysaëtos* to *chrysaëtus*, *&c.*

Another rule, the substitution of *u* for the Greek ου, is equally disregarded. You as often find *macroura* as *macrura*; Linné uses both forms of transliteration impartially, and gives us *macrourus* and *Phœnicurus*, but as the former is his own name, while the latter is one beginning with a capital and not agreeing in gender with the generic name, and hence not altered by him, but appropriated from elsewhere in its integrity, we may presume that he personally gave the preference to the former.

Usually the generic name is spelt as *Dicrurus*, but a purist like Cabanis, who alters everybody's names unhesitatingly, changes Vieillot's *Dicrurus* into *Dicrourus*, and in this Sundevall follows him, while he accepts Lesson's *stipiturus*, (which should be *stipturus* at any rate) and so on.

Everywhere it is the same thing; want of uniformity. Now these diversities *are* a stumbling block to neophytes, and should be got rid of. There is only one word οὐρά a tail, and it should always be rendered the same way. We, English, at any rate, *have* a fixed rule on the subject, and by that we ought, I think, to be guided, and therefore throughout my list I have spelt this set of compounds in one uniform way, *viz.*, with the "*u*" and not with the "*ou.*"

Pompadoura I take to be derived from the name Pompadour, and not to be a compound.

Where simple words are manifestly mis-spelt, I have corrected them, for instance I have spelt *Cypsellus*, with two *l's*, this being correct. Again *Ithaginis* can be nothing but ἰθαγενής "noble," "genuine," and I have accordingly spelt it *Ithagenes*; while *Esacus* can only be derived from ἄισακος (inappropriate as the term is), and I have therefore spelt it *Æsacus*; but I have not as a rule dreamt of correcting *quasi*-irregular com-

pounds, such as *Butastur, pomarinus, Rhyticeros,* &c., where syllables have been designedly elided by syncope or fused by syncrasis for the sake of euphony or to avoid an unpleasant alliteration. From this rule I have only deviated where such syncope has led to misconception, as where a black-backed bird has been called *melanotus* (for *melanonotus*), and this has led to its generally appearing as *melanotis*, or black-eared.

There are many names of which I can make nothing, and with whose orthography or transliteration, treating them as nonsense names, I have not concerned myself. Take, for instance, Jerdon's *Brachypodius poiocephalus.* If *poio* were taken from the Greek, it should be spelt *pœo*, but there is no Greek word apparently from which it could come, except the Doric or Ionic forms of ποα, grass, as in ποιονομος, feeding on grass. But "grass-headed" would be an absurd name for a grey-headed bird, the rest of whose body was green. I have no doubt that Dr. Jerdon *meant* to write *poliocephala* (hoary-headed) or *phæocephala* (grey-headed), *but* he did *not*, and so as the word *poio* cannot be taken as from the Greek, I have written it *poiocephala*, as Jerdon did, and have *not* altered it, it being impossible to discover *now* whether he intended *poliocephala* or *phæocephala.*

Having thus briefly indicated the principles on which I have endeavoured to guide myself in compiling the nomenclature of this list, let me hasten to admit that most probably I have in my haste, unwittingly in some cases, disregarded these principles.

A list like this *must* be full of errors of nomenclature, and I can only most earnestly invite the co-operation of every one into whose hands it may fall in correcting it.

In order to facilitate its rectification, I shall retain a special section at the end of all future numbers of this journal, where all corrections and additions proved or discovered to be necessary will be indicated, and where all disputed points connected with it can be argued out and discussed.

I by no means promise to accept all volunteered emendations, but I do promise to give all such which are based on the Code a fair field, and to accept or explain fully my reasons for rejecting them.

I say "*based on the Code*," because it must be clearly understood that I am not prepared to re-argue points definitely settled by that Code. I do not personally agree with many of its *dicta*, but I consider uniformity of such paramount importance as to render it the plain duty of every British naturalist to abide strictly by *all* its dicta, (not merely those he may chance to concur in, but by the Code as a whole,) until it shall have

been modified by a consensus of naturalists as weighty as that which gave it currency.

Clearly, if each man is to overrule the Code in whichsoever particular he deems this justifiable, all advantages of a Code disappear, and we fall at once into the position of our continental brethren, each of whom, for the most part, does whatever seemeth good in his own eyes in these matters.

Strickland and his co-adjutors have lived and written in vain, if such a change can be deemed other than deplorable, and the only way to avoid this disastrous and retrograde movement is for all of us to sink private views, and first adhere strictly to the Code, so far as it goes; and, secondly, combine to accept a supplementary set of rules dealing with the more important questions on which the Code is silent, and, should it be possible to secure agreement in these points, modifying it in one or two respects in which it's precepts are opposed to it's principles.*

Altogether 1,788 species are enumerated, of which, as at present informed, I should reject 106; the names of these latter I have printed in italics. Of the remaining 1,682, I have doubts of 74; and to these I have prefixed a note of interrogation. My larger list contains at present 1,917 species.

There are many entire groups, such as the *Drymœcinæ*, the *Muscicapinæ*, *etc.*, which I have never yet had time to look into properly, the number of species in which I have no doubt that I shall be able to reduce when I go into them. For the present I have accepted every one's species all round, though many of them seem to me to require confirmation.

Altogether the time has not come for publishing any such list. In the first place an innumerable number of detailed investigations must be carried out before *any one* could publish a really correct list of this nature; in the second place, I have not the time to make this list even as correct as existing available materials would allow.

Still, as my readers *will* have it, and begin to retort on me, my favorite saying, *bis dat, qui cito dat, here* it is, and I can only repeat that my sole consolation in sending out such an imperfect work is, the hope that with all its shortcomings, and however little it may redound to *my* credit, it will yet prove of some little use to my fellow labourers here, and aid in some humble degree the progress of ornithology in India.

ALLAN HUME.

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* *e.g.*, where in violation of its fundamental law of priority, it rejects good genera of *Moehring*, and good binomial appellations of *Brünnich*.

1. Vultur monachus, *Lin.*—Jerd. I, 6.—S. F. VII, 321.
2. Otogyps calvus, *Scop.*—Jerd. I, 7.
3. *Gyps fulvus*, *Gm.*—Jerd. I, 8.—S. F. I, 149 ; III, 441 ; V, 217.
3 *bis.* Gyps fulvescens, *Hume.*—S. F. I, 148 ; VII, 322.
3 *ter.* Gyps himalayensis, *Hume.*—S. F. I, 148 ; VII, 323.
4. Gyps indicus, *Scop.*—Jerd. I, 9.—S. F. VII, 165.
4 *bis.* Gyps pallescens, *Hume.*—S. F. I, 150 ; VII, 165, 325.
4 *ter.* Gyps tenuirostris, *Hodgs.*—S. F. VII, 326.
5. Pseudogyps bengalensis, *Gm.*—Jerd. I, 10.
6. Neophron ginginianus, *Lath.*—Jerd. I, 12.—S. F. I, 150.
7. Gypaëtus barbatus, *Lin.*—Jerd. I, 13.
8. Falco peregrinus, *Gm.*—Jerd. I, 21.
9. Falco peregrinator, *Sund.*—Jerd. I, 25.—S. F. V, 500.
9 *bis.* Falco atriceps, *Hume.*—S. F. V, 128 ; VII, 326.
10. Falco sacer, *Gm.*—Jerd. I, 29.—S. F. I, 152.
10 *bis.* Falco hendersoni, *Hume.*—S. F. II, 530 ; V, 48 ; VII, 327.
11. Falco jugger, *J. E. Gr.*—Jerd. I, 30.
12. Falco babylonicus, *Gurn.*—Jerd. I, 32.—S. F. VII. 329.
12 *bis.* Falco barbarus, *Lin.*—S. F. I, 19 ; V, 140 ; VII, 174.
13. Falco subbuteo, *Lin.*—Jerd. I, 33.
14. Falco severus, *Horsf.*—Jerd. I, 34.
15. Falco æsalon, *Tunst.*—Jerd. I, 35.
16. Falco chiquera, *Daud.*—Jerd. I, 36.
16 *bis.* Poliohierax insignis, *Wald.*—S. F. III, 19, 417 ; VI, 2.
17. Cerchneis tinnunculus, *Lin.*—Jerd. I, 38.
17 *bis. Cerchneis saturata*, *Bly.*—S. F. V, 129 ; VI, 3.
18. *Cerchneis naumanni*, *Fleisch.*—Jerd. I, 40.—S. F. VII, 73, 331.
18 *bis.* Cerchneis pekinensis, *Swinh.*—S. F. III, 384 ; V, 5 ; VII, 332.
? 18 *ter.* Cerchneis inglisi, *Hume.*—S. F. III, 384 ; V, 5.
19. *Cerchneis vespertina*, *Lin.*—Jerd. I, 41.—S. F. VII, 332.
19 *bis.* Cerchneis amurensis, *Radde.*—S. F. II, 527 ; III, 303, 362 ; V, 6.
20. Microhierax cærulescens, *Lin.*—Jerd. I, 42.—S. F. III, 22 ; V, 127 ; VI, 3.
20 *bis.* Microhierax melanoleucus, *Bly.*—S. F. II, 525 ; V, 126.
20 *ter.* Microhierax fringillarius, *Drap.*—S. F. VI, 5.
21. Astur palumbarius, *Lin.*—Jerd. I, 45.
22. Astur trivirgatus, *Tem.*—Jerd. I, 47.—S. F. V, 8, 502.
22 *bis.* Astur rufitinctus, *McClell.*—S. F. V, 8, 124, 502.
23. Astur badius, *Gm.*—Jerd. I, 48.
23 *bis.* Astur poliopsis, *Hume.*—S. F. II, 325 ; III, 24 ; VI, 7.
23 *ter.* Astur soloensis, *Horsf.*—S. F. V, 124 ; VI, 8.
24. Accipiter nisus, *Lin.*—Jerd. I, 51.
24 *bis.* Accipiter melaschistus, *Hume.*—S. F. VII, 333.
25. Accipiter virgatus, *Reinw.*—Jerd. I, 52.—S. F. II, 141.
26. Aquila chrysaëtus, *Lin.*—Jerd. I, 55.
27. Aquila mogilnik, *S. G. Gm.*—Jerd. I, 57, *adult.*—S. F. I, 290, 325 ; VII, 335.
27 *bis.* Aquila nipalensis, *Hodgs.*—Jerd. I, 57, *young.*—S. F. I, 290, 326 ; VII, 338.
28. Aquila clanga, *Pall.*—Jerd. I, 59.—S. F. I, 328 ; III, 304 ; IV, 268, 271.
28 *bis.* Aquila fulvescens, *Gray.*—S. F. I, 463 ; VII, 339.
29. Aquila vindhiana, *Frankl.*—Jerd. I, 60.—S. F. I, 464.
30. Aquila hastata, *Less.*—Jerd. I, 62.

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31. Hieraëtus pennatus, *Gm.*—Jerd. I, 63.
32. Neopus malayensis, *Reinw.*—Jerd. I, 65.—S. F. VI, 11*n*.
33. Nisaëtus fasciatus, *Vieill.*—Jerd. I, 67.
34. Limnaëtus caligatus, *Raffl.*—Jerd. I, 70.—S. F. VI, 11*n*.
? 34 *A*. Limnaëtus horsfieldi, *Vig.*—S. F. V, 9; VI, 11*n*.; VII, 247, and *n*.
34 *bis*. Limnaëtus andamanensis, *Tyt.*—S. F. I, 52; II, 142; IV, 280.
34 *ter*. Limnaëtus alboniger, *Bly.*—S. F. VI, 12.
? 34 *quat*. Limnaëtus sphynx, *Hume.*—S. F. I, 319; VII, 511.
34 *quint*. *Limnaëtus lathami*, *Tick.*—S. F. II, 378; III, 316; VII, 198*n*.
35. Limnaëtus cirrhatus, *Gm.*—Jerd. I, 71.—S. F. IV, 356.
? 35 *bis*. Limnaëtus ceylonensis, *Gm.*—S. F. VII, 511.
36. Limnaëtus nipalensis, *Hodgs.*—Jerd. I, 73.—S. F. I, 319.
? 36 *bis*. Limnaëtus kelaarti, *Legge.*—S. F. VII, 511.
37. Lophotriorchis kieneri, ? *Gerv.*—Jerd. I, 74.—S. F. I, 310; V, 9; VII, 33.
38. Circaëtus gallicus, *Gm.*—Jerd. I, 76.
39. Spilornis cheela, *Lath.*—Jerd. I, 77.—S. F. I, 306.
39 *bis*. Spilornis melanotis, *Jerd.*—S. F. I, 306; VII, 340.
? 39 *bis A*. Spilornis spilogaster, *Bly.*—S. F. VII, 512.
39 *ter*. Spilornis rutherfordi, *Swinh.*—S. F. I, 306; II, 147; VI, 15.
39 *quat*. Spilornis davisoni, *Hume.*—S. F. I, 307; II, 147; IV, 281.
39 *quint*. *Spilornis bacha*, *Daud.*—S. F. I, 306.
39 *sex*. Spilornis elgini, *Tyt.*—S. F. I, 52; II, 144.
39 *sept*. Spilornis minimus, *Hume.*—S. F. I, 464; IV, 282.
40. Pandion haliaëtus, *Lin.*—Jerd. I, 80.
41. Polioaëtus ichthyaëtus, *Horsf.*—Jerd. I, 81.—S. F. III, 29, ? 363; V, 129.
41 *bis*. Polioaëtus plumbeus, *Hodgs.*—S. F. III, 385; V, 129.
41 *ter*. Polioaëtus humilis, *S. Müll. & Schl.*—S. F. V, 130.
42. Haliaëtus leucoryphus, *Pall.*—Jerd. I, 82.
42 *bis* Haliaëtus albicilla, *Lin.*—S. F. I, 159; VII, 341, 467.
43. Haliaëtus leucogaster, *Gm.*—Jerd. I, 84.—S. F. II, 149; IV, 422, 461.
44. *Buteo vulgaris*, *Leach.*—Jerd. I, 87 (*nec Nilgheri specimen.*)
44 *bis*. *Buteo desertorum*, *Daud.*—S. F. IV, 359; V, 65.
45. Buteo ferox, *S. G. Gm.*—Jerd. I, 88.—S. F. IV, 362.
46. Buteo leucocephalus, *Hodgs.*—Jerd. I, 90.—S. F. IV, 359*n*., 366.
47. Buteo plumipes, *Hodgs.*—Jerd. I, 91.—S. F. IV, 358; V, 65, 348.
48. Butastur teesa, *Frankl.*—Jerd. I, 92.
48 *bis*. Butastur indicus, *Gm.*—S. F. VI, 19.
48 *ter*. Butastur liventer, *Tem.*—S. F. III, 31.
49. Archibuteo hemiptilopus, *Bly.*—Jerd. I, 94.—S. F. I, 315; IV, 369.
50. Circus cyaneus, *Lin.*—Jerd. I, 95.—S. F. I, 160, 418.
51. Circus macrurus, *S. G. Gm.*—Jerd. I, 96.—S. F. I, 160, 418.
52. Circus cineraceus, *Mont.*—Jerd. I, 97.
53. Circus melanoleucus, *Forst.*—Jerd. I, 98.—S. F. III, 33; V, 11; VII, 256.
54. Circus æruginosus, *Lin.*—Jerd. I, 99.
55. Haliastur indus, *Bodd.*—Jerd. I, 101.—S. F. VII, 251.
56. Milvus govinda, *Sykes.*—Jerd. I, 104.
56 *bis*. Milvus melanotis, *Tem. & Schl.*—S. F. I, 160; III, 229.
56 *ter*. Milvus affinis, *Gould.*—S. F. I, 160.
? 56 *quat*. Milvus migrans, *Bodd.*—S. F. VII, 344.
57. Peruis ptilorhynchus, *Tem.*—Jerd. I, 108.

57 *bis.* *Pernis brachypterus*, *Bly.*—S. F. III, 36; VI, 24.
57 *ter.* Machæramphus alcinus, *West.*—S. F. III, 269.
58. Baza lophotes, *Cuv.*—Jerd. I, 111.
58 *bis.* Baza sumatrensis, *Lafr.*—S. F. III, 313.
58 *ter.* Baza ceylonensis, *Legge.*—S. F. IV, 247; VII, 151.
59. Elanus cæruleus, *Desf.*—Jerd. I, 112.
60. Strix javanica, *Gm.*—Jerd. I, 117.—S. F. I, 163; III, 332; VII, 253.
60 *bis.* Strix deroepstorffi, *Hume.*—S. F. III, 390.
61. Strix candida, *Tick.*—Jerd. I, 118.—S. F. III, 388; VII, 162.
62. Phodilus badius, *Horsf.*—Jerd. I, 119.
62 *bis.* Phodilus assimilis, *Hume.*—S. F. I, 429; V, 137, 353.
63. Syrnium indranee, *Sykes.*—Jerd. I, 121.—S. F. I, 429; VI, 27.
64. Syrnium newarense, *Hodgs.*—Jerd. I, 122.
65. Syrnium ocellatum, *Less.*—Jerd. I, 123.
65 *bis.* Syrnium seloputo, *Horsf.*—S. F. VI, 28.
66. Syrnium nivicolum, *Hodgs.*—Jerd. I, 124.
67. Asio otus, *Lin.*—Jerd. I, 125.—S. F. VII, 503.
67 *bis.* Asio butleri, *Hume.*—S. F. VII, 316.
68. Asio accipitrinus, *Pall.*—Jerd. I, 126.
68 *bis.* Nyctea scandiaca, *Lin.*—S. F. III, 327; VII, 345.
68 *ter.* Bubo ignavus, *Forst.*—S. F. VII, 346.
? 68 *quat.* Bubo turcomanus, *Eversm.*—S. F. I, 315; II, 331; VII, 348.
69. Bubo bengalensis, *Frankl.*—Jerd. I, 128.
70. Bubo coromandus, *Lath.*—Jerd. I, 130.
71. Bubo nipalensis, *Hodgs.*—Jerd. I, 131.—S. F. I, 431.
71 *bis.* Bubo orientalis, *Horsf.*—S. F. VI, 31.
72. Ketupa ceylonensis, *Gm.*—Jerd. I, 133.—S. F. I, 431.
73. Ketupa flavipes, *Hodgs.*—Jerd. I, 135.—S. F. III, 327, 416.
73 *bis.* Ketupa javanensis, *Less.*—S. F. IV, 300; VI, 33. [VII, 180.
74. Scops pennatus, *Hodgs.*—Jerd. I, 136 (*grey phase*).—S. F. III, 38; VI, 34;
74 *A. Scops stictonotus*, *Sharpe.*—S. F. VI, 34.
? 74 *B.* Scops rufipennis, *Sharpe.*—S. F. VI, 34; VII, 350.
74 *C.* Scops minutus, *Legge.*—S. F. VII, 145.
74 *bis.* Scops sunia, *Hodgs.*—Jerd. I, 137 (*rufous phase*).
74 *ter.* Scops spilocephalus, *Bly.*—S. F. VII, 352.
74 *ter A. Scops gymnopodus*, *G. R. Gr.*—S. F. VII, 353.
74 *quat.* Scops nicobaricus, *Hume.*—S. F. IV, 283.
74 *quint.* Scops modestus, *Wald.*—S. F. II, 492; IV, 284.
74 *sex. Scops malayanus*, *Hay.*—S. F. VII, 355.
74 *sept.* Scops brucii, *Hume.*—S. F. I, 8; V, 245; VII, 505.
74 *oct.* Scops balli, *Hume.*—S. F. I, 407; IV, 284.
74 *nov.* Scops sagittatus, *Cass.*—S. F. V, 247; VI, 35.
75. Scops lettia, *Hodgs.*—Jerd. I, 139.—S. F. VII, 357.
75 *bis.* Scops plumipes, *Hume.*—S. F. VII, 357, 358. [VII, 175, 359, 506.
75 *ter.* Scops bakkamuna, *Forst.*—Jerd. I, (139 *griseus*).—S. F. I, 432; V, 135;
75 *quat.* Scops malabaricus, *Jerd.*—Jerd. I, 139, (*malabaricus*).—S. F. II, 454;
75 *quint.* Scops lempiji, *Horsf.*—S. F. VI, 35. [VII, 34, 361.
76. Carine brama, *Tem.*—Jerd. I, 141.
76 *bis.* *Carine glaux*, *Sav.*—S. F. VII, 362.
76 *ter.* Carine bactriana, *Hutt.*—S. F. V, 350; VII, 363.

76 *quat.*—101 *bis.*]

76 *quat.* Carine pulchra, *Hume.*—S. F. I, 469.
76 *quint.* Heteroglaux blewitti, *Hume.*—S. F. I, 468; V, 412.
77 Glaucidium radiatum, *Tick.*—Jerd. I, 143.—S. F. IV, 373; VI, 36.
78 Glaucidium malabaricum, *Bly.*—Jerd. I, 144.—S. F. IV, 372.
78*bis.* Glaucidium castaneonotum, *Bly.*—S. F. VII, 364.
78 *ter. Glaucidium castaneopterum, Horsf.*—S. F. VI, 36.
79 Glaucidium cuculoides, *Vig.*—Jerd. I, 145.—S. F. III, 39; VI, 37.
79 *bis. Glaucidium whitleyi, Bly.*—S. F. VI, 38.
80 Glaucidium brodii, *Burt.*—Jerd. I, 146.—S. F. VI, 39.
81 Ninox lugubris, *Tick.*—Jerd. I, 147, (*in p.*).—S. F. IV, 285.
81 *bis.* Ninox scutulata, *Raffl.*—Jerd. I, 147 (*in p.*).—S. F. IV, 285, 373.
81 *ter.* Ninox burmanica, *Hume.*—S. F. IV, 285-6; V, 16; VI, 40.
81 *quat.* Ninox affinis, *Tyt.*—S. F. II, 152; IV, 285, 286; VII, 364.
81 *quint.* Ninox obscura, *Hume.*—S. F. I, 11; II, 153.
82. Hirundo rustica, *Lin.*—Jerd. I, 157.—S. F. VI, 41.
? 82 *bis.* Hirundo gutturalis, *Scop.*—S. F. VI, 41.
82 *ter.* Hirundo tytleri, *Jerd.*—S. F. III, 41; VI, 41.
82 *quat. Hirundo andamanensis, Tyt.*—S. F. I, 55; IV, 286.
82 *quint. Hirundo horreorum, Bart.*—S. F. VI, 42.
83. Hirundo javanica, *Sparrm.*—Jerd. I, 158.—S. F. VI, 43.
84. Hirundo filifera, *Steph.*—Jerd. I, 159.—S. F. I, 164; VI, 43.
85. Hirundo erythropygia, *Sykes.*—Jerd. I, 160.—S. F. V, 255.
85 *bis.* Hirundo nipalensis, *Hodgs.*—S. F. V, 262.
85 *ter.* Hirundo intermedia, *Hume.*—S. F. V, 263.
85 *quat.* Hirundo substriolata, *Hume.*—S. F. V, 264.
85 *quint.* Hirundo hyperythra, *Lay.*—S. F. V, 266.
86. Hirundo fluvicola, *Jerd.*—Jerd. I, 161.
87. Cotyle riparia, *Lin.*—Jerd. I, 163.—S. F. I, 164; III, 452; IV, 507; VI, 44.
88. *Cotyle subsoccata, Hodgs.*—Jerd. I, 163.—S. F. I, 164.
89. Cotyle sinensis, *J. E. Gr.*—Jerd. I, 164.—S. F. III, 42; VI, 45.
90. Ptyonoprogne concolor, *Sykes.*—Jerd. I, 165.
91. Ptyonoprogne rupestris, *Scop.*—Jerd. I, 166.—S. F. I, 2.
91 *bis.* Ptyonoprogne obsoleta, *Cab.*—S. F. I, 1, 417.
92. Chelidon urbica, *Lin.*—Jerd. I, 166.—S. F. VI, 45.
93. Chelidon cashmeriensis, *Gould.*—Jerd. I, 167.
94. Delichon nipalensis, *Hodgs.*—Jerd. I, 168.
95. Chætura sylvatica, *Tick.*—Jerd. I, 170.—S. F. VII, 202.
95 *bis.* Chætura leucopygialis, *Bly.*—S. F. VI, 45; VII, 518.
? 96. Chætura indica, *Hume.*—Jerd. I, 172.—S. F. I, 471; IV, 286; VI, 46.
96 *bis.* Chætura gigantea, *Hass.*—S. F. I, 471; IV, 286; VI, 46.
97. Chætura nudipes, *Hodgs.*—Jerd. I, 173.
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99. Cypsellus apus, *Lin.*—Jerd. I, 177.—S. F. I, 165.
99 *bis.* Cypsellus acuticaudus, *Bly.*—S. F. II, 156.
? 99 *ter.* Cypsellus pallidus, *Shell.*—S. F. VII, 365.
? 99 *quat.* Cypsellus pekinensis, *Swinh.*—S. F. VII, 365.
100. Cypsellus affinis, *J. E. Gr.*—Jerd. I, 177.—S. F. I, 166.
100 *bis.* Cypsellus subfurcatus, *Bly.*—S. F. II, 524; VI, 47.
101. Cypsellus leuconyx, *Bly.*—Jerd. I, 179.—S. F. III, 44.
101 *bis.* Cypsellus pacificus, *Lath.*—S. F. III, 43; VI, 48.

102. Cypsellus batassiensis, *J. E. Gr.*—Jerd. I, 180.—S. F. VI, 48.
102 *bis.* Cypsellus infumatus, *Sclat.*—S. F. III, 44; VI, 48. [VI, 50.
103 Collocalia unicolor, *Jerd.*—Jerd. I, 182.—S. F. I, 296; II, 493; IV, 375;
103 *bis.* Collocalia linchi, *Horsf.*—S. F. I, 55, 296; II, 157; VI, 49.
103 *ter.* Collocalia innominata, *Hume.*—S. F. I, 294; II, 493; VI, 49.
103 *quat.* Collocalia spodiopygia, *Peale.*—S. F. I, 296; II, 158, 160, 493; VI, 51.
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104 *bis.* Dendrochelidon comata, *Tem.*—S. F. VI, 51.
104 *ter.* Dendrochelidon longipennis, *Rafin.*—S. F. VI, 52.
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105 *bis.* Batrachostomus punctatus, *Hume.*—S. F. II, 354; VI, 55.
105 *ter.* *Batrachostomus affinis*, *Bly.*—S. F. II, 351; VI, 54. [VI, 53.
106. Batrachostomus hodgsoni, *G. R. Gr.*—Jerd. 190.—S. F. II, 348; IV, 376;
106 *bis.* *Batrachostomus javensis*, *Horsf.*—S. F. VII, 147.
107. Caprimulgus indicus, *Lath.*—Jerd. I, 192.—S. F. IV, 381; VI, 56, 57.
107 *bis.* Caprimulgus jotaka, *Tem. & Schl.*—S. F. VI, 56.
? 108. Caprimulgus kelaarti, *Bly.*—Jerd. I, 193.—S. F. IV, 381.
109. Caprimulgus albonotatus, *Tick.*—Jerd. I, 194.—S. F. VI, 58; VII, 257*n*.
110. Caprimulgus macrurus, *Horsf.*—Jerd. I, 195.—S. F. VI, 58; VII, 257*n*.
110 *bis.* Caprimulgus andamanicus, *Hume.*—S. F. I, 470; II, 493.
111. Caprimulgus atripennis, *Jerd.*—Jerd. I, 196.
111 *bis.* Caprimulgus unwini, *Hume.*—S. F. III, 407; IV, 501; VII, 175.
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113. Caprimulgus mahrattensis, *Sykes.*—Jerd. I, 197.
114. Caprimulgus monticolus, *Frankl.*—Jerd. I, 198.
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115 *bis.* Harpactes duvauceli, *Tem.*—S. F. VI, 63.
116. Harpactes erythrocephalus, *Gould.*—Jerd. I, 202.—S. F. III, 47; VI, 66, 498.
116 *bis.* Harpactes oreskios, *Tem.*—S. F. III, 47; VI, 66.
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118. Merops philippinus, *Lin.*—Jerd. I, 207.—S. F. II, 162.
119. Merops swinhoii, *Hume.*—Jerd. I, 208.—S. F. II, 163; VI, 68; VII, 455.
120. Merops persicus, *Pall.*—Jerd. I, 209.—S. F. I, 167; II, 466; III, 326, 456.
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123. Coracias indica, *Lin.*—Jerd. I, 214.—S. F. VII, 259.
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125. Coracias garrula, *Lin.*—Jerd. I, 218.—S. F. I, 168; IV, 133; V, 502.
126. Eurystomus orientalis, *Lin.*—Jerd. I, 219.—S. F. II, 164; VI, 72.
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127 *ter.* Pelargopsis intermedia, *Hume.*—S. F. II, 166, 489.
128. Pelargopsis amauroptera, *Pears.*—Jerd I, 224.
129. Halcyon smyrnensis, *Lin.*—Jerd. I, 224.—S. F. VI, 74.
129 *bis.* Halcyon saturatior, *Hume.*—S. F. II, 168, 531.
130. Halcyon pileata, *Bodd.*—Jerd. I, 226.—S. F. II, 168; IV, 306; VI, 74.
131. Halcyon coromanda, *Lath.*—Jerd. I, 227.—S. F. II, 169, 494; VI, 75.

131 *bis.*—151 *bis.*]

131 *bis.* Halcyon concreta, *Tem.*—S. F. VI, 76. [VI, 78; VII, 168.
132. Halcyon chloris, *Bodd.*—Jerd. I, 228.—S. F. I, 451; II, 170; IV, 306;
132 *bis.* Halcyon occipitalis, *Bly.*—S. F. I, 58, 451; II, 171.
132 *ter.* Carcineutes pulchellus, *Horsf.*—S. F. I, 474; II, 484; VI, 79.
133. Ceyx tridactylus, *Pall.*—Jerd. I, 229.—S. F. VI, 80.
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134 *bis.* Alcedo ispida, *Lin.*—S. F. I, 168.
135. Alcedo grandis, *Bly.*—Jerd. I, 231.
135 *bis.* Alcedo nigricans, *Bly.*—S. F. VI, 81.
135 *ter.* Alcedo meninting, *Horsf.*—S. F. I, 59; II, 494; IV, 383; VI, 83, 84.
? 135 *quat.* Alcedo beavani, *Wald.*—S. F. II, 174, 494; IV, 287, 383; VI, 84.
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137. Ceryle guttata, *Vig.*—Jerd. I, 234.—S. F. V, 19; VI, 85*n.*
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139 *sex.* Corydon sumatranus, *Raffl.*—S. F. VI, 97.
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141 *bis. Hydrocissa convexa, Tem.*—S. F. VII, 366.
142. Hydrocissa albirostris, *Shaw.*—Jerd. I, 247.—S. F. VI, 100, 102*n.*; VII, 204.
143. Hydrocissa affinis, *Hutt.*—Jerd. I, 247.—S. F. VI, 102, 103; VII, 204.
144. Ocyceros birostris, *Scop.*—Jerd. I, 248.—S. F. III, 331.
144 *bis.* Anorrhinus tickelli, *Bly.*—S. F. VI, 103; VII, 499.
? 144 *ter.* Anorrhinus austeni, *Jerd.*—S. F. IV, 493; V, 60, 117; VII, 167, 499.
145. Tockus griseus, *Lath.*—Jerd. I, 250.—S. F. IV, 387.
145 *bis.* Tockus gingalensis, *Shaw.*—S. F. VII, 366.
145 *ter.* Berenicornis comatus, *Raffl.*—S. F. VI, 106.
145 *quat.* Anorrhinus galeritus, *Tem.*—S. F. VI, 109.
146. Aceros nipalensis, *Hodgs.*—Jerd. I, 250.
146 *bis.* Rhyticeros undulatus, *Shaw.*—S. F. VI, 111.
146 *ter.* Rhyticeros subruficollis, *Bly.*—S. F. VI. 112.
146 *quat.* Rhyticeros narcondami, *Hume.*—S. F. I, 411.
146 *quint.* Rhinoplax vigil, *Forst.*—S. F. VI, 115.
147. Palæornis eupatria, *Lin.*—Jerd. I, 256, *in p.*—S. F. II, 10.
147 *bis.* Palæornis magnirostris, *Ball.*—S. F. I, 60; II, 10, 176. [VI, 117; VII, 458.
147 *ter.* Palæornis nipalensis, *Hodgs.*—Jerd. I, 256, *in p.*—S. F. I, 335; II, 10;
147 *quat.* Palæornis indoburmanicus, *Hume.*—Jerd. I, 256, *in p.*—S. F. VI, 117;
148. Palæornis torquatus, *Bodd.*—Jerd. I, 257.—S. F. II, 13. [VII, 458.
149. Palæornis purpureus, *P. L. S. Müll.*—Jerd. I, 259, *in p.*—S. F. II, 15; VII, 261.
149 *bis.* Palæornis cyanocephalus, *Lin.*—Jerd. I, 259, *in p.*—S. F. II, 16; V, 21.
150. Palæornis schisticeps, *Hodgs.*—Jerd. I, 261.—S. F. II, 17.
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151. Palæornis columboides, *Vig.*—Jerd. I, 261.—S. F. II, 21.
151 *bis.* Palæornis calthropæ, *Lay.*—S. F. II, 18; VII, 367.

151 *ter.* Palæornis caniceps, *Bly.*—S. F. I, 61 ; II, 178. [V, 21; VII, 163.
152. Palæornis fasciatus, *P. L. S. Müll.*—Jerd. I, 262.— S. F. II, 20 ; III, 264 ;
152 *bis.* Palæornis nicobaricus, *Gould.*—S. F. I, 60 ; II, 181.
152 *ter.* Palæornis tytleri, *Hume.*—S. F. II, 23, 184, 454.
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153 *bis.* Loriculus indicus, *Gm.*—S. F. II, 186 ; VII, 368.
153 *ter.* Psittinus incertus, *Shaw.*—S. F. VI, 120.
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155. Picus majoroides, *Hodgs.*—Jerd. I, 270.
155 *bis.* Picus manderinus, *Gould.* var. *God.-Aust.*—S. F. V, 53.
156. Picus cathpharius, *Hodgs.*—Jerd. I, 271.
157. Picus macii, *Vieill.*—Jerd. I, 272.
157 *bis.* Picus andamanensis, *Bly.*—S. F. I, 62 ; II, 187.
157 *ter.* Picus analis, *Horsf.*—S. F. III, 57.
157 *quat.* Picus atratus, *Bly.*—S. F. VI, 123, 500.
? 157 *quint.* Picus westermanni, *Bly.*—S. F. III, 411.
158. Picus sindianus, *Gould.*—Jerd. I, 273.—S. F. I, 170.
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160. Picus mahrattensis, *Lath.*—Jerd. I, 274.—S. F. III, 58.
161. Hypopicus hyperythrus, *Vig.*—Jerd. I, 276.
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163. Yungipicus pygmæus, *Vig.*—Jerd. I, 277.—S. F. III, 60.
163 *bis.* Yungipicus canicapillus, *Bly.*—S. F. III, 59 ; VI, 125, 500.
164. Yungipicus nanus, *Vig.*—Jerd. I, 278.—S. F. III, 60.
164 *bis.* Yungipicus gymnopthalmus, *Bly.*—S. F. III, 60 ; IV, 389.
165. Hemicercus cordatus, *Jerd.*—Jerd. I, 280.—S. F. III, 61 ; IV, 389 ; V, 25.
165 *bis.* Hemicercus canente, *Less.*—S. F. III, 61 ; IV, 389 ; V, 25 ; VI, 127,
165 *bis A.* Hemicercus sordidus, *Eyt.*—S. F. VI, 128. [500.
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165 *quat.* Miglyptes jugularis, *Bly.*—S. F. III, 63.
165 *quint.* Miglyptes tukki, *Less.*—S. F. VI, 132.
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166 *bis.* Chrysocolaptes delesserti, *Malh.*—S. F. III, 64 ; VI, 133.
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167. Chrysocolaptes festivus, *Bodd.*—Jerd. I, 282.—S. F. I, 373 ; VII, 206.
168. Muelleripicus pulverulentus, *Tem.*—Jerd. I, 284.—S. F. III, 66 ; VI, 133.
168 *bis. Dryocopus martius, Lin.*—S. F. I, 171 ; VII, 369.
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169 *bis.* Thriponax hodgii, *Bly.*—S. F. I, 63; II, 189 ; III, 67.
169 *ter.* Thriponax crawfurdi, *J. E. Gr.*—S. F. III, 66 ; VI, 134.
169 *quat.* Thriponax javensis, *Horsf.*—S. F. III, 67; VI, 135.
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172. Gecinus occipitalis, *Vig.*—Jerd. I, 287.
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174. Chrysophlegma chlorolophus, *Vieill.*—Jerd. I, 289.—S. F. VI, 138.
175. Chrysophlegma chlorigaster, *Jerd.*—Jerd. I, 290.—S. F. VII, 517.
175 *bis.* Callolophus mentalis, *Tem.*—S. F. VI, 138.

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175 *ter*. Callolophus puniceus, *Horsf.*—S. F. VI, 139.
175 *quat*. Callolophus malaccensis, *Lath.*—S. F. III, 324*n*.; VI, 140.
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176 *bis*. Blythipicus porphyromelas, *Boie.*—S. F. VI, 143; VII, 520.
177. Gecinulus grantia, *McClell.*—Jerd. I, 292.
177 *bis*. Gecinulus viridis, *Bly.*—S. F. III, 71; VI, 144. [VI, 145.
178. Micropternus phæoceps, *Bly.*—Jerd. I, 294.—S. F. III, 72; V, 473, 481.
178 *bis*. Micropternus brachyurus, *Vieill.*—S. F. V, 473, 481; VI, 145.
179. Micropternus gularis, *Jerd.*—Jerd. I, 294.—S. F. V, 477, *et seq.*; VII, 470.
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181. Brachypternus puncticollis, *Malh.*—Jerd. I, 296.—S. F. IV, 242.
182. *Brachypternus dilutus, Bly.*—Jerd. I, 297.—S. F. I, 171.
182 *bis*. Brachypternus ceylonus, *Forst.*—S. F. VII, 369.
183. Tiga shorii, *Vig.*—Jerd. I, 298.—S. F. V, 497.
184. Tiga javanensis, *Ljung.*—Jerd. I, 299.—S. F. III, 328; IV, 390; VI, 146.
185. *Tiga rubropygialis, Malh.*—Jerd. I, 299.—S. F. III, 328; IV, 390; VI, 146.
185 *bis*. Gauropicoides rafflesi, *Vig.*—S. F. VI, 146.
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189. *Yunx indica, Gould.*—Jerd. I, 304.—S. F. VII, 459.
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190 *bis*. Calorhamphus hayi, *J. E. Gr.*—S. F. VI, 149.
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191 *bis*. Megalæma virens, *Bodd.*—S. F. II, 472; VI, 150.
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195 *bis*. Megalæma davisoni, *Hume.*—S. F. V, 108.
195 *ter*. Megalæma incognita, *Hume.*—S. F. II, 442, 486; VI, 151, 501.
196. Megalæma franklini, *Bly.*—Jerd. I, 314.
196 *bis*. Megalæma ramsayi, *Wald.*—S. F. III, 402; VI, 152.
196 *ter*. Megalæma flavifrons, *Cuv.*—S. F. VII, 370.
196 *quat*. Megalæma mystacophanus, *Tem.*—S. F. VI, 152. [III, 77.
197. Xantholæma hæmacephala, *P. L. S. Müll.*—Jerd. I, 315.—S. F. I, 453
198. Xantholæma malabarica, *Bly.*—Jerd. I, 317.—S. F. IV, 392.
198 *bis*. Xantholæma rubricapilla, *Gm.*—S. F. VII, 371.
198 *ter*. Megalæma cyanotis, *Bly.*—S. F. III, 77; VI, 155.
199. Cuculus canorus, *Lin.*—Jerd. I, 322.—S. F. IV, 288.
200. Cuculus striatus, *Drap.*—Jerd. I, 323.—S. F. II, 190.
201. Cuculus poliocephalus, *Lath.*—Jerd. I, 324.
202. Cuculus sonnerati, *Lath.*—Jerd. I, 325.—S. F. VI, 156; VII, 207.
203. Cuculus micropterus, *Gould.*—Jerd. I, 326.—S. F. III, 79.
204. *Cuculus affinis, Hay.*—Jerd. I, 328.—S. F. III, 79.
205. Hierococcyx varius, *Vahl.*—Jerd. I, 329.
205 *bis*. Hierococcyx nanus, *Hume.*—S. F. V, 490; VI, 502.
206. Hierococcyx nisicolor, *Hodgs.*—Jerd. I, 330.—S. F. V, 96, 347; VI, 157.

207. Hierococcyx sparveroides, *Vig.*—Jerd. I, 331.—S. F. III, 80; VI, 157.
207 *bis.* *Hierococcyx nisoides*, *Bly.*—S. F. VII, 371.
208. Cacomantis passerinus, *Vahl.*—Jerd. I, 333.
209. Cacomantis threnodes, *Cab.*—Jerd. I, 335.—S. F. VI, 158.
210. Surniculus lugubris, *Horsf.*—Jerd. I, 336.—S. F. VI, 159.
211. Chrysococcyx maculatus, *Gm.*—Jerd. I, 338.—S. F. VI, 161, 502-6.
211 *bis.* Chrysococcyx xanthorhynchus, *Horsf.*—S. F. II, 191; III, 81; VI, 503-6.
211 *ter.* Chrysococcyx malayanus, *Raffl.*—S. F. VI, 503.
211 *quat.* Chrysococcyx limborgi, *Wald.*—S. F. VII, 319.
212. Coccystes jacobinus, *Bodd.*—Jerd. I, 339.
213. Coccystes coromandus, *Lin.*—Jerd. I, 341.—S. F. III, 82.
214. Eudynamis honorata, *Lin.*—Jerd. I, 342.
214 *bis.* Eudynamis malayana, *Cab. & Hein.*—S. F. II, 192; III, 82; VI, 162.
215. Rhopodytes tristis, *Less.*—Jerd. I, 345.—S. F. VI, 162.
215 *bis.* Rhopodytes diardi, *Less.*—S. F. VI, 163.
215 *ter.* Rhopodytes sumatranus, *Raffl.*—S. F. VI, 164.
216. Rhopodytes viridirostris, *Jerd.*—Jerd. I, 346.—S. F. VI, 163.
216 *bis.* Phœnicophäes pyrrhocephalus, *Forst.*—S. F. I, 346; VII, 372.
216 *ter.* Rhamphococcyx erythrognathus, *Hartl.*—S. F. VI, 165, 506.
216 *quat.* Rhinortha chlorophaea, *Raffl.*—S. F. VI, 166.
216 *quint.* Zanclostomus javanicus, *Horsf.*—S. F. VI, 167.
217. Centrococcyx rufipennis, *Ill.*—Jerd. I, 348.—S. F. I, 453.
217 *bis.* Centrococcyx andamanensis, *Tyt.*—S. F. I, 64; II, 194.
217 *ter.* Centrococcyx chlororhynchus, *Blyth.*—S. F. VII, 372.
217 *quat.* Centrococcyx intermedius, *Hume.*—S. F. I, 454; VI, 169.
217 *quint.* Centrococcyx maximus, *Hume.*—S. F. I, 454; VI, 169. [VI, 171.
218. Centrococcyx bengalensis, *Gm.*—Jerd. I, 350.—S. F. III, 84; V, 385;
219. Taccocua leschenaulti, *Less.*—Jerd. I, 352.—S. F. V, 218.
220. Taccocua sirkee, *J. E. Gr.*—Jerd. I, 353.—S. F. V, 219.
221. Taccocua infuscata, *Bly.*—Jerd. I, 353.
? 222. Taccocua affinis, *Bly.*—Jerd. I, 354.—S. F. V, 219; VII, 208*n*.
223. Arachnothera magna, *Hodgs.*—Jerd. I, 360.—S. F. III, 85; VI, 173.
223 *bis.* Arachnothera aurata, *Bly.*—S. F. III, 85. [VII, 35.
224. Arachnothera longirostra, *Lath.*—Jerd. I, 361.—S. F. III, 85; VI, 174;
224 *bis.* Arachnothera modesta, *Eyt.*—S. F. III, 85; VI, 176.
224 *ter.* Arachnothera chrysogenys, *Tem.*—S. F. III, 85; VI, 177.
225. Æthopyga seheriæ, *Tick.*—Jerd. I, 362.—S. F. II, 396; V, 71, 122.
225 *bis.* Æthopyga nicobarica, *Hume.*—S. F. I, 412; II, 80, 85; V, 71.
225 *ter.* Æthopyga cara, *Hume.*—S. F. II, 473*n*.; V, 71; VI, 179.
226. Æthopyga vigorsi, *Sykes.*—Jerd. I, 363.—S. F. IV, 255; V, 71, 123.
227. Æthopyga gouldiæ, *Vig.*—Jerd. I, 364.—S. F. V, 71.
227 *bis.* Æthopyga dabryi, *Verr.*—S. F. V, 71; VI, 180.
228. Æthopyga ignicauda, *Hodgs.*—Jerd. I, 365.—S. F. V, 71.
229. Æthopyga nipalensis, *Hodgs.*—Jerd. I, 366.—S. F. V, 71.
230. Æthopyga horsfieldi, *Bly.*—Jerd. I, 367.—S. F. V, 71.
231. Æthopyga saturata, *Hodgs.*—Jerd. I, 367.—S. F. V, 71. [VI, 182.
231 *bis.* Æthopyga sanguinipectus, *Wald.*—S. F. III, 402; V, 51, 71, 71*n*.;
231 *ter.* Chalcostetha insignis, *Jard.*—S. F. III, 319*n*.; VI, 183.
232. Cinnyris zeylonica, *Lin.*—Jerd. I, 368.—S. F. V, 270, 398.
233. Cinnyris minima, *Sykes.*—Jerd. I, 369.—S. F. IV, 256, 392; V, 398.

233 *bis.*—257 *bis.*]

233 *bis.* Cinnyris braziliana, *Gm.*—S. F. V, 275; VI, 184.
233 *ter.* Anthreptes malaccensis, *Scop.*—S. F. VI, 186.
233 *quat.* Anthreptes simplex, *S. Müll.*—S. F. III, 320*n.*; VI, 188.
233 *quint.* Anthreptes hypogrammica, *S. Müll.*—S. F. VI, 178.
233 *sex.* Chalcoparia singalensis, *Gm.*—S. F. III, 86; V, 278; VI, 189.
234. Cinnyris asiatica, *Lath.*—Jerd. I, 370.—S. F. VI, 190.
234 *bis.* Cinnyris pectoralis, *Horsf.* (*nec. Tem.*)—S. F. I, 64; II, 196; V, 70.
234 *ter.* Cinnyris flammaxillaris, *Bly.*—S. F. IV, 313; V, 70; VI, 192.
234 *quat.* Cinnyris andamanica, *Hume.*—S. F. I, 404; V, 70.
235. Cinnyris lotenia, *Lin.*—Jerd. I, 372.
236. Dicæum cruentatum, *Lin.*—Jerd. I, 373.—S. F. VI, 192.
236 *bis.* Dicæum trigonostigma, *Scop.*—S. F. VI, 194.
237. Dicæum chrysorrhæum, *Tem.*—Jerd. I, 374.—S. F. VI, 195.
237 *bis.* Dicæum virescens, *Hume.*—S. F. I, 482.
237 *ter.* Dicæum olivaceum, *Wald.*—S. F. III, 403; IV, 498; VI, 195.
238. Dicæum erythrorhynchus, *Lath.*—Jerd. I, 374.—S. F. VI, 196.
239. Dicæum concolor, *Jerd.*—Jerd. I, 375.
240. Piprisoma agile, *Tick.*—Jerd. I, 376.—S. F. III, 299.
240 *bis.* *Prionochilus pipra*, *Less.*—S. F. VII, 372.
240 *ter.* Prionochilus vincens, *Sclat.*—S. F. IV, 493.
240 *quat.* Prionochilus percussus, *Tem.*—S. F. VI, 196.
240 *quint.* Prionochilus maculatus, *Tem.*—S. F. VI, 199.
240 *sex.* Prionochilus modestus, *Hume.*—S. F. III, 298; VI, 200.
240 *sept.* *Prionochilus thoracicus*, *Tem.*—S. F. VI, 198.
241. Myzanthe ignipectus, *Hodgs.*—Jerd. I, 377.
242. Pachyglossa melanoxantha, *Hodgs.*—Jerd. I, 378.—S. F. III, 299; V, 348.
243. Certhia himalayana, *Vig.*—Jerd. I, 380.—S. F. V, 73.
243 *bis.* Certhia hodgsoni, *Brooks.*—S. F. III, 233*n.*; V, 73.
244. Certhia nipalensis, *Hodgs.* apud *Bly.*—Jerd. I, 381.—S. F. V, 77.
244 *bis.* Certhia stoliczkæ, *Brooks.*—S. F. V, 77.
245. Certhia discolor, *Bly.*—Jerd. I, 381.—S. F. V, 74. [462; IV, 232.
246. Salpornis spilonota, *Frankl.*—Jerd. I, 382.—S. F. I, 375; II, 335, 397; III,
247. Tichodroma muraria, *Lin.*—Jerd. I, 383.—S. F. V, 122.
248. Sitta himalayensis, *Jard. & Selb.*—Jerd. I, 385.
248 *bis.* Sitta cashmerensis, *Brooks.*—S. F. III, 233*n.*
248 *ter.* Sitta nagaensis, *G.-Aust.*—S. F. III, 391.
248 *quat.* Sitta magna, *W.-Rams.*—S. F. V, 343.
? 248 *quint.* Sitta neumayeri, *Mich.*—S. F. V, 350; VII, 373.
249. Sitta leucopsis, *Gould.*—Jerd. I, 385.—S. F. III, 234.
250. Sitta castaneiventris, *Frankl.*—Jerd. I, 386.
250 *bis.* Sitta neglecta, *Wald.*—S. F. III, 87; VI, 201.
251. Sitta cinnamomeiventris, *Bly.*—Jerd. I, 387. [VII, 459.
252. Sitta formosa, *Bly.*—Jerd. I, 387.
253. Dendrophila frontalis, *Horsf.*—Jerd. I, 388.—S. F. III, 89, 436; VI, 201;
254. Upupa epops, *Lin.*—Jerd. I, 390.—S. F. I, 174; III, 90.
254 *bis.* Upupa longirostris, *Jerd.*—S. F. III, 89; VI, 202.
255. Upupa ceylonensis, *Reich.*—Jerd. I, 392.—S. F. III, 90; VII, 517.
256. Lanius lahtora, *Sykes.*—Jerd. I, 400.
257. Lanius erythronotus, *Vig.*—Jerd. I, 402.—S. F. I, 174; VII, 374.
257 *bis.* Lanius caniceps, *Bly.*—S. F. IV, 243; VII, 374.

258. Lanius tephronotus, *Vig.*—Jerd. I, 403.—S. F. VII, 374.
259. Lanius nigriceps, *Frankl.*—Jerd. I, 404.—S. F. VII, 268.
? 259 *bis.* Lanius auriculatus, *P. L. S. Müll.*—S. F. VII, 117.
260. Lanius vittatus, *Valenc.*—Jerd. I, 405.
260 *bis.* Lanius collurio, *Lin.*—S. F. III, 463.
260 *ter.* Lanius colluroides, *Less.*—S. F. III, 90; VI, 203.
260 *quat.* Lanius magnirostris, *Less.*—S. F. VI, 203.
261. Lanius cristatus, *Lin.*—Jerd. I, 406.—S. F. VII, 269, 270.
261 *A. Lanius superciliosus*, *Lath.*—S. F. VII, 270.
261 *bis.* Lanius lucionensis, *Lin.*—S. F. I, 434; II, 199; IV, 393.
262. Lanius isabellinus, *Hemp. & Ehr.*—Jerd. I, 407.—S. F. I, 174; II, 331.
263. Tephrodornis pelvica, *Hodgs.*—Jerd. I, 409.—S. F. III, 92; VI, 205.
264. Tephrodornis sylvicola, *Jerd.*—Jerd. I, 409.—S. F. VI, 508.
265. Tephrodornis pondicerianus, *Gm.*—Jerd. I, 410.—S. F. I, 435.
265 *bis. Tephrodornis affinis*, *Bly.*—S. F. I, 434.
266. Muscitrea grisola, *Bly.*—Jerd. I, 411.—S. F. II, 201; V, 101.
266 *bis.* Muscitrea cyanea, *Hume.*—S. F. V, 101; VI, 207; VII, 318.
267. Hemipus picatus, *Sykes.*—Jerd. I, 412.—S. F. I, 435; III, 93; VI, 207.
? 267 *A.* Hemipus capitalis, *McClell.*—S. F. I, 435; III, 93; VI, 208.
267 *bis. Hemipus obscurus*, *Horsf.*—S. F. VI, 209.
268. Volvocivora sykesi, *Strickl.*—Jerd. I, 414.
268 *bis.* Volvocivora avensis, *Bly.*—S. F. III, 93; V, 205.
268 *ter. Volvocivora culminata*, *Hay.*—S. F. V, 495.
268 *quat.* Volvocivora neglecta, *Hume.*—S. F. V, 203.
268 *quint.* Volvocivora vidua, *Hartl.*—S. F. V, 206; VI, 508.
269. Volvocivora melaschista, *Hodgs.*—Jerd. I, 415.—S. F. V, 205.
269 *bis.* Volvocivora intermedia, *Hume.*—S. F. V, 205; VI, 210.
269 *bis A. Volvocivora melanura*, *Hartl.*—S. F. V, 206.
269 *ter.* Lalage terat, *Bodd.*—S. F. I, 66; II, 202.
269 *quat.* Hypocolius ampelinus, *Bp.*—S. F. III, 358; V, 349.
270. Graucalus macii, *Less.*—Jerd. I, 417.—S. F. II, 204, 400; VI, 210.
270 *bis. Graucalus layardi*, *Bly.*—S. F. II, 204, 400.
270 *ter.* Graucalus dobsoni, *Ball.*—S. F. I, 66; II, 206.
271. Pericrocotus speciosus, *Lath.*—Jerd. I, 419.—S. F. II, 208; V, 175, 192, 414.
271 *bis.* Pericrocotus andamanensis, *Tyt.*—S. F. II, 208; V, 175, 195.
271 *ter.* Pericrocotus elegans, *McClell.*—S. F. III, 95; V, 175, 194. [V, 175, 197.
272. Pericrocotus flammeus, *Forst.*—Jerd. I, 420.—S. F. III, 95; IV, 207, 394;
273. Pericrocotus brevirostris, *Vig.*—Jerd. I, 421.—S. F. V, 174, 187.
273 *bis.* Pericrocotus igneus, *Bly.*—S. F. V, 171, 175, 190.
? 273 *ter.* Pericrocotus neglectus, *Hume.*—S. F. V, 171, 175, 189.
273 *quat.* Pericrocotus flammifer, *Hume.*—S. F. III, 320*n.*; V, 175, 195; VI, 211.
274. Pericrocotus solaris, *Bly.*—Jerd. I, 422.—S. F. V, 174, 186.
275. Pericrocotus roseus, *Vieill.*—Jerd. I, 422.—S. F. IV, 317; V, 174, 184.
276. Pericrocotus peregrinus, *Lin.*—Jerd. I, 423.—S. F. I, 177; V, 174, 179.
277. Pericrocotus erythropygius, *Jerd.*—Jerd. I, 424.—S. F. V, 174, 177.
277 *bis.* Pericrocotus albifrons, *Jerd.*—S. F. III, 96; V, 174, 178.
277 *ter.* Pericrocotus immodestus, *Hume.*—S. F. V, 174, 177.
278. Buchanga atra, *Herm.*—Jerd. I, 427.—S. F. IV, 278; VI, 213; VII, 272.
279. Dicrurus annectans, *Hodgs.*—Jerd. I, 430. [213.
280. Buchanga longicaudata, *Hay.*—Jerd. I, 430.—S. F. III, 397; IV, 320; VI,

280 *bis*.—310]

? 280 *bis*. Buchanga pyrrhops, *Hodgs.*—S. F. III, 98 ; IV, 310 ; VI, 214.
280 *ter*. Buchanga leucophaea, *Vieill.*—S. F. VI, 214, *et seq.*
280 *quat*. Buchanga leucogenys, *Wald.*—S. F. II, 210 ; VI, 216.
281. Buchanga cærulescens, *Lin.*—Jerd. I, 432.
281 *bis*. Buchanga leucopygialis, *Bly.*—S. F. VII, 374.
281 *ter*. *Buchanga insularis*, *Sharpe.*—S. F. VII, 374.
282. Chaptia ænea, *Vieill.*—Jerd. I, 433.—S. F. VI, 218.
282 *bis*. Chaptia malayensis, *Hay.*—S. F. VI, 218.
283. Bhringa remifer, *Tem.*—Jerd. I, 434.—S. F. VI, 218.
283 *bis*. Dissemuroides dicruriformis, *Hume.*—S. F. I, 408 ; II, 211.
283 *ter*. Dissemuroides andamanensis, *Tyt.*—S. F. I, 66, 408 ; II, 211.
283 *quat*. Dissemuroides lophorinus, *Vieill.*—S. F. VII, 375.
284. Dissemurus grandis, *Gould.*—Jerd. I, 435.—S. F. II, 212 ; VI, 218, 221, 509.
285. Dissemurus paradiseus, *Lin.*—Jerd. I, 437.—S. F. II, 212 ; IV, 395 ; VI, 219.
286. Chibia hottentotta, *Lin.*—Jerd. I, 439.—S. F. VI, 222.
287. Artamus fuscus, *Vieill.*—Jerd. I, 441.—S. F. V, 383.
287 *bis*. Artamus leucorhynchus, *Lin.*—S. F. II, 214.
288. Muscipeta paradisi, *Lin.*—Jerd. I, 445.—S. F. III, 102 ; VII, 274.
289. Muscipeta affinis, *Hay.*—Jerd. I, 448.—S. F. III, 102 ; VI, 223.
289 *bis*. Philentoma pyrrhopterum, *Tem.*—S. F. VI, 223.
289 *ter*. Philentoma velatum, *Tem.*—S. F. VI, 224, 509.
290. Hypothymis azurea, *Bodd.*—Jerd. I, 450.—S. F. II, 217 ; III, 103.
290 *bis*. Hypothymis tytleri, *Beav.*—S. F. I, 68 ; II, 217.
291. Leucocerca albicollis, *Vieill.*—Jerd. I, 451.
292. Leucocerca aureola, *Vieill.*—Jerd. I, 452.—S. F. III, 104.
293. Leucocerca leucogaster, *Cuv.*—Jerd. I, 453.—S. F. III, 457.
293 *bis*. Leucocerca javanica, *Sparrm.*—S. F. I, 455 ; VI, 226.
294. Chelidorhynx hypoxantha, *Bly.*—Jerd. I, 455.
295. Culicicapa ceylonensis, *Swa.*—Jerd. I, 455.
296. Hemichelidon sibiricus, *Gm.*—Jerd. I, 458. [366 ; IV, 273 ; V, 470.
297. Alseonax latirostris, *Raffl.*—Jerd. I, 459.—S. F. II, 219 ; III, 104, 234, 276,
298. *Alseonax terricolor*, *Hodgs.*—Jerd. I, 460.—S. F. II, 219 ; III, 104, 234, 276,
299. Alseonax ferrugineus, *Hodgs.*—Jerd. I, 460. [366 ; IV, 273 ; V, 470.
299 *bis*. Butalis grisola, *Lin.*—S. F. III, 467 ; V, 220, 495.
? 299 *ter*. Butalis muttui, *Lay.*—S. F. III, 367 ; VII, 513.
300. Ochromela nigrorufa, *Jerd.*—Jerd. I, 462.
301. Stoporala melanops, *Vig.*—Jerd. I, 463.
302. Stoporala albicaudata, *Jerd.*—Jerd. I, 464.
302 *bis*. Stoporala sordida, *Wald.*—S. F. III, 401.
303. Cyornis unicolor, *Bly.*—Jerd. I, 465.—S. F. V, 489*n.* ; VII, 516.
304. Cyornis rubeculoides, *Vig.*—Jerd. I, 466.—S. F. VI, 227.
305. *Cyornis jerdoni*, *Bly.*—Jerd. I, 466.—S. F. III, 468.
306. Cyornis tickelli, *Bly.*—Jerd. I, 467.—S. F. III, 468.
307. Cyornis ruficaudus, *Swa.*—Jerd. I, 468.—S. F. IV, 396 ; V, 339.
307 *bis*. Cyornis mandellii, *Hume.*—S. F. II, 510 ; IV, 396 ; VII, 456, 514.
307 *ter*. Cyornis olivaceus, *Hume.*—S. F. V, 338 ; VI, 229.
308. Cyornis magnirostris, *Bly.*—Jerd. I, 469.
309. Cyornis pallipes, *Jerd.*—Jerd. I, 469.—S. F. IV, 397.
309 *bis*. Cyornis vividus, *Swinh.*—S. F. VI, 229.
310. Muscicapula superciliaris, *Jerd.*—Jerd. I, 470.—S. F. V, 415.

311. Muscicapula astigma, *Hodgs.*—Jerd. I, 471.
311 *bis*. Muscicapula ciliaris, *Hodgs.* apud *Bly.*—S. F. III, 411.
312. Muscicapula sapphira, *Tick.*—Jerd. I, 471.
313. Nitidula hodgsoni, *Moore.*—Jerd. I, 472.
314. Niltava sundara, *Hodgs.*—Jerd. I, 473.
315. Niltava macgrigoriæ, *Burt.*—Jerd. I, 475.—S. F. II, 475; VI, 231.
316. Niltava grandis, *Bly.*—Jerd. I, 476.—S. F. VI, 232.
317. Anthipes moniliger, *Hodgs.*—Jerd. I, 477.
317 *bis*. Anthipes submoniliger, *Hume.*—S. F. V, 105.
? 318. Siphia tricolor, *Hodgs.*—Jerd. I, 478.—S. F. V, 471.
? 318 *bis*. Siphia minuta, *Hume.*—S. F. VII, 376.
319. Siphia strophiata, *Hodgs.*—Jerd. I, 479.
320. Siphia leucomelanura, *Hodgs.*—Jerd. I, 479.—S. F. III, 235.
321. Siphia superciliaris, *Bly.*—Jerd. I, 480. [137; VI, 233, 510.
322. Siphia erythaca, *Bly. & Jerd.*—Jerd. I, 480.—S. F. II, 458; III, 392; V,
323. Erythrosterna albicilla, *Pall.*—Jerd. I, 481.—S. F. III, 105; V, 471; VI,
323 *bis*. Erythrosterna parva, *Bechst.*—Jerd. I, 481.—S. F. V, 471. [233.
323 *ter*. Erythrosterna hyperythra, *Cab.*—S. F. VII, 376.
? 324. Erythrosterna pusilla, *Bly.*—Jerd. I, 482.—S. F. III, 236; V, 471.
? 325. Erythrosterna acornaus, *Bly.*—Jerd. I, 483.—S. F. V, 471.
326. Erythrosterna maculata, *Tick.*—Jerd. I, 483.—S. F. III, 236*n*., 277.
327. Tesia castaneocoronata, *Burt.*—Jerd. I, 487.
328. Tesia cyaniventris, *Hodgs.*—Jerd. I, 487.
329. Pnoepyga squamata, *Gould.*—Jerd. I, 488.
330. Pnoepyga pusilla, *Hodgs.*—Jerd. I, 489.—S. F. VI, 234.
331. Pnoepyga caudata, *Bly.*—Jerd. I, 490.
332. Pnoepyga longicaudata, *Moore.*—Jerd. I, 490.
332 *bis*. Pnoepyga chocolatina, *G.-Aust. & Wald.*—S. F. IV, 218.
332 *ter*. Turdinulus roberti, *G.-Aust. & Wald.*—S. F. IV, 218; VI, 234.
333. Troglodytes nipalensis, *Hodgs.*—Jerd. I, 491.—S. F. IV, 492.
333 *bis*. Troglodytes neglectus, *Brooks.*—S. F. IV, 492.
334. Troglodytes punctatus, *Bly.*—Jerd. I, 492.—S. F. II, 525; V, 238.
335. Rimator malacoptilus, *Bly.*—Jerd. I, 493.
336. Brachypteryx nipalensis, *Hodgs.*—Jerd. I, 494.—S. F. VI, 236.
337. Brachypteryx hyperythra, *Jerd. & Bly.*—Jerd. I, 495.—S. F. V, 499.
338. Brachypteryx cruralis, *Bly.*—Jerd. I, 495.
338 *bis*. Brachypteryx palliseri, *Bly.*—S. F. VII, 377.
338 *ter*. Brachypteryx stellatus, *Gould.*—S. F. VII, 377.
339. Callene rufiventris, *Bly.*—Jerd. I, 496.
339 *bis*. Callene albiventris, *Fairb.*—S. F. V, 403*n*.; VII, 33, 35.
339 *ter*. *Callene hodgsoni*, *Moore.*—S. F. III, 411.
340. Callene frontalis, *Bly.*—Jerd. I, 496.
341. Hodgsonius phœnicuroides, *Hodgs.*—Jerd. I, 497.
342. Myiophoneus horsfieldi, *Vig.*—Jerd. I, 499.—S. F. III, 469; VII, 150, 467.
343. Myiophoneus temmincki, *Vig.*—Jerd. I, 500.—S. F. II, 331.
343 *bis*. Myiophoneus eugenii, *Hume.*—S. F. I, 475; V, 113*n*.; VI, 236.
343 *ter*. Arrenga blighi, *Holdsw.*—S. F. VII, 378.
344. Hydrornis nipalensis, *Hodgs.*—Jerd. I, 502.—S. F. I, 477.
344 *bis*. Hydrornis oatesi, *Hume.*—S. F. I, 477; VI, 237.
344 *ter*. Pitta cyanea, *Bly.*—S. F. III, 107; VI, 238.

344 *quat.*—372 *ter.*]

344 *quat.* Pitta cærulea, *Raffl.*—S. F. III, 321*n.*; VI, 238, 510.
345. Pitta brachyura, *Lin.*—Jerd. I, 503.—S. F. III, 298; V, 416.
345 *bis.* Pitta moluccensis, *P. L. S. Müll.*—S. F. III, 106; VI, 240.
345 *ter.* Pitta megarhyncha, *Schl.*—S. F. VI, 242.
? 345 *quat.* Pitta coccinea, *Eyt.*—S. F. VI, 511.
346. Pitta cucullata, *Hartl.*—Jerd. I, 504.—S. F. III, 109; VI, 243.
346 *bis.* Pitta gurneyi, *Hume.*—S. F. III, 296; VI, 244.
346 *ter.* Anthocincla phayrii, *Bly.*—S. F. III, 109; VI, 245.
347. Cinclus asiaticus, *Sws.*—Jerd. I, 506.
348. Cinclus cashmeriensis, *Gould.*—Jerd. I, 507.
349. Cinclus sordidus, *Gould.*—Jerd. I, 507.
349 *bis.* Cinclus pallasi, *Tem.*—S. F. VII, 378.
350. Zoothera monticola, *Vig.*—Jerd. I, 509.
350 *bis.* Zoothera marginata, *Bly.*—S. F. VI, 246.
351. Cyanocinclus cyanus, *Lin.*—Jerd. I, 511.—S. F. III, 112; VI, 247.
351 *bis.* Cyanocinclus solitarius, *P. L. S. Müll.*—S. F. III, 112; VI, 248.
351 *ter.* Monticola saxatilis, *Lin.*—S. F. VII, 379.
351 *quat.* *Petrocincla castaneicollis, Less.*—Jerd. I, 514.
352. Petrophila erythrogastra, *Vig.*—Jerd. I, 514.
353. Petrophila cinclorhyncha, *Vig.*—Jerd. I, 515.—S. F. IV, 398.
354. Geocichla cyanotis, *Jard. & Selb.*—Jerd. I, 517.—S. F. IV, 398.
? 354 *bis.* Geocichla layardi, *Wald.*—S. F. III, 401.
355. Geocichla citrina, *Lath.*—Jerd. I, 517.—S. F. VI, 250.
355 *bis.* Geocichla albogularis, *Bly.*—S. F. I, 69; II, 221, 495; IV, 289.
355 *ter.* *Geocichla innotata, Bly.*—S. F. I, 69; VI, 250.
355 *quat.* Geocichla tricolor, *Hume.*—S. F. III, 409.
356. Geocichla unicolor, *Tick.*—Jerd. I, 519.
357. Turdulus wardi, *Jerd.*—Jerd. I, 520.—S. F. IV, 244; V, 202.
? 358. Geocichla dissimilis, *Bly.*—Jerd. I, 521.
359. Merula nigropilea, *Lafr.*—Jerd. I, 523.
? 359 *bis.* Merula vulgaris, *Leach.*—S. F. VII, 380.
360. Merula simillima, *Jerd.*—Jerd. I, 524.
360 *bis.* Merula kinnisi, *Kel.*—S. F. VII, 36.
361. Merula boulboul, *Lath.*—Jerd. I, 525.
362. Merula albocincta, *Royle.*—Jerd. I, 526.
363. Merula castanea, *Gould.*—Jerd. I, 526.
364. Turdus ruficollis, *Pall.*—Jerd. I, 528.
365. Turdus atrogularis, *Tem.*—Jerd. I, 529.
366. Turdus dubius, *Bechst.*—Jerd. I, 530.
? 367. Turdus pilaris, *Lin.*—Jerd. I, 530.
368. Turdus viscivorus, *Lin.*—Jerd. I, 531.
369. Turdus iliacus, *Lin.*—Jerd. I, 532.
369 *bis.* Turdus obscurus, *Gm.*—S. F. I, 69; VI, 251.
369 *ter.* Turdus pallidus, *Gm.*—S. F. VI, 253.
369 *quat.* Turdus sibericus, *Pall.*—S. F. VI, 255, 513.
370. Oreocincla mollissima, *Bly.*—Jerd. I, 533.
371. Oreocincla dauma, *Lath.*—Jerd. I, 533.—S. F. III, 115; VI, 256.
372. Oreocincla nilgheriensis, *Bly.*—Jerd. I, 534.—S. F. IV, 399.
372 *bis.* *Oreocincla inframarginata, Bly.*—S. F. I, 70.
372 *ter.* Oreocincla spiloptera, *Bly.*—S. F. VII, 382.

372 *quat.* Oreocincla imbricata, *Lay.*—S. F. VII, 383.
? 372 *quint.* Oreocincla gregoriana, *Nev.*—S. F. I, 437; IV, 244.
373. Paradoxornis flavirostris, *Gould.*—Jerd. II, 4.—S. F. II, 457.
373 *bis.* Paradoxornis austeni, *Gould.*—S. F. III, 392.
374. Paradoxornis gularis, *Horsf.*—Jerd. II, 5.
375. Paradoxornis ruficeps, *Bly.*—Jerd. II, 5.—S. F. VI, 257.
376. Heteromorpha unicolor, *Hodgs.*—Jerd. II, 6.
377. Chleuasicus ruficeps, *Bly.*—Jerd. II, 7.—S. F. V, 499.
378. Suthora nipalensis, *Hodgs.*—Jerd. II, 8.
379. Suthora poliotis, *Bly.*—Jerd. II, 9.
380. Suthora fulvifrons, *Hodgs.*—Jerd. II, 9.
380 *bis.* Suthora munipurensis, *G.-Aust.*—S. F. IV, 216, 489; V, 138; VI, 258.
381. Conostoma æmodium, *Hodgs.*—Jerd. II, 10.
382. Grammatoptila striata, *Vig.*—Jerd. II, 11.
383. Thamnocataphus picatus, *Tick.*—Jerd. II, 13.
383 *bis.* Heterorhynchus humii, *Mand.*—S. F. I, 415; IV, 217; V, 238.
383 *ter.* Heterorhynchus roberti, *G.-Aust. & Wald.*—S. F. IV, 217; V, 238.
384. Gampsorhynchus rufulus, *Bly.*—Jerd. II, 14.
384 *bis.* Gampsorhynchus torquatus, *Hume.*—S. F. II, 446; VI, 258.
385. Pyctoris sinensis *Gm.*—Jerd. II, 15.
? 385 *bis.* Pyctoris nasalis, *Legge.*—S. F. VIII, 73.
386. Pyctoris longirostris, *Hodgs.*—Jerd. II, 16.—S. F. III, 397; VII, 153.
386 *bis.* Pyctoris altirostris, *Jerd.*—S. F. III, 115; IV, 504; V, 116, 249.
? 386 *ter.* Pyctoris griseigularis, *Hume.*—S. F. IV, 504; V, 116, 250.
387. Trichastoma abbotti, *Bly.*—Jerd. II, 17.—S. F. VI, 259.
387 *bis.* Trichastoma minus, *Hume.*—S. F. II, 535; III, 403; V, 59; VI, 259, 514.
387 *ter.* Trichastoma rubiginosum, *Wald.*—S. F. III, 404.
387 *quat. Trichastoma leucoproctum, Tweed.*—S. F. VII, 318.
388. Alcippe nipalensis, *Hodgs.*—Jerd. II, 18.
388 *bis.* Alcippe phayrii, *Bly.*—S. F. III, 116; V, 56, 60; VI, 260.
? 388 *ter.* Alcippe fusca, *G.-Aust.*—S. F. V, 54; VI, 261.
389. Alcippe poiocephala, *Jerd.*—Jerd. II, 18.
390. Alcippe atriceps, *Jerd.*—Jerd. II, 19.—S. F. IV, 485.
390 *bis.* Alcippe bourdilloni, *Hume.*—S. F. IV, 485; VII, 36.
390 *ter.* Alcippe nigrifrons, *Bly.*—S. F. IV, 485; VII, 383.
390 *quat.* Turdinus crispifrons, *Bly.*—S. F. V, 87; VI, 262.
390 *quint.* Turdinus brevicaudatus, *Bly.*—S. F. VI, 262; VII, 462.
390 *sex.* Turdinus guttatus, *Tick.*—S. F. V, 251; VI, 264.
390 *sept.* Turdinus garoensis, *G.-Aust.*—S. F. III, 393; VI, 278, 514.
391. Stachyris nigriceps, *Hodgs.*—Jerd. II, 21.—S. F. III, 117; VI, 264.
392. Stachyris pyrrhops, *Hodgs.*—Jerd. II, 21.
393. Stachyris ruficeps, *Bly.*—Jerd. II, 22.—S. F. VI, 265.
393 *bis.* Stachyris rufifrons, *Hume.*—S. F. I, 479; VI, 265.
394. Stachyris chrysea, *Hodgs.*—Jerd. II, 22.
394 *bis.* Stachyris assimilis, *Wald.*—S. F. V, 56; VI, 265.
395. Mixornis rubricapillus, *Tick.*—Jerd. II, 23.—S. F. III, 118; VI, 266.
395 *bis.* Mixornis gularis, *Horsf.*—S. F. VI, 266.
396. Timalia bengalensis, *G.-Aust.*—Jerd. II, 24.—S. F. III, 118; VI, 267.
396 *bis.* Cyanoderma erythropterum, *Bly.*—S. F. III, 322*n.*; VI, 269.
396 *ter.* Malacopterum magnum, *Eyt.*—S. F. VI, 270.

396 *quat.*—414]

396 *quat.* Malacopterum ferruginosum, *Bly.*—S. F. VI, 273.
396 *quint.* Malacopterum magnirostris, *Moore.*—S. F. VI, 274.
396 *sex.* Drymocataphus nigricapitatus, *Eyt.*—S. F. VI, 275.
397. Dumetia hyperythra, *Frankl.*—Jerd. II, 26.
398. Dumetia albogularis, *Bly.*—Jerd. II, 26.—S. F. III, 471 ; IV, 399.
399. Pellorneum ruficeps, *Sws.*—Jerd. II, 27.—S. F. I, 298 ; VI, 277.
399 *bis.* Pellorneum nipalensis, *Hodgs.*—S. F. I, 298*n*.
399 *ter.* Pellorneum tickelli, *Bly.*—S. F. I, 299*n*. ; IV, 406 ; VI, 277, 514.
399 *ter A.* Pellorneum ignotum, *Hume.*—S. F. V, 334 ; VII, 143.
399 *quat.* Pellorneum palustre, *Jerd.*—S. F. I, 4.
399 *quint.* Pellorneum fuscocapillum, *Bly.*—S. F. I, 299*n*. [VI, 278.
399 *sex.* Pellorneum subochraceum, *Swinh.*—S. F. I, 298 ; III, 120 ; IV, 406 ;
399 *sept. Pellorneum pectoralis, G.-Aust.*—S. F. V, 340.
400. Pomatorhinus ruficollis, *Hodgs.*—Jerd. II, 29.
401. Pomatorhinus ferruginosus, *Bly.*—Jerd. II, 29.—S. F. VI, 279.
401 *bis.* Pomatorhinus phayrii, *Bly.*—S. F. VI, 279.
401 *ter.* Pomatorhinus ochraceiceps, *Wald.*—S. F. III, 282 ; VI, 281. [514.
401 *quat.* Pomatorhinus albigularis, *Bly.*—S. F. III, 404 ; V, 136 ; VI, 280, 281,
401 *quint.* Pomatorhinus stenorhynchus, *G.-Aust.*—S. F. V, 343.
402. Pomatorhinus schisticeps, *Hodgs.*—Jerd. II, 29.—S. F. III, 121.
403. Pomatorhinus leucogaster, *Gould.*—Jerd. II, 30.—S. F. VI, 282, 284.
403 *bis.* Pomatorhinus olivaceus, *Bly.*—S. F. V, 137 ; VI, 283.
403 *ter. Pomatorhinus nuchalis, Wald.*—S. F. VI, 284.
404. Pomatorhinus horsfieldi, *Sykes.*—Jerd. II, 31.
404 *bis.* Pomatorhinus melanurus, *Bly.*—S. F. I, 437 ; VII, 383.
404 *ter.* Pomatorhinus obscurus, *Hume.*—S. F. I, 7 ; III, 471.
404 *quat.* Pomatorhinus macclellandi, *Jerd.*—S. F. III, 412.
405. Pomatorhinus erythrogenys, *Vig.*—Jerd. II, 31.
405 *bis.* Orthorhinus hypoleucus, *Bly.*—S. F. V, 31.
? 405 *ter.* Orthorhinus inglisi, *Hume.*—S. F. V, 33.
405 *quat.* Orthorhinus tickelli, *Hume.*—S. F. V, 32 ; VI, 285.
406. Xiphoramphus superciliaris, *Bly.*—Jerd. II, 33.
407. Garrulax leucolophus, *Hardw.*—Jerd. II, 35.
407 *bis.* Garrulax belangeri, *Less.*—S. F. III, 122 ; VI, 286.
408. Garrulax cærulatus, *Hodgs.*—Jerd. II, 36.
408 *A.* Garrulax subcærulatus, *Hume.*—S. F. VII, 140.
408 *bis.* Garrulax strepitans, *Tick.*—S. F. VI, 288.
408 *ter.* Garrulax chinensis, *Scop.*—S. F. VI, 289.
408 *quat.* Garrulax nuchalis, *G.-Aust.*—S. F. V, 58.
409. Garrulax delesserti, *Jerd.*—Jerd. II, 37.—S. F. IV, 399.
409 *bis.* Garrulax cinereifrons, *Bly.*—S. F. VII, 384.
409 *ter.* Garrulax gularis, *McClell.*—S. F. III, 412.
409 *quat.* Garrulax galbanus, *G.-Aust.*—S. F. III, 394.
409 *quint.* Garrulax sannio, *Swinh.*—S. F. III, 393 ; IV, 502.
410. Garrulax ruficollis, *Jard. & Selb.*—Jerd. II, 38.
411. Garrulax albogularis, *Gould.*—Jerd. II, 38.
412. Garrulax pectoralis, *Gould.*—Jerd. II, 39.—S. F. III, 122 ; VI, 291.
413. Garrulax moniliger, *Hodgs.*—Jerd. II, 40.—S. F. III, 123 ; VI, 291.
413 *bis.* Garrulax merulinus, *Bly.*—S. F. III, 394.
414. Garrulax ocellatus, *Vig.*—Jerd. II, 41.

415. Trochalopterum erythrocephalum, *Vig.*—Jerd. II, 43.
415 *bis*. Trochalopterum ruficapillum, *Bly.*—S. F. VII, 385.
415 *ter*. Trochalopterum melanostigma, *Bly.*—S. F. VI, 291.
416. Trochalopterum chrysopterum, *Gould.*—Jerd. II, 43.
417. Trochalopterum subunicolor, *Hodgs.*—Jerd. II, 44.
417 *bis*. Trochalopterum austeni, *Jerd.*—S. F. III, 414.
418. Trochalopterum variegatum, *Vig.*—Jerd. II, 45.—S. F. VII, 457.
418 *bis*. Trochalopterum simile, *Hume.*—S. F. III, 407; VII, 457.
418 *ter*. Trochalopterum cineraceum, *G.-Aust.*—S. F. III, 395.
419. Trochalopterum affine, *Hodgs.*—Jerd. II, 45.
420. Trochalopterum squamatum, *Gould.*—Jerd. II, 46.
421. Trochalopterum rufigulare, *Gould.*—Jerd. II, 47.—S. F. VII, 155.
422. Trochalopterum phœniceum, *Gould.*—Jerd. II, 48.
423. Trochalopterum cachinnans, *Jerd.*—Jerd. II, 48.
423 *bis*. Trochalopterum fairbanki, *Blanf.*—S. F. III, 413; V, 404; VII, 36.
424. Trochalopterum jerdoni, *Bly.*—Jerd. II, 49.—S. F. V, 404.
425. Trochalopterum lineatum, *Vig.*—Jerd. II, 50.
425 *bis*. Trochalopterum virgatum, *G.-Aust.*—S. F. III, 395.
426. Trochalopterum imbricatum, *Hodgs.*—Jerd. II, 51.
427. Actinodura egertoni, *Gould.*—Jerd. II, 52.—S. F. VII, 153.
427 *bis*. Actinodura waldeni, *G.-Aust.*—S. F. III, 396.
427 *ter*. Actinodura ramsayi, *Wald.*—S. F. III, 404.
427 *quat*. Actinodura oglii, *G.-Aust.*— S. F. V, 341.
428. Actinodura nipalensis, *Hodgs.*—Jerd. II, 53.—S. F. IV, 219.
428 *bis*. Actinodura daflaensis, *G.-Aust.*—S F. IV, 219.
429. Malacias capistratus, *Vig.*—Jerd. II, 54.
429 *bis*. Malacias gracilis, *McClell.*—S. F. III, 413.
429 *ter*. Malacias pulchellus, *G.-Aust.*—S. F. III, 281.
429 *quat*. Malacias melanoleucus, *Tick.*—S. F. VI, 293.
430. Sibia picaoides, *Hodgs.*—Jerd. II, 55.—S. F. VI, 294.
431. Acanthoptila nipalensis, *Hodgs.*—Jerd. II, 57.—S. F. VII, 459.
431 *bis*. Malacocercus pellotis, *Hodgs.*—S. F. VII, 459.
432. Malacocercus terricolor, *Hodgs.*—Jerd. II, 59.
432 *bis*. Malacocercus striatus, *Sws.*—S. F. VII, 385.
433. Malacocercus griseus, *Lath.*—Jerd. II, 60.—S. F. IV, 456.
434. Malacocercus malabaricus, *Jerd.*—Jerd. II, 62.
435. Malacocercus somervillii, *Sykes.*—Jerd. II, 63.
436. Argya malcolmi, *Sykes.*—Jerd. II, 64.
437. Layardia subrufa, *Jerd.*—Jerd. II, 66.
437 *bis*. Layardia rufescens, *Bly.*—S. F. VII, 386.
438. Chatarrhæa caudata, *Dum.*—Jerd. II, 67.
? 438 *bis*. Chatarrhæa huttoni, *Bly.*—S. F. V, 337.
? 438 *ter*. Chatarrhæa eclipes, *Hume.*—S. F. V, 337.
439. Chatarrhæa earlii, *Bly.*—Jerd. II, 68.—S. F. I, 180, 420; III, 124.
439 *bis*. Chatarrhæa gularis, *Bly.*—S. F. III, 124.
440. Megalurus palustris, *Horsf.*—Jerd. II, 70.—S. F. VI, 295.
441. Chætornis striatus, *Jerd.*—Jerd. II, 72.—S. F. V, 209.
442. Schœnicola platyurus, *Jerd.*—Jerd. II, 73.—S. F. VII, 37.
443. Laticilla burnesi, *Bly.*—Jerd. II, 74.—S. F. I, 180.
443 *bis*. Laticilla cinerascens, *Wald.*— S. F. III, 280.

444—462 *bis.*]

444. Hypsipetes psaroides, *Vig.*—Jerd. II, 77.—S. F. VI, 295.
445. *Hypsipetes nilgheriensis, Jerd.*—Jerd. II, 78.—S. F. IV, 400.
446. Hypsipetes ganesa, *Sykes.*—Jerd. II, 78.—S. F. IV, 400; VI, 295.
446 *bis.* Hypsipetes concolor, *Bly.*—S. F. V, 109; VI, 295.
447. Hypsipetes macclellandi, *Horsf.*—Jerd. II, 79.—S. F. VI, 298.
447 *bis.* Hypsipetes tickelli, *Bly.*—S. F. VI, 296, 298.
447 *ter.* Hypsipetes malaccensis, *Bly.*—S. F. VI, 298.
447 *quat.* Hypsipetes nicobariensis, *Horsf. & Moore.*—S. F. I, 70; II, 223; VI, 298.
448. Hemixus flavala, *Hodgs.*—Jerd. II, 80.—S. F. V, 111.
448 *bis.* Hemixus hildebrandi, *Hume.*—S. F. II, 508; V, 111.
448 *ter.* Hemixus davisoni, *Hume.*—S. F. V, 111.
449. Alcurus striatus, *Bly.*—Jerd. II, 81.—S. F. VI, 299.
449 *bis.* Trachycomus ochrocephalus, *Gm.*—S. F. I, 455; VI, 300.
450. Criniger ictericus, *Strickl.*—Jerd. II, 82.
451. Criniger flaveolus, *Gould.*—Jerd. II, 83.—S. F. I, 478.
451 *bis.* Criniger griseiceps, *Hume.*—S. F. I, 478; VI, 300.
451 *ter.* Criniger gutturalis, *S. Müll.*—S. F. VI, 301, 515.
451 *quat.* Criniger phæocephalus, *Hartl.*—S. F. VI, 302.
451 *quint.* Criniger tristis, *Bly.*—S. F. VI, 303.
451 *sex.* Tricholestes criniger, *Hay.*—S. F. VI, 304.
452. Ixus luteolus, *Less.*—Jerd. II, 84.
452 *bis.* Ixus flavescens, *Bly.*—S. F. VI, 306.
452 *ter.* Ixus finlaysoni, *Strickl.*—S. F. VI, 307.
452 *quat.* Ixus davisoni, *Hume.*—S. F. III, 301, 403; IV, 498.
452 *quint.* Ixus blanfordi, *Jerd.*—S. F. III, 125.
452 *sex.* Otocompsa analis, *Horsf.*—S. F. I, 457; II, 333; VI, 308.
452 *sept.* Ixus plumosus, *Bly.*—S. F. III, 322*n.*; VI, 309.
452 *oct.* Ixus brunneus, *Bly.*—S. F. III, 322*n.*; VI, 310, 312.
452 *nov.* Ixus pusillus, *Salvad.*—S. F. VI, 312.
452 *dec.* Iole viridescens, *Bly.*—S. F. VI, 315, 515.
453. Ixus xantholæmus, *Jerd.*—Jerd. II, 85.
453 *bis.* Spizixus canifrons, *Bly.*—S. F. VII, 386.
454. Kelaartia pencillata, *Bly.*—Jerd. II, 86.
455. Rubigula gularis, *Gould.*—Jerd. II, 87.
455 *bis.* Rubigula melanictera, *Gm.*—S. F. VII, 387.
456. Rubigula flaviventris, *Tick.*—Jerd. II, 88.—S. F. VI, 317.
457. Brachypodius poiocephalus, *Jerd.*—Jerd. II, 89.
457 *bis.* Brachypodius melanocephalus, *Gm.*—S. F. IV, 324; VI, 318.
457 *ter.* Brachypodius fuscoflavescens, *Hume.*—S. F. I, 71, 297.
?457 *quat.* Brachypodius cinereiventris, *Bly.*—S. F. VI, 319.
457 *quint.* Ixidia cyaniventris, *Bly.*—S. F. VI, 320.
458. Otocompsa leucogenys, *J. E. Gr.*—Jerd. II, 90.
459. Otocompsa leucotis, *Gould.*—Jerd. II, 91.—S. F. I, 181.
460. Otocompsa emeria, *Lin.*—Jerd. II, 92.—S. F. II, 225; VI, 321.
460 *bis.* Otocompsa fuscicaudata, *Gould.*—S. F. I, 309.
460 *ter. Otocompsa monticola, McClell.*—S. F. I, 309; III, 126.
461. Molpastes pygæus, *Hodgs.*—Jerd. II, 93.
?461 *bis.* Molpastes intermedius, *Hay.*—S. F. III, 127.
462. Molpastes hæmorrhous, *Gm.*—Jerd. II, 94.—S. F. III, 127.
462 *bis.* Molpastes nigropileus, *Bly.*—S. F. III, 126*n.*; VI, 321.

462 *ter.* Molpastes atricapillus, *Vieill.*—S. F. VI, 322.
463. Phyllornis jerdoni, *Bly.*—Jerd. II, 97.
463 *bis.* Phyllornis chlorocephalus, *Wald.*—S. F. III, 127; VI, 323.
463 *ter.* Phyllornis javensis, *Horsf.*—S. F. VI, 324.
463 *quat.* Phyllornis cyanopogon, *Tem.*—S. F. VI, 325.
464. Phyllornis malabaricus, *Gm.*—Jerd. II, 98.
465. Phyllornis aurifrons, *Tem.*—Jerd. II, 99.—S. F. III, 129; VI, 326.
466. Phyllornis hardwickii, *Jard. & Selb.*—Jerd. II, 100. [420 *et seq.*
467. *Iora zeylonica*, *Gm.*—Jerd. II, 101.—S. F. I, 438; II, 459; III, 129; V,
468. Iora tiphia, *Lin.*—Jerd. II, 103.—S. F. I, 438; II, 459; III, 129; V, 428.
468 *bis.* Iora nigrolutea, *Marsh.*—S. F. IV, 410; V, 134, 441; VII, 454.
468 *ter.* Iora viridissima, *Tem.*—S. F. V, 427; VI, 327.
468 *quat.* Iora lafresnayii, *Hartl.*—S. F. V, 423; VI, 516.
469. Irena puella, *Lath.*—Jerd. II, 105.—S. F. III, 130.
470. Oriolus kundoo, *Sykes.*—Jerd. II, 107.
470 *bis.* Oriolus galbula, *Lin.*—S. F. I, 182; VII, 387.
471. Oriolus indicus, *Jerd.*—Jerd. II, 109.—S. F. II, 477; III, 132; VI, 329.
471 *bis.* Oriolus andamanensis, *Tyt.*—S. F. I, 72; II, 226; III, 132.
471 *ter.* Oriolus tenuirostris, *Bly.*—S. F. III, 131; VI, 329.
471 *quat.* Oriolus macrurus, *Bly.*—S. F. I, 71; II, 228; III, 132. [133; VI, 330.
472. Oriolus melanocephalus, *Lin.*—Jerd. II, 110.—S. F. I, 439; II, 230; III,
473. *Oriolus ceylonensis*, *Bp.*—Jerd. II, 111.—S. F. I, 439.
473 *bis.* Oriolus xanthonotus, *Horsf.*—S. F. VI, 330.
474. Oriolus trailli, *Vig.*—Jerd. II, 112.
475. Copsychus saularis, *Lin.*—Jerd. II, 114.—S. F. II, 230; VI, 332.
475 *bis.* Copsychus musicus, *Raffl.*—S. F. I, 458; VI, 332.
476. Cercotrichas macrura, *Gm.*—Jerd. II, 116.—S. F. VI, 333.
476 *bis.* Cercotrichas albiventris, *Bly.*—S. F. I, 73; II, 232.
477. Myiomela leucura, *Hodgs.*—Jerd. II, 118.—S. F. VI, 334.
478. Grandala cœlicolor, *Hodgs.*—Jerd. II, 119.
479. Thamnobia fulicata, *Lin.*—Jerd. II, 121.—S. F. I, 182.
480. Thamnobia cambaiensis, *Lath.*—Jerd. II, 122.—S. F. I, 182.
481. Pratincola caprata, *Lin.*—Jerd. II, 123.
482. Pratincola bicolor, *Sykes.*—Jerd. II, 124. [VI, 334.
483. Pratincola indicus, *Bly.*—Jerd. II, 124.—S. F. III, 239*n.*, 429; V, 131, 241;
484. Pratincola leucurus, *Bly.*—Jerd. II, 126.—S. F. I, 183. [VII, 454, 519.
485. Pratincola insignis, *Hodgs.*—Jerd. II, 127.—S. F. III, 330; V, 132, 496;
485 *bis.* Pratincola macrorhynchus, *Stol.*—S. F. IV, 40*n.*; V, 132, 239, 244; VII, 55.
486. Pratincola ferreus, *Hodgs.*—Jerd. II, 127.
487. Oreicola jerdoni, *Bly.*—Jerd. II, 128.
488. Saxicola opistholeucus, *Strickl.*—Jerd. II, 130.
489. Saxicola picatus, *Bly.*—Jerd. II, 131.—S. F. I, 3, 184.
489 *bis.* Saxicola alboniger, *Hume.*—S. F. I, 2, 185.
490. Saxicola morio, *Hemp. & Ehr.*—Jerd. II, 131.—S. F. I, 3, 184.
490 *bis.* Saxicola monachus, *Rüpp.*—S. F. I, 186.
490 *ter.* Saxicola leucomelas, *Pall.*—S. F. I, 185; VII, 118.
491. Saxicola isabellinus, *Rüpp.*—Jerd. II, 132.—S. F. I, 187.
491 *bis.* Saxicola kingi, *Hume.*—S. F. I, 187; VII, 57.
492. Saxicola deserti, *Rüpp.*—Jerd. II, 132.—S. F. I, 188.
492 *bis.* Saxicola hendersoni, *Hume.*—S. F. II, 526; VII, 388.

492 *ter*.—524]

492 *ter*. Aedon familiaris, *Ménétr.*—S. F. III, 476.
493. *Cercomela melanura*, *Rüpp.*—Jerd. II, 133.—S. F. I, 188.
494. Cercomela fusca, *Bly.*—Jerd. II, 134.
495. *Ruticilla phœnicura*, *Lin.*—Jerd. II, 136.
496. *Ruticilla phœnicuroides*, *Moore.*—Jerd. II, 136.—S. F. I, 189; II, 330; V, 36.
497. Ruticilla rufiventris, *Vieill.*—Jerd. II, 137.—S. F. I, 189; II, 330; V, 36.
497 *bis*. *Ruticilla erythroprocta*, *Gould.*—S. F. I, 189; II, 330; V, 36.
497 *ter*. Ruticilla mesoleuca, *Hemp. & Ehr.*—S. F. VII, 114.
498. Ruticilla hodgsoni, *Moore.*—Jerd. II, 138.—S. F. VII, 114, *et seq.*
498 *bis*. Ruticilla erythronota, *Eversm.*—S. F. VII, 389.
499. Ruticilla erythrogastra, *Güld.*—Jerd. II, 139.
500. Ruticilla aurorea, *Pall.*—Jerd. II, 139.
501. Ruticilla schisticeps, *Hodgs.*—Jerd. II, 140.—S. F. IV, 497.
502. *Ruticilla nigrogularis*, *Hodgs. in Moore.*—Jerd. II, 140.—S. F. IV, 497.
503. Ruticilla frontalis, *Vig.*—Jerd. II, 141.
504. Ruticilla cæruleocephala, *Vig.*—Jerd. II, 141.—S. F. VII, 391.
505. Rhyacornis fuliginosus, *Vig.*—Jerd. II, 142.
506. Chimarrornis leucocephalus, *Vig.*—Jerd. II, 143.
507. Larvivora superciliaris, *Jerd.*—Jerd. II, 145.—S. F. III, 240.
507 *bis*. Larvivora cyane, *Pall.*—S. F. VI, 335.
508. Nemura cyanura, *Pall.*—Jerd. II, 146.
509. Nemura hyperythra, *Bly.*—Jerd. II, 147.
510. Tarsiger superciliaris, *Hodgs.*—Jerd. II, 148.
511. Tarsiger chryseus, *Hodgs.*—Jerd. II, 149.
512. Calliope camtschatkensis, *Gm.*—Jerd. II, 150.—S. F. VI, 337; VII, 478.
513. Calliope pectoralis, *Gould.*—Jerd. II, 150.
514. Cyanecula suecica, *Lin.*—Jerd. II, 152.—S. F. VII, 391.
514 *bis*. Cyanecula wolfii, *Brehm.*—S. F. VII, 391.
514 *ter*. Daulias golzii, *Cab.*—S. F. IV, 500.
515. Acrocephalus stentorius, *Hemp. & Ehr.*—Jerd. II, 154.—S. F. II, 330; III, [369.
515 *bis*. Acrocephalus orientalis, *Tem. & Schl.*—S. F. III, 337; VI, 338.
516. Acrocephalus dumetorum, *Bly.*—Jerd. II, 155.—S. F. VII, 183.
517. Acrocephalus agricolus, *Jerd.*—Jerd. II, 156.—S. F. III, 339.
517 *bis*. Acrocephalus macrorhynchus, *Hume.*—S. F. III, 405.
517 *ter*. Acrocephalus bistrigiceps, *Swinh.*—S. F. VI, 338.
518. Arundinax ædon, *Pall.*—Jerd. II, 157.—S. F. II, 234; VI, 339.
518 *bis*. Lusciniola melanopogon, *Tem.*—S. F. I, 190.
518 *ter*. Bradyptetus cettii, *Marm.*—S. F. I, 192; II, 520.
519. Schœnicola affinis, *Hodgs.*—Jerd. II, 158.—S. F. III, 286; VII, 38.
519 *bis*. Schœnicola brunneipectus, *Bly.*—S. F. III, 284; VII, 38, 394.
? 519 *ter*. Schœnicola cyanocarpus, *Hume.*—S. F. III, 409; VII, 38, 461.
519 *quat*. Schœnicola major, *Brooks.*—S. F. III, 242*n.*; VII, 38.
520. Locustella hendersoni, *Cass.*—Jerd. II, 159.—S. F. VI, 340, 342.
520 *bis*. Locustella lanceolata, *Tem.*—S. F. I, 409; VI, 339.
521. Locustella certhiola, *Pall.*—Jerd. II, 160.—S. F. VI, 340.
522. Tribura luteoventris, *Hodgs.*—Jerd. II, 161.—S. F. III, 285.
522 *bis*. Tribura erythrogenys, *Hume.*—S. F. III, 410.
522 *ter*. Urosphena squamiceps, *Swinh.*—S. F. VI, 343.
523. Horornis fulviventris, *Hodgs.*—Jerd. II, 162.—S. F. IV, 497.
524. Schœnicola flaviventris, *Hodgs.*—Jerd. II, 162.—S. F. VII, 38.

525. Phylloscopus fuliginiventris, *Hodgs.*—Jerd. II, 162.
526. Schœnicola fortipes, *Hodgs.*—Jerd. II, 162.—S. F. VII, 38.
527. Horeites brunneifrons, *Hodgs.*—Jerd. II, 163.
527 *bis.* Horeites pallidus, *Brooks.*—S. F. III, 241*n.*
527 *ter.* Horeites brunnescens, *Hume.*—S. F. III, 410; IV, 497.
527 *quat.* Horeites pallidipes, *Blanf.*—S. F. V, 57; VI, 344.
528. *Horeites policaris, Hodgs.*—Jerd. II, 163.
529. Horeites major, *Hodgs.*—Jerd. II, 164.
530. Orthotomus sutorius, *Forst.*—Jerd. II, 165.—S. F. III, 135; VII, 507.
530 *bis.* Orthotomus atrigularis, *Tem.*—S. F. II, 507; III, 325; VI, 345.
530 *ter.* Orthotomus ruficeps, *Less.*—S. F. VI, 346.
531. Orthotomus coronatus, *Jerd. & Bly.*—Jerd. II, 168.—S. F. VI, 346.
532. Prinia flaviventris, *Deless.*—Jerd. II, 169.—S. F. VI, 347.
? 533. Prinia adamsi, *Jerd.*—Jerd. II, 170.
534. Prinia socialis, *Sykes.*—Jerd. II, 170.—S. F. III, 479; IV, 497.
? 535. Prinia stewarti, *Bly.*—Jerd. II, 171.—S. F. III, 480; IV, 497; VII, 320.
? 535 *bis.* Prinia poliocephala, *A. Anders.*—S. F. VII, 319.
536. Prinia gracilis, *Frankl.*—Jerd. II, 172.—S. F. III, 136; VII, 217*n.*
? 536 *bis.* Prinia rufescens, *Bly.*—S. F. III, 136.
? 536 *ter.* Prinia rufula, *G.-Aust.*—S. F. III, 397; VI, 348.
? 536 *quat.* Prinia humilis, *Hume.*—S. F. VII, 394.
537. Prinia cinereocapilla, *Hodgs.*—Jerd. II, 172.—S. F. III, 242; VII, 320.
? 538. Prinia hodgsoni, *Bly.*—Jerd. II, 173.—S. F. III, 136, 203; VII, 217*n.*
538 *bis.* Prinia beavani, *Wald.*—S. F. III, 136; VI, 349. [V, 90; VI, 349.
539 Cisticola cursitans, *Frankl.*—Jerd. II, 174.—S. F. I, 439; III, 137, 397;
539 *bis. Cisticola munipurensis, G.-Aust.*—S. F. III, 397; V, 90.
539 *ter.* Cisticola melanocephalus, *Anders.*—S. F. III, 398; V, 93, 350.
540. Cisticola erythrocephalus, *Jerd.*—Jerd. II, 175.—S. F. V, 94, 351, 406.
541. Cisticola tytleri, *Bly.*—Jerd. II, 176.—S. F. V, 93, 350.
541 *bis. Cisticola homalurus, Bly.*—S. F. V, 93, 350.
542. Graminicola bengalensis, *Jerd.*—Jerd. II, 177. [407; VII, 468.
543. Drymœca inornata, *Sykes.*—Jerd. II, 178.—S. F. III, 295, 483; IV, 229,
543 *bis.* Drymœca fusca, *Hodgs.*—S. F. VII, 395.
543 *ter.* Drymœca blanfordi, *Wald.*—S. F. V, 57.
544. *Drymœca longicaudata, Tick.*—Jerd. II, 180.—S. F. IV, 407; VII, 468.
544 *bis.* Drymœca rufescens, *Hume.*—S. F. I, 437; II, 453; III, 408; VII, 218.
544 *ter.* Drymœca jerdoni, *Bly.*—S. F. I, 437; II, 453.
544 *quat.* Drymœca extensicauda, *Swinh.*—S. F. III, 340.
545. Drymœca sylvatica, *Jerd.*—Jerd. II, 181.
? 545 *bis.* Drymœca insignis, *Hume.*—S. F. I, 10; VII, 218.
545 *ter.* Drymœca valida, *Bly.*—S. F. VII, 395.
546. Drymœca neglecta, *Jerd.*—Jerd. II, 182.
547. Suya crinigera, *Hodgs.*—Jerd. II, 183.—S. F. II, 507; VII, 2 *et seq.*
547 *bis.* Suya superciliaris, *Anders.*—S. F. VI, 350; VII, 4.
548. *Suya fuliginosa, Hodgs.*—Jerd. II, 183.—S. F. VII, 2.
549. Suya atrigularis, *Moore.*—Jerd. II, 184.—S. F. VII, 3.
549 *bis.* Suya khasiana, *G.-Aust.*—S. F. V, 59; VII, 4.
549 *ter. Suya gangetica, Jerd.*—S. F. V, 138; VII, 6.
549 *quat.* Suya erythropleura, *Wald.*—S. F. V, 58; VII, 5.
549 *quint.* Blanfordius striatulus, *Hume.*—S. F. I, 300.

550—576 *bis.*]

550. Burnesia gracilis, *Licht.*—Jerd. II, 185.—S. F. V, 496.
550 *bis.* Scotocerca inquieta, *Rüpp.*—S. F. I, 200; II, 329.
551. Franklinia buchanani, *Bly.*—Jerd. II, 186.
552. Neornis flavolivaceus, *Hodgs.*—Jerd. II, 188.
? 552 *bis.* Neornis assimilis, *Hodgs.*—S. F. VI, 351.
? 552 *ter.* Neornis albiventris, *G.-Aust.*—S. F. V, 55.
553. Hypolais rama, *Sykes.*—Jerd. II, 189.—S. F. VII, 183, 396.
553 *bis.* Hypolais caligata, *Licht.*—S. F. VII, 183, 396.
553 *ter.* Hypolais pallida, *Hemp. & Ehr.*—S. F. VII, 398, 504.
? 553 *quat.* Hypolais languida, *Hemp. & Ehr.*—S. F. VII, 398.
554. Phylloscopus tristis, *Bly.*—Jerd. II, 190.—S. F. I, 195.
554 *bis.* Phylloscopus neglectus, *Hume.*—S. F. I, 195.
555. Phylloscopus fuscatus, *Bly.*—Jerd. II, 191.
556. Phylloscopus magnirostris, *Bly.*—Jerd. II, 191.—S. F. III, 243.
556 *bis.* Phylloscopus borealis, *Blas.*—S. F. VI, 352.
556 *ter.* Phylloscopus schwarzi, *Radde.*—S. F. II, 505; V, 134; VI, 353.
556 *quat.* Phylloscopus tenellipes, *Swinh.*—S. F. IV, 276; VI, 517 *nec* 354 *err.*
557. *Phylloscopus trochilus, Lin.*—Jerd. II, 192.—S. F. I, 101.
558. Phylloscopus lugubris, *Bly.*—Jerd. II, 192.
? 558 *bis.* Phylloscopus plumbeitarsus, *Swinh.*—S. F. VI, 355; VII, 454, 508.
558 *ter. Phylloscopus seebohmi, Hume.*—S. F. V, 335; VI, 356.
559. Phylloscopus nitidus, *Bly.*—Jerd. II, 193.
560. Phylloscopus viridanus, *Bly.*—Jerd. II, 193.—S. F. III, 244 *n.*; VII, 508.
560 *bis.* Phylloscopus tytleri, *Brooks.*—S. F. III, 243*n.*, 279.
561. Phylloscopus affinis, *Tick.*—Jerd. II, 194.
562. Phylloscopus indicus, *Jerd.*—Jerd. II, 194.
563. Reguloides occipitalis, *Jerd.*—Jerd. II, 196.
563 *bis* Reguloides coronatus, *Tem. & Schl.*—S. F. VI, 356.
564. Reguloides trochiloides, *Sund.*—Jerd. II, 196.
564 *bis.* Reguloides flavo-olivaceus, *Hume.*—S. F. V, 330, 504; VI, 358.
564 *ter. Reguloides fulvoventer, G.-Aust.*—S. F. III, 398.
565. Reguloides superciliosus, *Gm.*—Jerd. II, 197.—S. F. VII, 128, 236, 475.
565 *bis.* Reguloides humii, *Brooks.*—S. F. VII, 131, 236, 475.
566. Reguloides proregulus, *Pall.*—Jerd. II, 197.
566 *bis.* Reguloides subviridis, *Brooks.*—S. F. IV, 494; VII, 477.
566 *ter.* Reguloides chloronotus, *Hodgs.*—S. F. I, 494; IV, 505; VII, 399.
567. Reguloides viridipennis, *Bly.*—Jerd. II, 198.—S. F. V, 330; VII, 453.
568. Reguloides erochrous, *Hodgs.*—Jerd. II, 199.
569. Cryptolopha burkii, *Burt.*—Jerd. II, 199.—S. F. III, 140.
569 *bis.* Cryptolopha tephrocephala, *Anders.*—S. F. III, 140; VI, 158.
570. Abrornis cantator, *Tick.*—Jerd. II, 200.
571. Abrornis schisticeps, *Hodgs.*—Jerd. II, 201.
572. Abrornis xanthoschistus, *Hodgs.*—Jerd. II, 202.—S. F. III, 245.
572 *bis.* Abrornis jerdoni, *Brooks.*—S. F. III, 245*n.*
572 *ter.* Abrornis flavogularis, *G.-Aust.*—S. F. VII, 147.
573. Abrornis albosuperciliaris, *Bly.*—Jerd. II, 202.—S. F. III, 245.
574. Abrornis superciliaris, *Tick.*—Jerd. II, 203.—S. F. III, 141; VI, 359.
575. Abrornis poliogenys, *Bly.*—Jerd. II, 203.
576. Abrornis affinis, *Hodgs.*—Jerd. II, 204.
? 576 *bis.* Abrornis chryseus, *Wald.*—S. F. V, 55; VI, 359.

577. Abrornis albogularis, *Hodgs.*—Jerd. II, 204.
? 577 *bis.* Abrornis griseifrons, *G. R. Gr.*—S. F. VII, 399.
578. Abrornis castaneiceps, *Hodgs.*—Jerd. II, 205.
579. Tickellia hodgsoni, *Moore.*—Jerd. II, 206.
580. Regulus cristatus, *Koch.*—Jerd. II, 206.—S. F. III, 246.
581. Sylvia jerdoni, *Bly.*—Jerd. II, 208.—S. F. I, 197; II, 330. [VII, 59.
582. Sylvia affinis, *Bly.*—Jerd. II, 209.—S. F. I, 197; II, 332; III, 272, 487;
582 *bis.* Sylvia minuscula, *Hume.*—S. F. I, 198; VII, 58, *et seq.*
582 *ter.* Sylvia althæa, *Hume.*—S. F. I, 198; VII, 60.
582 *quat.* Sylvia rufa, *Bodd.*—S. F. III, 488.
583. *Sylvia curruca, Lin.*—Jerd. II, 209.—S. F. VII, 59.
583 *bis.* Sylvia nana, *Hemp. & Ehr.*—S. F. I, 199; II, 330.
584. Henicurus maculatus, *Vig.*—Jerd. II, 212.—S. F. VII, 400.
584 *bis.* Henicurus guttatus, *Gould.*—S. F. VII, 399.
584 *ter.* Henicurus leschenaulti, *Vieill.*—S. F. V, 249; VI, 360.
584 *quat.* Henicurus frontalis, *Bly.*—S. F. V, 248; VI, 360.
585. Henicurus immaculatus, *Hodgs.*—Jerd. II, 213.
586. Henicurus schistaceus, *Hodgs.*—Jerd. II, 214.—S. F. VI, 361.
587. Henicurus scouleri, *Vig.*—Jerd. II, 214.—S. F. III, 246; VII, 457.
588. *Henicurus nigrifrons, Hodgs.*—Jerd. II, 215.—S. F. VII, 457.
588 *bis.* Henicurus ruficapillus, *Tem.*—S. F. VI, 361.
589. Motacilla maderaspatensis, *Gm.*—Jerd. II, 217.—S. F. I, 26. [VII, 139, 519.
589 *bis.* Motacilla hodgsoni, *G. R. Gr.*—S. F. I, 26; II, 456; III, 246, 278;
590. Motacilla leucopsis, *Gould.*—Jerd. II, 218.—S. F. I, 26; II, 457; VI, 362*n.*; VII,
591. Motacilla personata, *Gould.*—Jerd. II, 218.—S. F. I, 29-30; III, 250. [139, 519.
591 *bis.* Motacilla dukhunensis, *Sykes.*—S. F. I, 29-30; VII, 137.
591 *ter.* Motacilla alba, *Lin.*—S. F. I, 29; VII, 136.
591 *quat.* Motacilla ocularis, *Swinh.*—S. F. VI, 518.
592. Calobates melanope, *Pall.*—Jerd. II, 220.—S. F. II, 237.
592 *bis. Budytes rayi, Bp.*—S. F. VII, 400.
593. Budytes cinereocapilla, *Savi.*—Jerd. II, 222.—S. F. VI, 363.
593 *bis.* Budytes melanocephala, *Licht.*—S. F. VI, 363.
593 *ter.* Budytes flava, *Lin.*—S. F. II, 238; VI, 363; VII, 138.
594. Budytes calcarata, *Hodgs.*—Jerd. II, 225.—S. F. VII, 401.
594 *bis.* Budytes citreola, *Pall.*—S. F. VII, 401.
595. Limonidromus indicus, *Gm.*—Jerd. II, 226.—S. F. VI, 364.
596. Anthus maculatus, *Hodgs.*—Jerd. II, 228.—S. F. III, 250; IV, 278.
597. Anthus trivialis, *Lin.*—Jerd. II, 229.—S. F. IV, 278.
598. Anthus montanus, *Jerd.*—Jerd. II, 230.—S. F. VII, 461.
599. Corydalla richardi, *Vieill.*—Jerd. II, 231.—S. F. I, 358; II, 239.
600. Corydalla rufula, *Vieill.*—Jerd. II, 232.—S. F. I, 358; VI, 366.
600 *bis.* Corydalla malayensis, *Eyt.*—S. F. VI, 366.
601. Corydalla striolata, *Bly.*—Jerd. II, 233.—S. F. I, 358; VI, 366.
602. Agrodroma campestris, *Lin.*—Jerd. II, 234.—S. F. I, 202.
603. Agrodroma similis, *Jerd.*—Jerd. II, 235.—S. F. I, 203.
604. Agrodroma sordida, *Rüpp.*—Jerd. II, 236.—S. F. I, 203.
605. Anthus rosaceus, *Hodgs.*—Jerd. II, 237.—S. F. II, 241; III, 252.
605 *bis.* Anthus cervinus, *Pall.*—S. F. II, 239; VI, 367.
605 *ter.* Anthus spinoletta, *Lin.*—S. F. I, 204; V, 345; VII, 521.
605 *quat.* Anthus blakistoni, *Swinh.*—S. F. V, 345.

605 *quint.*—**634** *bis.*]

605 *quint. Anthus pratensis, Lin.*—S. F. VII, 402, 455.
606. Heterura sylvana, *Hodgs.*—Jerd. II, 239.—S. F. III, 252.
607. Cochoa purpurea, *Hodgs.*—Jerd. II, 243.—S. F. VI, 367.
608. Cochoa viridis, *Hodgs.*—Jerd. II, 243.
609. Pteruthius erythropterus, *Vig.*—Jerd. II, 245.
610. Pteruthius rufiventer, *Bly.*—Jerd. II, 245.
610 *bis.* Pteruthius æralatus, *Tick.*—S. F. VI, 368.
611. Allotrius melanotis, *Hodgs.*—Jerd. II, 246, *male.*—S. F. VII, 456.
611 *bis.* Allotrius intermedius, *Hume.*—S. F. V, 112.
611 *ter.* Allotrius xanthochloris, *Hodgs.*—Jerd. II, 246, *female.*—S. F. VII, 456.
612. Cutia nipalensis, *Hodgs.*—Jerd. II, 247.
613. Lioptila annectans, *Bly.*—Jerd. II, 248.—S. F. V, 110.
613 *bis.* Lioptila saturata, *Wald.*—S. F. V, 110; VI, 370.
614. Liothrix lutea, *Scop.*—Jerd. II, 250.
615. Mesia argentauris, *Hodgs.*—Jerd. II, 251.—S. F. VI, 370.
616. Siva strigula, *Hodgs.*—Jerd. II, 252.
616 *bis.* Siva castaneicauda, *Hume.*—S. F. V, 100; VI, 371.
617. Siva cyanuroptera, *Hodgs.*—Jerd. II, 253.—S. F. VI, 371.
617 *bis.* Siva sordida, *Hume.*—S. F. V, 104.
618. Minla ignotincta, *Hodgs.*—Jerd. II, 254.
618 *bis.* Minla rufogularis, *Mand.*—S. F. I, 416; III, 281; IV, 91.
619. Minla castaneiceps, *Hodgs.*—Jerd. II, 255.—S. F. VI, 372.
620. Minla cinerea, *Bly.*—Jerd. II, 255.
621. Proparus chryseus, *Hodgs.*—Jerd. II, 256.
622. Proparus vinipectus, *Hodgs.*—Jerd. II, 257.
622 *bis.* Proparus dubius, *Hume.*—S. F. II, 447; VI, 372, 519.
622 *ter.* Proparus mandellii, *G.-Aust.*—S. F. IV, 490; VI, 373, 519.
623. Ixulus flavicollis, *Hodgs.*—Jerd. II, 258.
624. Ixulus occipitalis, *Bly.*—Jerd. II, 259.
624 *bis.* Staphidea castaneiceps, *Moore.*—S. F. VII, 403.
624 *ter.* Staphidea plumbeiceps, *G.-Aust.*—S. F. VII, 143.
625. Staphidea striata, *Bly.*—Jerd. II, 260.—S. F. V, 107; VI, 374.
625 *bis.* Staphidea humilis, *Hume.*—S. F. V, 106.
625 *ter.* Staphidea rufigenis, *Hume.*—S. F. V, 108; VII, 144.
626. Yuhina gularis, *Hodgs.*—Jerd. II, 261.
627. Yuhina occipitalis, *Hodgs.*—Jerd. II, 261.
628. Yuhina nigrimentum, *Hodgs.*—Jerd. II, 262.
629. Myzornis pyrrhurus, *Hodgs.*—Jerd. II, 263.
630. Herpornis xantholeucus, *Hodgs.*— Jerd. II, 264.—S. F. VI, 374.
631. Zosterops palpebrosa, *Tem.*— Jerd. II, 265.—S. F. II, 242; IV, 291.
631 *A.* Zosterops lateralis, *Tem.*—S. F. VI, 519; VII, 452.
631 *B. Zosterops simplex, Swinh.*—S. F. VII, 403.
631 *bis.* Zosterops ceylonensis, *Holdsw.*—S. F. VII, 404.
631 *ter.* Zosterops nicobariensis, *Bly.*—S. F. II, 242; IV, 291.
631 *quat.* Zosterops siamensis, *Bly.*—S. F. VI, 375.
631 *quint.* Zosterops austeni, *Wald.*—S. F. V, 56.
632. Sylviparus modestus, *Burt.*—Jerd. II, 267.
633. Cephalopyrrhus flammiceps, *Burt.*—Jerd. II, 267.—S. F. VII, 220.
634. Ægithaliscus erythrocephalus, *Vig.*—Jerd. II, 270.
634 *bis.* Ægisthaliscus leucogenys, *Moore.*—S. F. VII, 404.

635. Ægithaliscus iouschistus, *Hodgs.*—Jerd. II, 271.
636. Ægithaliscus niveogularis, *Gould.*—Jerd. II, 272.
637. Lophophanes dichrous, *Hodgs.*—Jerd. II, 273.
638. Lophophanes melanolophus, *Vig.*—Jerd. II, 273.
639. Lophophanes rubidiventris, *Bly.*—Jerd. II, 274.
640. Lophophanes rufonuchalis, *Bly.*—Jerd. II, 274.—S. F. III, 253.
641. Lophophanes beavani, *Bly.*—Jerd. II, 275.
642. Lophophanes æmodius, *Hodgs.*—Jerd. II, 276.
643. Parus atkinsoni, *Jerd.*—Jerd. II, 276.
644. Parus monticolus, *Vig.*—Jerd. II, 277.
644 *bis.* *Parus griffithi, Bly.*— S. F. VII, 405.
645. Parus nipalensis, *Hodgs.*—Jerd. II, 278.—S. F. VI, 376*n.*; VII, 230*n.*
645 *bis.* Parus commixtus, *Swinh.*—S. F. VI, 376.
646. Parus nuchalis, *Jerd.*—Jerd. II, 279.—S. F. I, 385; III, 492.
647. Machlolophus xanthogenys, *Vig.*—Jerd. II, 279.
648. Machlolophus aplonotus, *Bly.*—Jerd. II, 280.—S. F. III, 492; VII, 405*n.*
649. Machlolophus spilonotus, *Bly.*—Jerd. II, 281.—S. F. VI, 377.
649 *bis.* *Melaniparus semilarvatus, Salvad.*—S. F. VII, 458.
650. Melanochlora sultanea, *Hodgs.*—Jerd. II, 282.—S. F. III, 143; VI, 378.
651. Accentor immaculatus, *Hodgs.*—Jerd. II, 286.
652. Accentor nipalensis, *Hodgs.*—Jerd. II, 286.
653. Accentor altaicus, *Brandt.*—Jerd. II, 287.
654. Accentor strophiatus, *Hodgs.*—Jerd. II, 287.
654 *bis.* Accentor jerdoni, *Brooks.*—S. F. IV, 491.
655. Accentor atrogularis, *Brandt.*—Jerd. II, 288.
655 *bis.* Accentor montanellus, *Pall.*—S. F. VII, 405.
656. Accentor rubeculoides, *Moore.*—Jerd. II, 288.
657. *Corvus corax, Lin.*—Jerd. II, 293.—S. F. VI, 63.
657 *bis.* Corvus lawrencii, *Hume.*—S. F. I, 205, 385; VII, 63, 120.
658. Corvus tibetanus, *Hodgs.*—Jerd. II, 294.
659. Corvus corone, *Lin.*—Jerd. II, 295.
659 *bis.* Corvus cornix, *Lin.*—S. F. VII, 406, 517. [253, 493; V, 461.
660. Corvus macrorhynchus, *Wagl.*—Jerd. II, 295.—S. F. I, 74; II, 243; III,
660 *bis.* Corvus umbrinus, *Hedenb.*—S. F. VII, 120.
661. *Corvus intermedius, Adams.*—Jerd. II, 297.—S. F. V, 461.
662. *Corvus enca, Horsf.*—Jerd. II, 297.
663. Corvus splendens, *Vieill.*—Jerd. II, 298.—S. F. I, 206; III, 143.
663 *bis.* Corvus insolens, *Hume.*—S. F. II, 480; III, 144.
664. Corvus frugilegus, *Lin.*—Jerd. II, 302.
665. Corvus monedula, *Lin.*—Jerd. II, 302.
666. Nucifraga hemispila, *Vig.*—Jerd. II, 304.
667. Nucifraga multipunctata, *Gould.*—Jerd. II, 304.—S. F. V, 122.
668. Pica bottanensis, *Deless.*—Jerd. II, 305.—S. F. V, 281.
668 *bis.* Pica rustica, *Scop.*—Jerd. II, 306.—S. F. VII, 407.
668 *ter.* Platylophus ardesiacus, *Cab.*—S. F. VI, 380.
669. Garrulus bispecularis, *Vig.*—Jerd. II, 307.
669 *bis.* Garrulus leucotis, *Hume.*—S. F. II, 443; VI, 384.
670. Garrulus lanceolatus, *Vig.*—Jerd. II, 308.
671. Urocissa occipitalis, *Bly.*—Jerd. II, 309.
671 *bis.* *Urocissa magnirostris, Bly.*—S. F. III, 144; VI, 385.

672. Urocissa flavirostris, *Bly.*—Jerd. II, 310.
673. Cissa chinensis, *Bodd.*—Jerd. II, 312.—S. F. III, 145; V, 352; VI, 385.
673 *bis.* Cissa ornata, *Wagl.*—S. F. VII, 408.
674. Dendrocitta rufa, *Scop.*—Jerd. II, 314.—S. F. III, 146; VI, 386.
675. *Dendrocitta pallida, Bly.*—Jerd. II, 315.
676. Dendrocitta himalayensis, *Bly.*—Jerd. II, 316.—S. F. VI, 386.
? 676 *bis.* Dendrocitta assimilis, *Hume.*—S. F. V, 117; VII, 519.
677. Dendrocitta frontalis, *McClell.*—Jerd. II, 317.
678. Dendrocitta leucogastra, *Gould.*—Jerd. II, 317.—S. F. IV, 402.
678 *bis.* Dendrocitta bayleyi, *Tyt.*—S. F. I, 75; II, 245.
678 *ter.* Crypsirhina cuculata, *Jerd.*—S. F. III, 147.
678 *quat.* Crypsirhina varians, *Lath.*—S. F. III, 146; VI, 386.
678 *quint.* Platysmurus leucopterus, *Tem.*—S. F. VI, 387.
679. Graculus eremita, *Lin.*—Jerd. II, 319.—S. F. IV, 278; VII, 149, 522.
679 *bis.* Podoces humilis, *Hume.*—S. F. II, 454; IV, 161; VII, 409.
680. Pyrrhocorax alpinus, *Koch.*—Jerd. II, 319.
681. Sturnus vulgaris, *Lin.*—Jerd. II, 321.—S. F. I, 206.
681 *bis.* Sturnus minor, *Hume.*—S. F. I, 207; V, 328.
682. Sturnus nitens, *Hume.*—Jerd. II, 322.—S. F. III, 409; V, 238.
683. Sturnopastor contra, *Lin.*—Jerd. II, 323.
683 *bis.* Sturnopastor superciliaris, *Bly.*—S. F. III, 149; IV, 331; VI, 387.
684. Acridotheres tristis, *Lin.*—Jerd. II, 325.
? 684 *bis.* Acridotheres melanosternus, *Legge.*—S. F. VIII, 72.
685. Acridotheres ginginianus, *Lath.*—Jerd. II, 326.
686. Acridotheres fuscus, *Wagl.*—Jerd. II, 327.—S. F. VI, 388; VII, 221*n.*
? 686 *bis.* Acridotheres mahrattensis, *Sykes.*—S. F. VI, 388.
686 *ter.* Acridotheres albocinctus, *G.-Aust. & Wald.*—S. F. IV, 217.
? 686 *quat.* Acridotheres siamensis, *Swinh.*—S. F. VI, 388.
687. Sturnia pagodarum, *Gm.*—Jerd. II, 329. [*et seq.*
688. Sturnia malabarica, *Gm.*—Jerd. II, 330.—S. F. IV, 332, 333, 402; VI, 389,
? 688 *bis.* Sturnia nemoricola, *Jerd.*—S. F. II, 480*n.*; III, 151; IV, 333; VI, 390.
? 688 *ter.* Sturnia sinensis, *Gm.*—S. F. VII, 514.
689 *Sturnia blythi, Jerd.*—Jerd. II, 331.—S. F. VI, 391.
689 *bis.* Sturnia burmanica, *Jerd.*—S. F. III, 149.
689 *ter.* Sturnia andamanensis, *Tyt.*—S. F. I, 75; II, 248.
689 *quat.* Sturnia erythropygia, *Bly.*—S. F. I, 76; II, 247.
689 *quint.* Sturnia senex, *Tem.*—S. F. VII, 409.
689 *sex.* Sturnia sturnina, *Pall.*—S. F. II, 249; VI, 393.
690 Pastor roseus, *Lin.*—Jerd. II, 333.—S. F. I, 208; III, 208.
690 *bis.* Calornis chalybaeus, *Horsf.*—S. F. VI, 394.
690 *ter.* Calornis tytleri, *Hume.*—S. F. I, 480; VI, 396.
691. Saroglossa spiloptera, *Vig.*—Jerd. II, 336.—S. F. IV, 334; VI, 394.
692. Eulabes religiosa, *Lin.*—Jerd. II, 337.
693. Eulabes javanensis, *Osb.*—Jerd. II, 339.—S. F. I, 77; II, 254; V, 86; VI, 396.
693 *bis.* Eulabes ptilogenys, *Bly.*—S. F. VII, 410.
693 *ter.* Ampeliceps coronatus, *Bly.*—S. F. IV, 335; VI, 398.
694. Ploceus philippinus, *Lin.*—Jerd. II, 343.—S. F. VI, 399.
694 *bis.* Ploceus baya, *Bly.*—S. F. VI, 398.
694 *ter.* Ploceus megarhynchus, *Hume.*—S. F. III, 406; VI, 400.
695. Ploceus manyar, *Horsf.*—Jerd. II, 348.—S. F. I, 208; VI, 399, *n.*

696. Ploceus bengalensis, *Lin.*—Jerd. II, 349.—S. F. VI, 399.
696 *bis.* Ploceella javanensis, *Less.*—S. F. III, 154; VI, 399*n.*
697. Amadina malacca, *Lin.*—Jerd. II, 352.
698. Amadina rubronigra, *Hodgs.*—Jerd. II, 353.—S. F. VI, 401, *n.*
699. Amadina punctulata, *Lin.*—Jerd. II, 354.
699 *bis.* Amadina subundulata, *G.-Aust.*—S. F. III, 398.
699 *ter.* Amadina superstriata, *Hume.*—S. F. II, 481*n.*; VI, 402.
? 699 *quat.* Amadina inglisi, *Hume.*—S. F. V, 39.
700. Amadina pectoralis, *Jerd.*—Jerd. II, 355.—S. F. III, 263; IV, 403.
700 *bis.* Amadina kelaarti, *Bly.*—S. F. VII, 410.
701. Amadina striata, *Lin.*—Jerd. II, 356.
701 *bis.* Amadina leucogastra, *Bly.*—S. F. VI, 402.
701 *ter.* Amadina fumigata, *Wald.*—S. F. II, 257, 497; IV, 291.
701 *quat.* Amadina semistriata, *Hume.*—S. F. II, 257; IV, 291.
702. Amadina acuticauda, *Hodgs.*—Jerd. II, 356.
703. Amadina malabarica, *Lin.*—Jerd. II, 357.
703 *bis. Amadina oryzivora*, *Lin.*—S. F. VI, 403.
703 *ter.* Erythrura prasina, *Sparrm.*—S. F. VI, 405.
704. Estrelda amandava, *Lin.*—Jerd. II, 359.
704 *bis.* Estrelda flavidiventris, *Wall.*—S. F. IV, 484; VI, 406.
705. Estrelda formosa, *Lath.*—Jerd. II, 361.—S. F. III, 496; VII, 222.
706. Passer domesticus, *Lin.*—Jerd. II, 362.
707. Passer hispaniolensis, *Tem.*—Jerd. II, 364.—S. F. I, 209.
708. Passer cinnamomeus, *Gould.*—Jerd. II, 365.
708 *bis.* Passer flaveolus, *Bly.*—S. F. III, 156.
708 *ter. Passer assimilis*, *Wald.*—S. F. III, 157; VI, 407.
709. *Passer pyrrhonotus*, *Bly.*—Jerd. II, 365.—S. F. I, 209.
710. Passer montanus, *Lin.*—Jerd. II, 366.—S. F. VI, 407.
710 *bis. Passer pyrrhopterus*, *Less.*—Jerd. II, 367.
711. Gymnoris flavicollis, *Frankl.*—Jerd. II, 368.
712. Emberiza leucocephala, *S. G. Gm.*—Jerd. II, 370.
713. *Emberiza cia*, *Lin.*—Jerd. II, 371.—S. F. III, 254.
714. Emberiza stracheyi, *Moore.*—Jerd. II, 372.—S. F. III, 254.
715. *Emberiza hortulana*, *Lin.*—Jerd. II, 372.—S. F. VII, 150.
716. Emberiza buchanani, *Bly.*—Jerd. II, 373.—S. F. III, 497; VII, 150.
717. Emberiza spodocephala, *Pall.*—Jerd. II, 374.
718. Emberiza stewarti, *Bly.*—Jerd. II, 374.
719. Emberiza fucata, *Pall.*—Jerd. II, 375.
720. Emberiza pusilla, *Pall.*—Jerd. II, 376.
720 *bis.* Emberiza striolata, *Licht.*—S. F. III, 497; VII, 410.
720 *ter.* Emberiza schœniclus, *Lin.*—S. F. VII, 412.
? 720 *quat.* Emberiza miliaria, *Lin.*—S. F. VII, 121.
721. Euspiza melanocephala, *Scop.*—Jerd. II, 378.—S. F. III, 497.
722. Euspiza luteola, *Sparrm.*—Jerd. II, 378.—S. F. III, 498.
722 *bis.* Euspiza rutila, *Pall.*—S. F. III, 157; VI, 408.
723. Euspiza aureola, *Pall.*—Jerd. II, 380.—S. F. VI, 409. [517.
724. Melophus melanicterus, *Gm.*—Jerd. II, 381.—S. F. III, 498; VI, 409; VII,
725. Pycnoramphus icterioides, *Vig.*—Jerd. II, 384.
726. Pycnoramphus affinis, *Bly.*—Jerd. II, 385.
727. Mycerobas melanoxanthus, *Hodgs.*—Jerd. II, 386.

728. Pycnoramphus carnipes, *Hodgs.*—Jerd. II, 387.
728 *bis.* Coccothraustes vulgaris, *Pall.*—S. F. VII, 413, 462.
729. Pyrrhula erythrocephala, *Vig.*—Jerd. II, 389.
730. Pyrrhula erythaca, *Bly.*—Jerd. II, 389.—S. F. II, 455.
731. Pyrrhula nipalensis, *Hodgs.*—Jerd. II, 390.
732. Pyrrhula aurantiaca, *Gould.*—Jerd. II, 390.
732 *bis.* Erythrospiza githaginea, *Licht.*—S. F. I, 210; VII, 64, 454.
? 732 *ter.* Erythrospiza sanguinea, *Gould.*—S. F. VII, 414.
733. Pyrrhoplectes epauletta, *Hodgs.*—Jerd. II, 392.
734. Loxia himalayana, *Hodgs.*—Jerd. II, 393.
735. Hæmatospiza sipahi, *Hodgs.*—Jerd. II, 394.
736. Propyrrhula subhimachala, *Hodgs.*—Jerd. II, 396.
737. Carpodacus rubicillus, *Güld.*—Jerd. II, 397.
738. Carpodacus erythrinus, *Pall.*—Jerd. II, 398.
739. Propasser rhodopeplus, *Vig.*—Jerd. II, 400.—S. F. I, 15.
740. Propasser thura, *Bp.*—Jerd. II, 400 and 403.—S. F. I, 15; VII, 459.
741. Propasser rhodochlamys, *Brandt.*—Jerd. II, 401.
742. Propasser rhodochrous, *Vig.*—Jerd. II, 402.
743. Propasser pulcherrimus, *Hodgs.*—Jerd. II, 402.
743 *bis.* Propasser ambiguus, *Hume.*—S. F. II, 326.
744. *Propasser frontalis, Bly.*—Jerd. II, 403.—S. F. VII, 459.
744 *bis.* Propasser edwardsi, *Verr.*—S. F. I, 15, 418; VII, 415.
745. *Propasser murrayi, Bly.*—Jerd. II, 404.—S. F. IV, 504.
746. Procarduelis nipalensis, *Hodgs.*—Jerd. II, 405.
746 *bis.* Procarduelis rubescens, *Blanf.*—S. F. I, 14, 318.
747. Pyrrhospiza punicea, *Hodgs.*—Jerd. II, 406.
748. Calacanthis burtoni, *Gould.*—Jerd. II, 407.—S. F. III, 255.
749. Carduelis caniceps, *Vig.*—Jerd. II, 408.
750. Hypacanthis spinoides, *Vig.*—Jerd. II, 409.—S. F. III, 255.
750 *bis.* Chrysomitris tibetana, *Hume.*—S. F. VII, 416.
751. Metoponia pusilla, *Pall.*—Jerd. II, 410.—S. F. III, 255.
751 *bis.* Linaria brevirostris, *Gould.*—S. F. VII, 417.
? 751 *ter.* Linaria cannabina, *Lin.*—S. F. VII, 122, 184.
? 752. Fringilla montifringilla, *Lin.*—Jerd. II, 412.—S. F. VII, 465. [418.
752 *bis.* Leucosticte hæmatopygia, *Gould.*—Jerd. II, 413.—S. F. IV, 486; VII,
752 *ter.* Montifringilla adamsi, *Moore.*—Jerd. II, 413.—S. F. IV, 486; VII, 419.
752 *quat.* Montifringilla ruficollis, *Blanf.*—S. F. IV, 486; VII, 420.
752 *quint.* Montifringilla blanfordi, *Hume.*—S. F. IV, 487.
752 *sex.* Montifringilla mandellii, *Hume.*—S. F. IV, 488.
753. Fringillauda nemoricola, *Hodgs.*—Jerd. II, 414.—S. F. I, 41.
753 *bis.* Fringillauda sordida, *Stol.*—S. F. I, 41.
754. Mirafra assamica, *McClell.*—Jerd. II, 416.—S. F. VII, 294.
? 754 *bis.* Mirafra immaculata, *Hume.*—S. F. I, 12.
755. Mirafra affinis, *Jerd.*—Jerd. II, 417.
755 *bis.* Mirafra microptera, *Hume.*—S. F. I, 483; VI, 410.
756. Mirafra erythroptera, *Jerd.*—Jerd. II, 418.
757. Mirafra cantillans, *Jerd.*—Jerd. II, 420.
758. Ammomanes phœnicura, *Frankl.*—Jerd. II, 421.—S. F. III, 499.
759. Ammomanes deserti, *Licht.*—Jerd. II, 422.—S. F. I, 211.
760. Pyrrhulauda grisea, *Scop.*—Jerd. II, 424.—S. F. I, 212; VII, 66.

760 *bis.* Pyrrhulauda melanauchen, *Cab.*—S. F. I, 212; VII, 64.
761. Calandrella brachydactyla, *Leisl.*—Jerd. II, 426.
761 *ter.* Melanocorypha bimaculata, *Ménétr.*—S. F. VII, 421.
761 *quat.* Melanocorypha maxima, *Gould.*—S. F. I, 492.
762. Alaudula raytal, *Bly.*—Jerd. II, 428.—S. F. V, 327*n.*
762 *bis.* Alaudula pispoletta, *Pall.*—S. F. VII, 529.
762 *ter.* Alaudula adamsi, *Hume.*—S. F. I, 213; V, 327*n.* [422.
763. Otocorys pencillata, *Gould.*—Jerd. II, 429.—S. F. I, 36, 417; II, 529; VII,
763 *bis. Otocorys alpestris, Lin.*—S. F. VII, 422, 514.
764. *Otocorys longirostris, Moore.*—Jerd. II, 431.—S. F. II, 529; VII, 422.
765. Spizalauda deva, *Sykes.*—Jerd. II, 432.—S. F. IV, 1, 237.
765 *bis.* Spizalauda malabarica, *Scop.*—S. F. IV, 1, 237.
766. Alauda dulcivox, *Hodgs.*—Jerd. II, 433.—S. F. I, 39.
767. Alauda gulgula, *Frankl.*—Jerd. II, 434.—S. F. I, 40.
767 *bis. Alauda liopus, Hodgs.*—S. F. I, 40.
767 *ter. Alauda triborhyncha, Hodgs.*—S. F. I, 41.
? 768. Alauda australis, *Brooks.*—Jerd. II, 436.—S. F. I, 40, 486.
769. Galerita cristata, *Lin.*—Jerd. II, 436.—S. F. I, 215; VII, 185.
770. Certhilauda desertorum, *Stanl.*—Jerd. II, 438.—S. F. I, 216.
771. Treron nipalensis, *Hodgs.*—Jerd. III, 445.—S. F. III, 160; VI, 410,*n.*
772. Crocopus phœnicopterus, *Lath.*—Jerd. III, 447.—S. F. II, 423.
773. Crocopus chlorigaster, *Bly.*—Jerd. III, 448.—S. F. II, 423.
773 *bis.* Crocopus viridifrons, *Bly.*—S. F. III, 161; VI, 410.
774. Osmotreron bicincta, *Jerd.*—Jerd. III, 449.—S. F. III, 162; VI, 411, 414.
774 *bis.* Osmotreron vernans, *Lin.*—S. F. I, 461; III, 162; VI, 411, 414. [414.
775. Osmotreron malabarica, *Jerd.*—Jerd. III, 450.—S. F. III, 162; IV, 261; VI,
776. Osmotreron phayrii, *Bly.*—Jerd. III, 451.—S. F. III, 162; VI, 412, 414.
776 *bis.* Osmotreron fulvicollis, *Wagl.*—S. F. VI, 413, 414.
777. Osmotreron pompadoura, *Gm.*—Jerd. III, 452.—S. F. III, 162; VI, 414.
777 *bis.* Osmotreron chloroptera, *Bly.*—S. F. I, 78; II, 258; III, 162; VI, 414.
778. Sphenocercus sphenurus, *Vig.*—Jerd. III, 453.—S. F. III, 255.
779. Sphenocercus apicaudus, *Hodgs.*—Jerd. III, 454.—S. F. VI, 415.
780. Carpophaga ænea, *Lin.*—Jerd. III, 455.—S. F. II, 260; VI, 416.
780 *bis.* Carpophaga insularis, *Bly.*—S. F. I, 79; II, 262.
780 *ter. Carpophaga pusilla, Bly.*—S. F. II, 260; VII, 424.
781. Carpophaga insignis, *Hodgs.*—Jerd. III, 457.—S. F. III, 328.
781 *bis.* Carpophaga cuprea, *Jerd.*—S. F. III, 328; IV, 403.
781 *ter.* Carpophaga griseicapilla, *Wald.*—S. F. III, 402; VI, 418.
? 781 *ter A.* Carpophaga badia, *Raffl.*—S. F. VI, 417.
781 *quat.* Carpophaga palumboides, *Hume.*—S. F. I, 302; II, 263, 498; III, 327.
781 *quint.* Carpophaga bicolor, *Scop.*—S. F. I, 79; II, 264.
782. Alsocomus puniceus, *Tick.*—Jerd. III, 462.—S. F. VI, 418.
783. Alsocomus hodgsoni, *Vig.*—Jerd. III, 463.
784. Palumbus casiotis, *Bp.*—Jerd. III, 464.
785. Palumbus pulchricollis, *Hodgs.*—Jerd. III, 465.
786. Palumbus elphinstonii, *Sykes.*—Jerd. III, 465.
786 *bis.* Palumbus torringtoni, *Kel.*—S. F. VII, 424.
787. Palumbœna eversmanni, *Bp.*—Jerd. III, 467.—S. F. I, 217.
788. Columba intermedia, *Strickl.*—Jerd. III, 469.—S. F. I, 217; VI, 419
788 *bis.* Columba livia, *Bp.*—S. F. I, 218; VII, 296.

789—811 *quint.*]

789. Columba rupestris, *Pall.*—Jerd. III, 470.
790. Columba leuconota, *Vig.*—Jerd. III, 471.—S. F. III, 256.
791. Macropygia tusalia, *Hodgs.*—Jerd. III, 473.—S. F. VI, 419.
791 *bis.* Macropygia rufipennis, *Bly.*—S. F. I, 80; II, 266.
791 *ter.* Macropygia assimilis, *Hume.*—S. F. II, 441.
792. Turtur pulchratus, *Hodgs.*—Jerd. III, 476.—S. F. VI, 421.
793. Turtur meena, *Sykes.*—Jerd. III, 476.—S. F. VI, 421.
794. Turtur senegalensis, *Lin.*—Jerd. III, 478.—S. F. VII, 463.
795. Turtur suratensis, *Gm.*—Jerd. III, 479.
795 *bis.* Turtur tigrinus, *Tem.*—S. F. I, 461; III, 164; IV, 424*n.*
796. Turtur risorius, *Lin.*—Jerd. III, 481.—S. F. VII, 297.
797. Turtur tranquebaricus, *Herm.*—Jerd. III, 482.—S. F. IV, 292.
797 *bis.* Turtur humilis, *Tem.*—S. F. II, 269; III, 279; IV, 292.
797 *ter.* Geopelia striata, *Lin.*—S. F. VI, 423.
798. Chalcophaps indica, *Lin.*—Jerd. III, 484.—S. F. II, 269; IV, 404; VI, 424.
798 *bis.* Calœnas nicobarica, *Lin.*—S. F. II, 271.
799. Pterocles arenarius, *Pall.*—Jerd. III, 496.—S. F. IV, 4; VII, 160.
800. Pterocles fasciatus, *Scop.*—Jerd. III, 498.—S. F. I, 391; VII, 160.
800 *bis.* Pterocles lichtensteini, *Tem.*—S. F. I, 219; IV, 230; VII, 160.
801. Pterocles alchata, *Lin.*—Jerd. III, 500.—S. F. III, 268; VII, 160. [VII, 160.
801 *bis.* Pterocles senegalus, *Lin.*—S. F. I, 221; II, 331; IV, 4, 508; V, 60, 2[illegible]22;
801 *ter.* Pterocles coronatus, *Licht.*—S. F. I, 224; III, 267; VII, 159.
802. Pterocles exustus, *Tem.*—Jerd. III, 502.—S. F. VII, 160.
802 *bis.* Syrrhaptes tibetanus, *Gould.*—S. F. VII, 425.
803. Pavo cristatus, *Lin.*—Jerd. III, 506.
803 *bis.* Pavo muticus, *Lin.*—S. F. VI, 425, 520; VII, 455.
803 *ter.* Argus giganteus, *Tem.*—S. F. VI, 427.
803 *quat.* Polyplectrum tibetanum, *Gm.*—S. F. V, 40; VI, 432.
803 *quint. Polyplectrum bicalcaratum, Lin.*—S. F. VI, 434.
803 *sex. Polyplectrum germaini, Ell.*—S. F. I, 35; V, 118; VII, 426.
803 *sept. Crossoptilum tibetanum, Hodgs.*—S. F. VII, 426.
803 *oct.* Megapodius nicobariensis, *Bly.*—S. F. I, 82; II, 276, 499.
804. Lophophorus impeyanus, *Lath.*—Jerd. III, 510.
804 *bis.* Lophophorus sclateri, *Jerd.*—S. F. II, 488.
805. Ceriornis satyra, *Lin.*—Jerd. III, 516.
806. Ceriornis melanocephalus, *J. E. Gr.*—Jerd. III, 517.
806 *bis.* Ceriornis blythi, *Jerd.*—S. F. VII, 472.
807. Ithagenes cruentus, *Hardw.*—Jerd. III, 522.
808. Pucrasia macrolopha, *Less.*—Jerd. III, 524.—S. F. V, 138; VII, 124.
808 *bis.* Pucrasia castanea, *Gould.*—S. F. V, 138; VII, 124, 428.
808 *ter.* Pucrasia nipalensis, *Gould.*—S. F. VII, 428.
809. Phasianus wallichi, *Hardw.*—Jerd. III, 527.
810. Euplocamus albocristatus, *Vig.*—Jerd. III, 532.—S. F. V, 42; VII, 429.
810 *bis.* Euplocamus leucomelanus, *Lath.*—S. F. VII, 428.
810 *ter.* Euplocamus horsfieldi, *G. R. Gr.*—S. F. V, 42; VII, 429.
811. Euplocamus melanonotus, *Bly.*—Jerd. III, 534.—S. F. V, 42; VII, 429.
811 *bis.* Euplocamus cuvieri, *Tem.*—S. F. III, 166*n.*, 343.
811 *ter.* Euplocamus lineatus, *Vig.*—S. F. III, 165; VI, 436.
811 *quat.* Euplocamus crawfurdi, *J. E. Gr.*—S. F. VI, 437, 521.
811 *quint.* Euplocamus vieilloti, *G. R. Gr.*—S. F. V, 119, 121; VI, 438.

812. Gallus ferrugineus, *Gm.*—Jerd. III, 536.—S. F. III, 171; VI, 442.
812 *bis.* Gallus lafayettii, *Less.*—S. F. VII, 429.
813. Gallus sonnerati, *Tem.*—Jerd. III, 539.—S. F. IV, 5, 404.
814. Galloperdix spadiceus, *Gm.*—Jerd. III, 541.—S. F. IV, 5.
815. Galloperdix lunulatus, *Valenc.*—Jerd. III, 543.—S. F. II, 427, 458, 532.
815 *bis.* Galloperdix bicalcaratus, *Penn.*—S. F. VII, 430, 453.
816. Tetraogallus himalayensis, *G. R. Gr.*—Jerd. III, 549.
816 *bis.* Tetraogallus tibetanus, *Gould.*—Jerd. III, 554.—S. F. VII, 430.
817. Lerwa nivicola, *Hodgs.*—Jerd. III, 555.
818. Francolinus vulgaris, *Steph.*—Jerd. III, 558.—S. F. IV, 5.
819. Francolinus pictus, *Jard. & Selb.*—Jerd. III, 561.—S. F. V, 211.
819 *bis.* Francolinus chinensis, *Osb.*—S. F. III, 171.
820. Caccabis chukar, *J. E. Gr.*—Jerd. III, 564.
821. Ammoperdix bonhami, *G. R. Gr.*—Jerd. III, 567.—S. F. I, 226.
822. Ortygornis pondicerianus, *Gm.*—Jerd. III, 569.
823. Ortygornis gularis, *Tem.*—Jerd. III, 572.
823 *bis.* Perdix hodgsoniæ, *Hodgs.*—S. F. VII, 432.
824. Arboricola torqueolus, *Valenc.*—Jerd. III, 577.—S. F. II, 449.
824 *bis.* Arboricola atrogularis, *Bly.*—S. F. II, 449; V, 44.
824 *ter.* Arboricola brunneopectus, *Tick.*—S. F. II, 449; III, 174; VI, 443.
824 *quat.* Arboricola chloropus, *Tick.*—S. F. II, 449; III, 176; VI, 444.
825. Arboricola rufogularis, *Bly.*—Jerd. III, 578.—S. F. II, 449; V, 114; VI, [444.
825 *bis.* Arboricola mandellii, *Hume.*—S. F. II, 449; III, 262, pl. 1.
825 *ter.* Arboricola intermedius, *Bly.*—S. F. II, 449; III, 344.
825 *quat.* *Arboricola charltoni*, *Eyt.*—S. F. II, 449; VI, 445.
825 *quint.* Bambusicola fytchii, *Anders.*—S. F. III, 399; V, 493.
826. Perdicula asiatica, *Lath.*—Jerd. III, 581.—S. F. VII, 156.
827. Perdicula argoondah, *Sykes.*—Jerd. III, 583.—S. F. VII, 156.
827 *bis.* Ophrysia superciliosa, *J. E. Gr.*—S. F. VII, 434.
828. Microperdix erythrorhynchus, *Sykes.*—Jerd. III, 584.
828 *bis.* Microperdix blewitti, *Hume.*—S. F. II, 512.
829. Coturnix communis, *Bonn.*—Jerd. III, 586.—S. F. IV, 7.
830. Coturnix coromandelica, *Gm.*—Jerd. III, 588.
831. Excalfactoria chinensis, *Lin.*—Jerd. III, 591.—S. F. III, 345; VI, 447.
831 *bis.* *Phœnicoperdix chloropus*, *Bly.*—S. F. VI, 447.
831 *ter.* Rollulus roulroul, *Scop.*—S. F. VI, 448.
831 *quat.* Caloperdix oculeus, *Tem.*—S. F. VI, 449.
832. Turnix taigoor, *Sykes.*—Jerd. III, 595.—S. F. VI, 451.
833. Turnix plumbipes, *Hodgs.*—Jerd. III, 597.—S. F. VI, 450.
834. Turnix joudera, *Hodgs.*—Jerd. III, 599.—S. F. VI, 453.
834 *bis.* Turnix maculosa, *Tem.*—S. F. VI, 452.
834 *ter.* Turnix albiventris, *Hume.*—S. F. I, 310; II, 281.
835. Turnix dussumieri, *Tem.*—Jerd. III, 600.
836. Eupodotis edwardsi, *J. E. Gr.*—Jerd. III, 607.
836 *bis.* Otis tarda, *Lin.*—S. F. VII, 434.
836 *ter.* Otis tetrax, *Lin.*—S. F. VII, 435.
837. Houbara macqueeni, *J. E. Gr. & Hardw.*—Jerd. III, 612.
838. Sypheotis bengalensis, *P. L. S. Müll.*—Jerd. III, 616.
839. Sypheotides aurita, *Lath.*—Jerd. III, 619.—S. F. IV, 10.
840. Cursorius coromandelicus, *Gm.*—Jerd. III, 626.—S. F. IV, 10.

840 *bis.* Cursorius gallicus, *Gm.*—Jerd. III, App. 874.—S. F. I, 228; IV, 11.
841. Rhinoptilus bitorquatus, *Jerd.*—Jerd. III, 628.
842. Glareola orientalis, *Leach.*—Jerd. III, 631.—S. F. II, 284, 465; VI, 454.
842 *bis.* Glareola pratincola, *Lin.*—S. F. II, 284; IV, 507; VII, 186.
843. Glareola lactea, *Tem.*—Jerd. III, 632.—S. F. III, 179.
844. Squatarola helvetica, *Lin.*—Jerd. III, 635.—S. F. II, 338.
845. Charadrius fulvus, *Gm.*—Jerd. III, 636.—S. F. I, 228; II, 287; VII, 482.
845 *bis.* Charadrius pluvialis, *Lin.*—S. F. V, 247; VII, 186, 436.
845 *ter.* Eudromias veredus, *Gould.*—S. F. I, 83; VII, 438.
845 *quat.* *Ægialitis asiatica*, *Pall.*—S. F. VII, 438.
846. Ægialitis geoffroyi, *Wagl.*—Jerd. III, 638.—S. F. I, 229; II, 288.
847. Ægialitis mongola, *Pall.*—Jerd. III, 639.—S. F. I, 230; II, 289.
848. Ægialitis cantiana, *Lath.*—Jerd. III, 640.—S. F. I, 230.
848 *bis.* Ægialitis placida, *G. R. Gr.*—S. F. I, 17, 495; VI, 455. [VII, 227*n.*, 300*n.*
849. Ægialitis dubia, *Scop.*—Jerd. III, 640.—S. F. I, 230; II, 289; III, 179, 372;
850. Ægialitis minuta, *Pall.*—Jerd. III, 641.—S. F. VII, 227*n.*, 300*n.*
850 *bis.* Ægialitis nigrifrons, *Cuv.*—S. F. VII, 438.
851. Vanellus vulgaris, *Bechst.*—Jerd. III, 643.—S. F. I, 231.
852. Chettusia gregaria, *Pall.*—Jerd. III, 644.—S. F. I, 231; IV, 13.
853. Chettusia villotæi, *Audouin.*—Jerd. III, 646.—S. F. I, 232; IV, 13.
854. Chettusia cinerea, *Bly.*—Jerd. III, 646.—S. F. III, 180; VI, 456.
855. Lobivanellus indicus, *Bodd.*—Jerd. III, 648.—S. F. III, 14; VII, 67.
855 *bis.* Lobivanellus atronuchalis, *Bly.*—S. F. III, 181; VI, 457,*n.*
856. Lobipluvia malabarica, *Bodd.*—Jerd. III, 649.—S. F. IV, 14.
857. Hoplopterus ventralis, *Cuv.*—Jerd. III, 650.—S. F. III, 181; VI, 457.
858. Æsacus recurvirostris, *Cur.*—Jerd. III, 652.—S. F. V, 121.
858 *bis.* Æsacus magnirostris, *Geoff. in Vieill.*—S. F. II, 290; V, 121.
859. Œdicnemus scolopax, *S. G. Gm.*—Jerd. III, 654.—S. F. I, 232.
860. Strepsilas interpres, *Lin.*—Jerd. III, 656.—S. F. I, 233; II, 292; IV, 464.
861. Dromas ardeola, *Payk.*—Jerd. III, 658.—S. F. II, 293; VII, 186.
862. Hæmatopus ostralegus, *Lin.*—Jerd. III, 659.—S. F. I, 234.
863. Grus antigone, *Lin.*—Jerd. III, 662.—S. F. I, 234; VI, 458.
864. Grus leucogeranus, *Pall.*—Jerd. III, 663.—S. F. I, 235; VII, 187.
865. Grus communis, *Bechst.*—Jerd. III, 664.—S. F. I, 235; IV, 15.
866. Anthropoides virgo, *Lin.*—Jerd. III, 666.—S. F. IV, 15. [470, 483, 525.
867. Scolopax rusticola, *Lin.*—Jerd. III, 670.—S. F. V, 140, 504; VI, 458; VII,
868. Gallinago nemoricola, *Hodgs.*—Jerd. III, 672.—S. F. VI, 459.
869. Gallinago solitaria, *Hodgs.*—Jerd. III, 673. [V, 212, 214; VII, 525.
870. Gallinago sthenura, *Kuhl.*—Jerd. III, 674.—S. F. I, 423, 496; II, 294, 335;
871. Gallinago gallinaria, *Gm.*—Jerd. III, 674.—(*Same references as for* 870.)
872. Gallinago gallinula, *Lin.*—Jerd. III, 676.—S. F. I, 235; IV, 15; VI, 459.
873. Rhynchæa bengalensis, *Lin.*—Jerd. III, 677.—S. F. IV, 15; V, 223; VI, 459.
874. Pseudoscolopax semipalmatus, *Jerd.*—Jerd. III, 679.—S. F. VII, 484.
875. Limosa ægocephala, *Lin.*—Jerd. III, 681.—S. F. I, 235; IV, 16; VI, 460.
875 *bis.* Limosa lapponica, *Lin.*—S. F. I, 235.
876. Terekia cinerea, *Güld.*—Jerd. III, 682.—S. F. I, 237; II, 296; VI, 460.
877. Numenius lineatus, *Cuv.*—Jerd. III, 683.—S. F. I, 237; II, 296.
878. Numenius phæopus, *Lin.*—Jerd. III, 684.—S. F. II, 297; IV, 16; VI, 460.
879. Ibidorhyncha struthersi, *Vig.*—Jerd. III, 685.—S. F. III, 257.
880. Machetes pugnax, *Lin.*—Jerd. III, 687.—S. F. IV, 17.

881. *Tringa canutus*, *Lin.*—Jerd. III, 688.—S. F. I, 241.
881 *bis*. Tringa crassirostris, *Tem. & Schl.*—S. F. I. 240; II, 500; IV, 341, 464.
882. Tringa subarquata, *Güld.*—Jerd. III, 689.—S. F. I, 242; II, 297; IV, 342;
883. Tringa alpina, *Lin.*—Jerd. III, 690.—S. F. I, 242. [VII, 487.
884. Tringa minuta, *Leisl.*—Jerd. III, 690.—S. F. I, 242, 491; II, 298; VII, 487.
884 *bis*. Tringa ruficollis, *Pall.*—S. F. I, 243, 491; III, 182; VI, 461; VII, 487.
884 *ter*. Tringa albescens, *Tem.*—S. F. II, 298; III, 265.
885. Tringa temmincki, *Leisl.*—Jerd. III, 691.—S. F. I, 244.
886. Limicola platyrhyncha, *Tem.*—Jerd. III, 692.—S. F. I, 244; VI, 461.
886 *bis*. *Limicola sibirica*, *Dress.*—S. F. V, 344.
887. Eurynorhynchus pygmæus, *Lin.*—Jerd. III, 693.—S. F. IV, 343; VI, 462.
888. Calidris arenaria, *Lin.*—Jerd. III, 694.—S. F. I, 244; IV, 343, 465.
889. Phalaropus fulicarius, *Lin.*—Jerd. III, 695.—S. F. I, 245; VII, 487.
890. Lobipes hyperboreus, *Lin.*—Jerd. III, 696.—S. F. I, 246; II, 338; V, 290;
891. Rhyacophila glareola, *Lin.*—Jerd. III, 697.—S. F. VII, 488. [VII, 150, 488.
892. Totanus ochropus, *Lin.*—Jerd. III, 698.
893. Tringoides hypoleucus, *Lin.*—Jerd. III, 699.—S. F. II, 299.
894. Totanus glottis, *Lin.*—Jerd. III, 700.—S. F. I, 247; VI, 463.
894 *bis*. Pseudototanus haughtoni, *Armstr.*—S. F. IV, 344; VI, 463; VII, 488.
895. Totanus stagnatilis, *Bechst.*—Jerd. III, 701.
896. Totanus fuscus, *Lin.*—Jerd. III, 702.—S. F. IV, 509.
897. Totanus calidris, *Lin.*—Jerd. III, 702.—S. F. I, 248; II, 299.
898. Himantopus candidus, *Bonn.*—Jerd. III, 704.—S. F. I, 248; III, 183.
899. Recurvirostra avocetta, *Lin.*—Jerd. III, 706.—S. F. I, 248; IV, 18.
900. Parra indica, *Lath.*—Jerd. III, 708.—S. F. III, 183; IV, 19; VI, 464.
901. Hydrophasianus chirurgus, *Scop.*—Jerd. III, 709.—S. F. I, 249; III, 185; IV, 20; VI, 464; VII, 489. [20; VI, 464; VII, 22.
902. Porphyrio poliocephalus, *Lath.*—Jerd. III, 713.—S. F. I, 249; III, 185; IV,
903. Fulica atra, *Lin.*—Jerd. III, 715.—S. F. I, 249; VI, 465.
903 *bis*. Podica personata, *G. R. Gr.*—S. F. III, 185; VI, 465.
904. Gallicrex cinereus, *Gm.*—Jerd. III, 716.—S. F. II, 300; III, 187; VI, 466.
905. Gallinula chloropus, *Lin.*—Jerd. III, 718.—S. F. I, 250; VI, 466.
906. *Gallinula burnesi*, *Bly.*—Jerd. III, 719.—S. F. I, 250.
907. Erythra phœnicura, *Penn.*—Jerd. III, 720.—S. F. II, 300.
908. Porzana akool, *Sykes.*—Jerd. III, 722.—S. F. IV, 21.
909. Porzana maruetta, *Leach.*—Jerd. III, 722.—S. F. I, 251; VII, 489. [489.
910. Porzana bailloni, *Vieill.*—Jerd. III, 723.—S. F. I, 251; II, 301; VI, 467; VII,
910 *bis*. Porzana parva, *Scop.*—S. F. I, 251.
? 910 *ter*. Porzana cinerea, *Vieill.*—S. F. VII, 440, 451.
? 910 *quat*. Crex pratensis, *Bechst.*—S. F. VII, 440, 464.
911. Porzana fusca, *Lin.*—Jerd. III, 724.—S. F. III, 188, 500.
911 *bis*. Porzana bicolor, *Wald.*—S. F. III, 283. [IV, 405; VII, 465.
912. Rallina euryzonoides, *Lafr.*—Jerd. III, 725.—S. F. I, 440; III, 188;
912 *bis*. Rallina fasciata, *Raffl.*—S. F. III, 188; VI, 467.
912 *ter*. Rallina canningi, *Tyt.*—S. F. I, 86; II, 500.
913. Hypotænidia striata, *Lin.*—Jerd. III, 726.—S. F. VI, 468.
913 *bis*. Hypotænidia obscuriora, *Hume.*—S. F. II, 302; IV, 294.
913 *ter*. *Hypotænidia abnormis*, *Hume.*—S. F. III, 389; IV, 294.
914. Rallus indicus, *Bly.*—Jerd. III, 726.—S. F. III, 416.
914 *bis*. *Rallus aquaticus*, *Lin.*—S. F. III, 416.

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915. Leptoptilus argalus, *Lath.*—Jerd. III, 730.—S. F. I, 252 ; IV, 21 ; VI, 468*n*.
916. Leptoptilus javanicus, *Horsf.*—Jerd. III, 732.
917. Xenorhynchus asiaticus, *Lath.*—Jerd. III, 734.—S. F. III, 189.
918. Ciconia nigra, *Lin.*—Jerd. III, 735.—S. F. I, 252 ; IV, 22.
919. Ciconia alba, *Bechst.*—Jerd. III, 736.—S. F. IV, 22.
920. Dissura episcopa, *Bodd.*—Jerd. III, 737.—S. F. III, 189 ; IV, 22 ; VI, 469.
921. Ardea goliat, *Tem.*—Jerd. III, 739.—S. F. I, 105 ; VII, 490.
922. Ardea fusca, *Bly.*—Jerd. III, 740.—S. F. VI, 471.
922 *bis*. Ardea sumatrana, *Raffl.*—S. F. VI, 469.
923. Ardea cinerea, *Lin.*—Jerd. III, 741.—S. F. I, 253.
924. Ardea purpurea, *Lin.*—Jerd. III, 743.
924 *bis*. Herodias alba, *Lin.*—S. F. VI, 474, 480.
925. Herodias torra, *B.-Ham.*—Jerd. III, 744.—S. F. VI, 472, 480.
926. Herodias intermedia, *Hass.*—Jerd. III, 745.—S. F. VI, 476, 480.
927. Herodias garzetta, *Lin.*—Jerd. III, 746.—S. F. VI, 476, 480.
927 *bis*. Herodias eulophotes, *Swinh.*—S. F. VI, 478, 480. [465 ; VII, 453.
928. Demiegretta gularis, *Bosc.*—Jerd. III, 747.—S. F. I, 254 ; II, 309 ; IV, 23,
928 *bis*. Demiegretta sacra, *Gm.*—S. F. I, 87 ; II, 304.
929. Bubulcus coromandus, *Bodd.*—Jerd, III, 749.
930. Ardeola grayi, *Sykes.*—Jerd. III, 751.—S. F. VI, 482.
930 *bis*. Ardeola prasinoscelis, *Swinh.*—S. F. II, 483 ; VI, 481.
931. Butorides javanica, *Horsf.*—Jerd. III, 752.—S. F. I, 256 ; II, 310 ; III, 191.
932. Ardetta flavicollis, *Lath.*—Jerd. III, 753.—S. F. III, 191 ; VI, 483.
933. Ardetta cinnamomea, *Gm.*—Jerd. III, 755.—S. F. II, 311 ; VI, 483.
934. Ardetta sinensis, *Gm.*—Jerd. III, 755.—S. F. I, 308 ; II, 311.
935. Ardetta minuta, *Lin.*—Jerd. III, 756.—S. F. I, 256.
936. Botaurus stellaris, *Lin.*—Jerd. III, 757.—S. F. I, 256 ; IV, 24 ; VII, 526.
936 *bis*. Goisakius melanolophus, *Raffl.*—S. F. II, 312 ; VII, 524.
937. Nycticorax griseus, *Lin.*—Jerd. III, 758.—S. F. IV, 415*n*.
938. Tantalus leucocephalus, *Forst.*—Jerd. III, 761.—S. F. VII, 309, 507.
939. Platalea leucorodia, *Lin.*—Jerd. III, 763.—S. F. I, 256.
940. Anastomus oscitans, *Bodd.*—Jerd. III, 765.—S. F. IV, 212.
941. Ibis melanocephala, *Lath.*—Jerd. III, 768.
942. Inocotis papillosus, *Tem.*—Jerd. III, 769.
942 *bis*. Graptocephalus davisoni, *Hume.*—S. F. III, 300 ; VI, 485.
943 Falcinellus igneus, *S. G. Gm.*—Jerd. III, 770.—S. F. I, 257.
944. Phœnicopterus antiquorum, *Tem.*—Jerd. III, 775.—S. F. I, 257.
944 *bis*. Phœnicopterus minor, *G. St.-Hil.*—S. F. I, 31, 401 ; II, 339 ; IV, 25.
944 *ter*. Cygnus olor, *Gm.*—S. F. VII, 99, 101, 106.
944 *quat*. *Cygnus ferus*, *Leach.*—S. F. VII, 106, 464.
944 *quint*. Cygnus bewickii, *Yarr.*—S. F. VII, 107, 464.
945. Anser cinereus, *Mey.*—Jerd. III, 779.—S. F. I, 258 ; IV, 26, 197 ; VII, 491.
945 *bis*. Anser segetum, *Gm.*—S. F. VII, 441.
946. Anser brachyrhynchus, *Baill.*—Jerd. III, 780.
947. Anser albifrons, *Scop.*—Jerd. III, 780.—S. F. I, 259.
948. Anser minutus, *Naum.*—Jerd. III, 781.
949. Anser indicus, *Lath.*—Jerd. III, 782.—S. F. IV, 499 ; VII, 491.
950. Sarcidiornis melanonotus, *Penn.*—Jerd. III, 785.—S. F. IV, 27 ; VI, 483.
951. Nettopus coromandelianus, *Gm.*—Jerd. III, 786.—S. F. IV, 27 ; VII, 491.
952. Dendrocygna javanica, *Horsf.*—Jerd. III, 789.—S. F. VI, 486.

953. Dendrocygna fulva, *Gm.*—Jerd. III, 790.—S. F. VII, 463.
954. Casarca rutila, *Pall.*—Jerd. III, 791.—S. F. I, 260 ; IV, 198.
955. Casarca scutulata, *S. Müll.*—Jerd. III, 793.—S. F. VI, 489.
956. Tadorna cornuta, *S. G. Gm.*—Jerd. III, 794.—S. F. I, 260 ; VII, 492.
957. Spatula clypeata, *Lin.*—Jerd. III, 796.—S. F. IV, 199.
958. Anas boschas, *Lin.*—Jerd. III, 798.—S. F. I, 261 ; IV, 199.
959. Anas pœcilorhyncha, *Forst.*—Jerd. III, 799.—S. F. IV, 29 ; VII, 507.
960. Rhodonessa caryophyllacea, *Lath.*—Jerd. III, 800.—S. F. VII, 492, 527.
961. Chaulelasmus streperus, *Lin.*—Jerd. III, 802. [523.
961 *bis.* Chaulelasmus angustirostris, *Ménétr.*—S. F. I, 262 ; III, 273 ; VII, 493,
962. Dafila acuta, *Lin.*—Jerd. III, 803.—S. F. I, 261 ; IV, 29, 200.
963. Mareca penelope, *Lin.*—Jerd. III, 804.—S. F. I, 261 ; IV, 30 ; VII, 494.
964. Querquedula crecca, *Lin.*—Jerd. III, 806.
965. Querquedula circia, *Lin.*—Jerd. III, 807.—S. F. IV, 201.
966. Querquedula formosa, *Geor.*—Jerd. III, 808.—S. F. VII, 494.
966 *bis.* Querquedula falcata, *Geor.*—S. F. IV, 225 ; VII, 494.
966 *ter.* Querquedula gibberifrons, *S. Müll.*—S. F. I, 88, 303 ; II, 316.
967. Fuligula rufina, *Pall.*—Jerd. III, 811.—S. F. IV, 201.
968. Fuligula ferina, *Lin.*—Jerd. III, 812.
969. Fuligula nyroca, *Güld.*—Jerd. III, 813.—S. F. IV, 202 ; VII, 493.
970. Fuligula marila, *Lin.*—Jerd. III, 814.
971. Fuligula cristata, *Lin.*—Jerd. III, 815.
971 *bis.* Clangula glaucium, *Lin.*—S. F. IV, 225 ; VII, 441, 464.
972. Mergus merganser, *Lin*—Jerd. III, 817.—S. F. I, 422 ; II, 336, 439 ; IV, 202, 496 ; V, 323 ; VII, 149.
973. Mergellus albellus, *Lin.*—Jerd. III, 818.—S. F. I, 265 ; IV, 31, 202.
974. Podiceps cristatus, *Lin.*—Jerd. III, 821.—S. F. I, 142, 265 ; IV, 31, 203.
974 *bis.* Podiceps nigricollis, *Sund.*—S. F. I, 142, 266.
975. Podiceps minor, *Gm.*—Jerd. III, 822.—S. F. I, 268 ; IV, 203.
975 *bis.* Prion————?—S. F. II, 317 ; V, 304.
975 *ter.* Daption capensis, *Lin.*—S. F. VII, 442, 463. [490 ; VII, 178.
976. Oceanites oceanicus, *Banks.*—Jerd. III, 827.—S. F. III, 375 ; V, 291 ; VI,
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976 *ter.* Puffinus———, *Legge.*—S. F. III, 374.
977. Pelecanoides urinatrix, *Lath.*—Jerd. III, 827.
977 *bis.* Stercorarius pomarinus, *Tem.*—S. F. VI, 490.
977 *ter.* Stercorarius asiaticus, *Hume.*—S. F. I, 268 ; V, 294.
978. *Larus fuscus, Lin.*—Jerd. III, 830.—S. F. IV, 502.
978 *bis.* Larus cachinnans, *Pall.*—S. F. I, 270 ; VII, 463.
978 *ter.* Larus affinis, *Reinh.*—S. F. I, 273 ; VII, 463.
979. Larus ichthyaëtus, *Pall.*—Jerd. III, 831.—S. F. I, 276. [491.
980. Larus brunneicephalus, *Jerd.*—Jerd. III, 832.—S. F. I, 278 ; IV, 203 ; VI,
981. Larus ridibundus, *Lin.*—Jerd. III, 832.—S. F. I, 278.
981 *bis.* *Larus minutus, Pall.*—S. F. VII, 443.
981 *ter.* Larus hemprichi, *Bp.*—S. F. I, 279 ; IV, 414 ; V, 296.
981 *quat.* Larus gelastes, *Licht.*—S. F. I, 274.
982. Sterna caspia, *Pall.*—Jerd. III, 835.—S. F. I, 280 ; III, 347.
983. Sterna anglica, *Mont.*—Jerd. III, 836.—S. F. I, 281. [VII, 445.
984. Hydrochelidon hybrida, *Pall.*—Jerd. III, 837.—S. F. III, 348 ; IV, 224 ;
984 *bis.* Hydrochelidon leucoptera, *Meis. & Sch.*—S. F. VII, 445.

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984 *ter*. Hydrochelidon nigra, *Lin.*—S. F. VII, 445, 446.
985. Sterna seena, *Sykes.*—Jerd. III, 838.—S. F. I, 281.
985 *bis*. Sterna dougalli, *Mont.*—S. F. II, 317; III, 376; IV, 246*n*.
986. Sterna fluviatilis, *Naum.*—Jerd. III, 839.—S. F. I, 282; IV, 472*n*.
986 *bis*. Sterna longipennis, *Nordm.*—S. F. IV, 472.
987. Sterna melanogastra, *Tem.*—Jerd. III, 840.—S. F. III, 348; VI, 492.
987 *bis*. Sterna albigena, *Licht.*—S. F. IV, 467; V, 298, 323.
988. *Sterna minuta, Lin.*—Jerd. III, 840.—S. F. V, 325.
988 *bis*. Sterna sinensis, *Gm.*—S. F. III, 282; V, 325.
988 *ter*. Sterna saundersi, *Hume.*—S. F. IV, 469; V, 326.
988 *quat*. Sterna gouldi, *Hume.*—S. F. V, 326; VII, 314.
989. Sterna bergii, *Licht.*—Jerd. III, 842.—S. F. I, 283; IV, 470; V, 298.
990. Sterna media, *Horsf.*—Jerd. III, 843.—S. F. I, 284; II, 318; IV, 474;
990 *bis*. Sterna cantiaca, *Gm.*—S. F. I, 285. [V, 301.
? 990 *ter*. Gygis alba, *Sparrm.*—S. F. VII, 447.
991. Sterna sumatrana, *Raffl.*—Jerd. III, 844.—S. F. II, 319.
992. Sterna anaetheta, *Scop.*—Jerd. III, 844.—S. F. II, 320; IV, 474; V, 301, *n*.
992 *bis*. Sterna fuliginosa, *Gm.*—S. F. I, 440; IV, 477.
993. Anous stolidus, *Lin.*—Jerd. III, 845.—S. F. II, 320; IV, 478.
994. Anous tenuirostris, *Tem.*—Jerd. III, 846.—S. F. IV, 480.
994 *bis*. Anous leucocapillus, *Gould.*—S. F. II, 322; IV, 480.
995. Rhynchops albicollis, *Sws.*—Jerd. III, 847.—S. F. VII, 99.
996. Phaeton rubricaudus, *Bodd.*—Jerd. III, 849.—S. F. II, 322.
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997. Phaeton flavirostris, *Brandt.*—Jerd. III, 850.—S. F. II, 323; V, 498.
998. Sula australis, *Steph.*—Jerd. III, 851.—S. F. IV, 483; V, 318.
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1002. *Pelecanus mitratus, Licht.*—Jerd. III, 856.—S. F. I, 128.
1003. Pelecanus javanicus, *Horsf.*—Jerd. III, 857.—S. F. VI, 494.
1004. Pelecanus philippensis, *Gm.*—Jerd. III, 858.—S. F. VI, 495.
1004 *bis*. Pelecanus crispus, *Bruch.*—S. F. I, 288; VII, 448.
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1006. Phalacrocorax fuscicollis, *Steph.*—Jerd. III, 862.—S. F. VII, 178.
1007. Phalacrocorax pygmæus, *Pall.*—Jerd. III, 863.
1008. Plotus melanogaster, *Penn.*—Jerd. III, 865.

(*The above corrected up to 1st March* 1879).

[*P.S.*—Although incredible pains have been taken in correcting the proofs, I fear that some typographical errors may still remain.]

INDEX TO THE ABBREVIATIONS OF THE NAMES OF AUTHORITIES GIVEN IN THE FOREGOING LIST.

[*With the names and dates of some of the older authors' more important works, which most specially concern us.*]

Adams	... Dr. A. Leith Adams.	
Anders.	... Dr. John Anderson.	
Anders., A.	Andrew Anderson.	
Armstr.	... Dr. James Armstrong.	
Audouin	... J. V. Audouin.	
Baill.	... ?* L. A. J. Baillon.	
Ball	... Valentine Ball.	
Banks	... Sir Joseph Banks.	
Bart.	... ? B. Sm. Barton.	
Beav.	... Captain R. C. Beavan.	
Bechst.	... J. M. Bechstein.	... Gemeinnützige Naturgeschichte Deutschlands, 1789-95. 1*st Edn.*; 1801-1809, 2*nd Edn. Fig.* Naturgeschichte der Stuben vögel, 1812; Ornithologisches Taschenbuch, 1803.
B. Ham.	... Fr. Ham. Buchanan-Hamilton.	
Blanf.	... W. T. Blanford.	
Blas.	... Dr. J. H. Blasius.	
Bly.	... Edward Blyth.	
Bodd.	... M. Boddaert.	... Table des Planches enluminées d'Histoire Naturelle de M. d'Aubenton, 1783.
Boie	... H. Boie.	... Briefe geschr. aus Ost-Ind. 1832.
Bonn.	... L'Abbé Bonnaterre.	... Table Encyclopédique et Méthodique des trois Règnes de la Nature, 1788-90.
Bosc.	... L. A. G. Bosc.	
Bp.	... Prince Charles Lucian Bonaparte.	Conspectus Generum Avium, 1850-57.
Brandt	... J. F. Brandt.	
Brehm	... Chr. L. Brehm.	... Beitrage zur Vögelkunde, 1820-22; Lehrbuch der Naturgeschichte aller Europäischen Vögel 1823-24; Handbuch der Naturgeschichte aller Vögel Deutschlands, 1831; Vögelfang, 1855.
Brooks	... William Edwin Brooks.	
Bruch	... ? Bruch.	... Various papers in the *Isis*, 1824-32

* In this and other cases in which I have prefixed a note of interrogation, I have been unable, at the moment, to make *sure* of the initials of the authority quoted.

Burt. ...	E. Burton.	
Cab. ...	Dr. Jean Cabanis.	
Cass. ...	John Cassin.	
Cuv. ...	George L.C.F.D. Cuvier.	Le Règne Animal, 1817, 1st Edn. 1829-30, 2nd Edn.—Griffith's English Version, 1824.
Daud. ...	W. M. Daudin. ...	Traité d'Ornithologie, 1800.
Deless. ...	Adolphe Delessert.	
Desf. ...	R. L. Desfontaines.	
Drap. ...	? Drapiez. ...	Histoire Naturelle des Oiseaux 1829.
Dress. ...	H. E. Dresser.	
Dum. ...	A. M. C. Duméril. ...	Traité Elémentaire d'Histoire, Naturelle, 1804, 1st Edn.
Ehr. ...	C. G. Ehrenberg. ...	(With Hemprich) Symbolæ Physicæ, seu Icones et Descriptiones Avium, &c., 1828.
Ell. ...	Daniel Giraud Elliot.	
Eversm. ...	Dr. Edouard Eversmann.	Addenda ad Zoographiam Rosso-Asiaticam, 1835, 1841, 1842.—Papers on Birds and Mammals of Russia in the Bull. der Naturforsch. Gesselsch. Moscow, 1848-53.
Eyt. ...	T. C. Eyton.	
Fairb. ...	The Revd. S. B. Fairbank.	
Fleisch. ...	E. G. Fleischer. ...	Quoted by Naumann, as the authority for the specific name *naumanni* of the Lesser Kestril.
Forst. ...	John Reinhold Forster....	Zoologia Indica, 1781, 1st Edition, and incorporating 3 plates of Pennant's not published by the latter in the 1769 Edn. as well as the 12 that were then published.
Frankl. ...	James Franklin.	
G.-Aust....	Major H. H. Godwin-Austin.	
Geoff. ...	? Geoffroy. ...	Quoted by Vieillot as the authority for the specific name of *Æsacus magnirostris*.
Geor. ...	J. G. Georgi. ...	Reise im Russichen Reiche, 1775.
Gerv. ...	Paul Gervais. ...	(It is very doubtful whether he or G. St. Hil. gave the specific name *kieneri*.)
Gm. ...	Jo. Frid. Gmelin. ...	Revised or 13th Edn. of Linné's Syst. Nat, 1788.
Gm. S. G.	S. G. Gmelin. ...	Reise durch Russland, 1770-74.
Gould ...	John Gould. ...	A century of birds from the Himalayan Mountains, 1832. The Birds of Europe, 1832-37. Birds of Australia, 1840-48. Birds of Asia, 1850-78.
Gr. G. R.	George Robert Gray. ...	The Genera of Birds, 1844-49.

Gr. J. E.	John Edward Gray. ...	Illustrations of Indian Zoology (with Genl. Hardwicke,) 1830.
G. St. Hill.	Isidore Geoffroy St. Hillaire.	
Güld. ...	Ant. J. Güldenstädt. ...	Various papers in the Novi Comentarii and the Acta, Academiæ Scientiarum Imperialis Petropolitanæ, 1770-86.
Gurn. ...	J. H. Gurney.	
Hardw. ...	General Hardwicke. ...	(See J. E. Gray.)
Hartl. ...	Dr. Gustav Hartlaub.	
Hass. ...	Van Hasselt.	
Hay ...	Lord Arthur Hay. ...	Afterwards Lord Walden, and later Marquess of Tweeddale.
Hedenb. ...	? Hedenborg.	
Hein. ...	Ferdinand Heine.	
Hemp. ...	F. G. Hemprich. ...	(With Ehrenberg) Symbolæ Physicæ, seu Icones et Descriptiones Avium, 1828.
Herm. ...	J. Hermann. ...	Observationes Zoologicæ Posthumæ, 1804.
Hodgs. ...	Brian H. Hodgson.	
Holdsw. ...	E. W. H. Holdsworth.	
Horsf. ...	Dr. Thomas Horsfield. ...	Birds of Java, Trans. Linnean Society, XIII, pp. 133-200, read April 1820, published 1821. Zoological Researches in Java, 1824.
Hume ...	Allan Hume.	
Hutt. ...	Captain Thomas Hutton.	
Ill. ...	C. Illiger.	Prodromus Systematis mammaliam et Avium, 1811.
Jam. ...	? Robert Jameson.	
Jard. ...	Sir William Jardine.	
Jerd. ...	Dr. T. C. Jerdon. ...	Birds of India, 1862-64.
Kel. ...	Dr. Kelaart.	
Koch ...	C. L. Koch. ...	System der Baierischen Zoologie, 1816.
Kuhl ...	Heinrich Kuhl. ...	Buffonii et Daubentonii Figurarium Avium coloratarium nomina Systematica, 1820.
Lafr. ...	Baron Frederic de Lafresnaye.	
Lath. ...	John Latham. ...	A general synopsis of Birds, 1781-85; Supple. I, 1787; II, 1802. Index Ornithologicus, 1790; Supple. 1801. A General History of Birds, 1821-24.
Lay. ...	Edgar Leopold Layard.	
Leach ...	William Elford Leach.	
Legge ...	Captain W. Vincent Legge, R.A.	

Leisl. ...	J. P. A. Leisler.	
Less. ...	René Primivère Lesson.	Manuel d'Ornithologie, 1828. Traité d'Ornithologie, 1831.
Licht. ...	Heinrich Lichtenstein. ...	Reisen im Sudlichen Africa, 1811. Das Zoologische Museum der Universität zu Berlin, 1816. Verzeichniss der Doubletten des Zoologischen Museums idem, 1823.
Lin. ...	Carl *v.* Linné. ...	Systema Naturæ, 12th Edn. (from which, according to the British Association Code, all specific nomenclature starts,) 1766.
Ljung ...	Iven Ingemar Ljung. ...	Papers in the Kongliga Svenska Vetenskaps Akademiens Nya Handlingar, 1797-1813.
McClell....	Dr. J. MacClelland.	
Malh. ...	Alfred Malherbe. ...	Monographie des Picidées, 1861.
Mand. ...	L. Mandelli.	
Marm. ...	Alb. de la Marmora.	
Marsh. ...	Cap. G. F. L. Marshall, R.E.	
Meis. & Sch.	Fr. Meissner and H. R. Schinz.	Die Vögel der Schweiz, 1815.
Ménétr. ...	Ed. Ménétries. ...	Cat. raisonné des objets de Zoologie recueilles das un Voyage au Caucase et jusqu'aux frontières actuelles de la Perse, 1832.
Mey. ...	Bern. Meyer.	
Mich. ...	C. Michahelles.	
Mont. ...	George Montagu. ...	Ornithological Dictionary, 1802. Supplement, 1813.
Moore ...	Frederic Moore.	
Müll., P. L. S.	Ph. L. St. Müller. ...	Supplement to LINNÉ's Systema Naturæ, 1776.
Müll., S....	S. Müller. ...	(With TEMMINCK, *q. v.*) & Paper on Sumatra; Tijdsch. v. Nat. Gesch. IV, 1835.
Naum. ...	J. A. Naumann. ...	Naturgeschichte der Vögel Deutschlands, 1820-42, completed by his son J. F. Naumann.
Nev. ...	Hugh Nevil.	
Nordm. ...	Al. V. Nordmann.	
Osb. ...	Peter Osbeck. ...	A Voyage to China and the East Indies, 1771. (The original Swedish, and later German Editions are pre-Linnæan.)
Pall. ...	P. S. Pallas. ...	Reise durch verschiedene Provinzen des Russischen Reiches, 1771-76. Zoographia Rosso-Asiatica, 1st vol., 1811, rest 1831.
Payk. ...	Gust. Paykull.	
Peale ...	R. Titian Peale.	

Pears.	Dr. J. T. Pearson.	
Penn.	Thomas Pennant.	Indian Zoology, 1769, 1st Edn.
Radde	Professor Gustav Radde.	
Raffl.	Sir Thomas Stamford Raffles.	Catalogue of Birds of Sumatra Transactions of the Linnæan Society, XIII., pp. 277—330; Read March, 1821; published, 1822.
Rafin.	? C. S. Rafinesque-Schmaltz.	
Reich.	? H. G. L. Reichenbach.	
Reinh.	Professor J. Reinhardt.	
Reinw.	? Reinwardt.	Temminck often adopted his MSS names; was this C. G. C. ?
Royle	Dr. J. F. Royle.	
Rüpp.	Dr. Edward Rüppell.	Atlas zu der Reise im Nördlichen Africa; 1826-8; Neue Wirbelthiere zu der Fauna, von Abyssinien gehörig, 1835-40; Systematische Übersicht der Vögel Nord-Ost-Afrika's, 1845.
Salvad.	Count Tommaso Salvadori.	
Sav.	J. Ces. Savigny.	
Savi	P. Savi.	
Schl.	Dr. Hermann Schlegel.	
Sclat.	Dr. Philip Lutley Sclater.	
Scop.	J. Ant. Scopoli.	Deliciæ Floræ et Faunæ Insubricæ, &c., 1786-88.
Selb.	Prideaux John Selby.	
Sharpe	Robert Bowdler Sharpe.	
Shaw	G. Shaw.	General Zoology, completed by Stephens, q. v., 1810-1815.
Shell.	Captain G. E. Shelley.	
Sparrm.	Anders Sparrmann.	Museum Carlsonianum, 1786-88.
Stanl.	Edward Stanley.	(Bishop of Norwich).
Steph.	James Francis Stephens.	Continuation of Shaw's General Zoology, 1815-1828.
Stol.	Dr. Ferdinand Stoliczka.	
Strickl.	H. E. Strickland.	
Sund.	Carl J. Sundevall.	Conspectum Avium Picinarum, 1866. Methodi Naturalis Avium disponendarum tentamen, 1872.
Swinh.	Robert Swinhoe.	
Sws.	William Swainson.	
Sykes	Col. W. H. Sykes.	Catalogue of birds of the Dukhun P. Z. S., 1832.

Tem. ... C. J. Temminck.	...	Histoire Naturelle des Pigeons et Gallinaces, 1813-15. Manuel d'Ornithologie, 1st Edn. 1815; 2nd Edn. 1820-1835. Nouveau Recuil de Planches coloriées d'Oiseaux, 1820-44.—(with Schlegel and S. Müller) Verhandelingen over de natuurlijke Geschiedenis der Nederlandische overzeesche bezittingen, 1839-44—(with Schlegel) Fauna Japonica, 1850.
Tick. ... Col. S. R. Tickell.		
Tunst. ... ? Tunstall.		
Tweed. ... Marquess of Tweeddale..		Earlier Lord Walden and Lord A. Hay.
Tyt. ... Col. Robert Tytler.		
Vahl ... Mart. Vahl.	...	Paper in Skrivter af Naturhistorie-Selskabet, 1797.
Valenc. ... ? A. Valenciennes.		
Verr. ... Jules Verreaux.		
Vieill. ... L. P. Vieillot.	...	Analyse d'une nouvelle Ornithologie Elémentaire, 1816; Galerie des Oiseaux du Cabinet d'Histoire Naturelle du Jardin du Roi, 1820-26.
Vig. ... N. A. Vigors.		
Wagl. ... Dr. Joannes Wagler.		Systema Avium, 1827.
Wald. ... Viscount Walden.	...	Earlier Lord Arthur Hay; later Marquess of Tweeddale.
Wall. ... Alfred Russel Wallace.		
West. ... Dr. G. F. Westermann.		
W.-Rams. R. G. Wardlaw-Ramsay.		
Yarr. ... W. Yarrell.		A history of British Birds, 1843 1st Edn.

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STRAY FEATHERS.

Vol. VIII. **OCTOBER 1879.** **Nos. 2—5.**

The Birds of the Western Half of the Malay Peninsula.

Second Notice.

In my first tentative list of the birds of the western half of the Malay Peninsula I enumerated 408 species; we have now to add 47 other species, which *undoubtedly* occur in the Malay Peninsula, making a total of 455 species.

Out of the birds formerly enumerated, I considered the occurrence of 20, or their validity as species, doubtful. One of these, *Euptilosus euptilosus*, I now unhesitatingly identify with *Criniger tristis* already entered. Thus reducing the total to 454, and the number of doubtful birds to 19.

Of these latter we have procured one, *Dissura episcopa*, and one *Accipiter stevensoni* ought not to have been entered as doubtful, so that our list stands now at 437 species, the occurrence of which we, *pro tem*, accept, plus 17 of which we are doubtful.

We had formerly ourselves collected specimens of 301 species (erroneously printed 302, *ante* p. 42). We have now collected specimens of 27 more of the species entered in our first list, and 44 out of the 47 species that we are now adding to the list, making a total of 372 species, of which we have actually procured specimens against a total of 437 that we admit.

Out of the 437 species there are only 119 that do not, so far as we know, occur within the Indian Empire elsewhere than in the Malay Peninsula, and even out of these there are a few, like *Sphenocercus oxyurus* and *S. korthalsi*, of which, though I have not entered them as doubtful, I yet think the occurrence in the Malay Peninsula needs verification. Specimens may, doubtless, have been sent from Malacca, but as we now well know, in former times especially, many birds were brought from Sumatra and other Islands to Malacca and Singapore, and sent thence intermingled with local collections without any tickets or anything in fact to indicate that they had not been locally procured. I may here mention that, though we have two

specimens of *Anthreptes rhodolæma*, one from Malacca and one from Singapore, I find that both were purchased, and as none of our people have since come across the species anywhere, I begin to doubt whether these also may not have been imported specimens.

I will now give one list of the 47 species which have to be added to our first list, and another of the 27 species included in the first list, and of which we had then obtained no specimens, but of which we have since procured these, and I will add a few notes on, and necessary corrections to, the first list.

Species to be added to the List.

In this list, as in the previous one, the names of species occurring elsewhere within the limits of the Empire are printed in italics, while the names of those which are not yet known to occur anywhere within our limits, except in the Malay Peninsula, are printed in roman type; of these it will be seen that there are only six in the present list.

The great majority of the species we have now to add are, it will be seen, Indian or Indo-Burmese species, which we have obtained in the northern portions only of the Peninsula.

It is early as yet to attempt any generalization, but we are inclined to believe that just as further north a line drawn some little way south of Tavoy indicates approximately the southern boundary of some, and the northern boundary of a good many other species, here a line drawn somewhere to the north of Keddah near the narrowest portion of the Peninsula indicates also the boundaries north and south, respectively, of a good number of species.

* 22 *bis.*—*Astur rufitinctus, McClell.*

[Kussoom.]

Kussoom is in the northern portion of the Malay Peninsula, and the place where this specimen (which is a typical *rufitinctus*) was shot, is not a hundred miles south of Victoria Point, the southernmost point of the main land of Tenasserim.

* 96.—*Chætura indica, Hume.*

[Salang, Tonka Is.]

This again was obtained in the north at Salang on the Island of Tonka or Junk Ceylon, in 8° N. Lat. Therefore only 2° south of the southernmost point of the main land of Tenasserim.

* 142.—*Hydrocissa albirostris, Shaw.*

[Tonka, 8° N. Lat.]

* 153.—*Loriculus vernalis, Sparrm.*

[Tonka.]

* 163 *bis A.*—Yungipicus variegatus, *Wagl.* (? *Y. fusco-albidus*, Salvad. U. di B., 42.)

[Klang, 3° N. Lat.]

In the birds of Tenasserim, pp. 125, 126, I doubtfully united *Yungipicus canicapillus*, Blyth, which occurs throughout the Malayan Peninsula from the extreme north to the extreme south, with *variegatus*, of Latham *apud* Wagler (Syst. Av. Gen. Pic. Sp. 27, *nec* Latham). I did this as I explained, because this *variegatus* was said to be common in the Malay Peninsula and Sumatra, and because this *canicapillus* was the only species we had met with or seen from either of these localities; but I said: "Is it possible that a second smaller race occurs both in Sumatra and the Malay Peninsula, and that *canicapillus*, a distinct and larger race, also extends to both these?"

We have now procured a single specimen of this smaller and unquestionably distinct race.

This specimen agrees perfectly with Wagler's description. It has no trace of grey whatsoever on the crown, which, with the ground color of the whole of the upper surface (except the back of the neck which is darker), is, as Wagler says, "*fuligi-noso-fuscus*," a regular smoky brown; whereas the crown of *canicapillus* is a distinct grey, sometimes browner, sometimes whiter, and the ground color of the whole upper surface almost black.

Again of an enormous series no specimen of *canicapillus* has the wing less than 3·0; only one has it less than 3·1; several run to 3·3 and one or two exceed this. In the present species the wing is barely 2·9, though the specimen is an adult male.

Wallace gives the wing of his *sondaicus* as 2·88, and I should not have doubted that his species was the one that I have obtained, were it not that Wallace says that *his sondiacus* is the bird figured by Malherbe as *moluccensis*, whereas *our* bird agrees perfectly with Malherbe's figure of *variegatus*, but is not yellow underneath nor nearly so dark above as his figure of his *moluccensis*. The true *moluccensis*, according to Wallace, has the wing only 2·25. I am, therefore, unable to make certain which species Salvadori refers to as *moluccensis*, since he unites under this both *variegatus*, Wagler, of which the latter gives the wing at 2 inches 8 lines, of the old Paris foot, equals 3·02 English, with *moluccensis*, of which Wallace gives the wing as 2·25, at

the same time declaring that this is perfectly represented by *Pl. Enl.* 748, fig. 2, in which the wing is shown as 3·3!

The whole thing needs elucidation. All that is certain is, that, first *Yungipicus canicapillus*, Blyth, occurs throughout Eastern Bengal, Assam, Pegu, Tenasserim, the Malay Peninsula, and North-West Sumatra, and that *Y. aurantiiventris*, Salvadori, (Atti. R. Ac. Sc. Tor., III, 524, 1868, and U. di B., p. 41, Tav. IV. f. 2) is doubtfully distinct (*vide* S. F., VI., 500); that second we *have* in the Malay Peninsula a second smaller species which corresponds absolutely with Wagler's description of *variegatus*, and Malherbe's picture of this same species (which shows the wing as far as can be judged as 2·88); that third this may be *fusco-albidus*, and might have been assumed to be identical with *sondiacus*, of Wallace, did it not disagree in coloring with Malherbe's figure of his *moluccensis*, which Wallace himself states to represent his *sondiacus*; and, fourth, that Wallace's statement that the wing of true *moluccensis* is only 2·25 requires to be reconciled with Buffon's original figure, in which the wing is shown as 3·3.

* 166 *bis.*—*Chrysocolaptes strictus*, *Horsf.*

[Tonka.]

In my first list I entered *C. sultaneus*, Hodgson, doubtfully, and remarked that the Malayan bird would probably prove to be *C. strictus*, of Horsfield.

We have now obtained two specimens, males, clearly I think referable to this species. They are fine adults, the wings measure 6·15 and 6·3, and the bills at front 1·8 and 1·95, respectively. They are clearly too small for *sultaneus*, in which, in the smallest specimens, the wings are not less than 6·7, and which in fine adult males, like the present, run up to 7·45. In which the bills at front do not, in any adult, fall short of 2·0, and in fine adult males run up to 2·45. But these Malayan birds are absolutely inseparable from the Southern Indian birds, which in my list of the "Birds of India" (Vol. VIII., p. 15), I have recorded as *C. delesserti*, Malh. This name must now be suppressed, and that of *strictus*, of Horsfield, substituted. Malherbe himself says that he has seen numbers of *strictus* sent home by Jerdon from Southern India. What bird Malherbe intended to separate under his name *delesserti* neither his plates nor his description enable one to make sure, but I now believe that the specimens he had got hold of must have been the somewhat intermediate race which inhabits Burma, and which, though running larger than *strictus*, both of the Malay Peninsula and Southern India, is yet decidedly smaller than the true *sultaneus* of the Himalayas.

The dimensions of the three races will be found contrasted, S. F., III., 65.

I have always united the Burmese birds with *sultaneus*, to which they are nearer than to the Southern Indian and Malayan *strictus*; but I am pretty well convinced, after carefully re-reading Malberbe's remarks, that any one who desires to separate them must apply to them Malberbe's name *delesserti*.

I cannot discover that, except in the matter of size, there is any permanent and constant difference between the three races, though it may be that the Malayan *strictus* has, on the average, a less amount of red on the lower back and rump than the Burmese, Himalayan, and even Southern Indian forms. It may, therefore, be a question with many whether all should not be merged in one species, but the difference in size between the true *sultaneus* and *strictus* is so great that for the present I prefer to keep them separate.

* 190 *A.*—Indicator malayanus, *Sharpe*. P. Z. S. 1878, 794.

[Near Klang.]

We procured one specimen, a female, of this species, which I at once recognized as differing by the want of the yellow patch on the shoulder of the wing from Temminck's *I. archipelagicus*. Not feeling sure that the female of this latter might not thus differ from the male, I did not describe it as new. Mr. Sharpe, however, who has examined a female of *archipelagicus*, procured at Bintulu by Mr. Alfred Everett, assures us that the Malayan bird is distinct, and he has named it as above.

* 198 *ter.*—*Megalæma cyanotis, Bly.*

[Tonka Is. and Klang.]

* 211.—*Chrysococcyx maculatus, Gm.*

[Malacca and Klang.]

* 217 *quat.*—*Centrococcyx intermedius, Hume.*

[Kussoom and Tonka.]

It will be observed that we have met with this species only quite in the north of the Malay Peninsula.

* 254 *bis.*—*Upupa longirostris, Jerd.*

[Tonka Is.]

* 267.—*Hemipus picatus, Sykes.*

[Tonka Is. and Kussoom.]

* 278.—*Buchanga atra, Herm.*

[Tonka Is.]

These are clearly *atra* of the *albirictus* type, with well marked white rictal spots.

* 280.—*Buchanga longicaudata, Hay.*
[Tonka Is.]

* 280 *bis.*—*Buchanga pyrrhops, Hodgs.*
[Tonka Is.]

* 296.—*Hemichelidon sibiricus, Gm.*
[Dingding Is. and Klang.]

* 345 *ter.*—*Pitta megarhyncha, Schl.*
[Kussoom and Tonka Is.]

* 346 *bis.*—*Pitta gurneyi, Hume.*
[Tonka.]

* 355.—*Geocichla citrina, Lath.*
[Tonka.]

* 366 *A.*—Turdus naumanni, *Tem.*
[Singapore.]

* 452 *dec.*—*Iole viridescens, Bly.*
[Tonka.]

* 457 *quat.*—*Brachypodius cinereiventris, Bly.*
[Tonka.]

As already noticed, S. F., VI., 319, it is doubtful whether this very distinct *looking* form is specifically distinct.

* 463 *bis.*—*Phyllornis chlorocephalus, Wald.*
[Kussoom and Tonka Is.]

* 469.—*Irena puella, Lath.*
[Kussoom and Tonka Is.]

It will be observed that in the more northern portions of the Peninsula, it is the Indian species that we obtain.

* 472.—*Oriolus melanocephalus, Lin.*
[Tonka.]

* 538 *bis.*—*Prinia beavani, Wald.*
[Klang.]

* 593 *ter A.*—Budytes taivanus, *Swinh.* Ibis, 1863, 309; 1866, 138; 1871, 364.
[Klang.]

I have compared our birds with a large series of Chinese specimens sent me by Mr. Swinhoe, and there is no doubt that the birds are identical. In this Mr. Brooks also concurs.

Although, so far as I can yet judge, female breeding *taivanus* will prove difficult to separate from female breeding *cinereocapilla*, and the young may be almost inseparable from those of other allied species, adult male *taivanus* is thoroughly distinct from the other field yellow wagtails, *rayi*, *cinereocapilla*, *flava*, and *melanocephala*, and still more so from the yellow swamp wagtails, *citreola* and *calcaratus*.

I find by the way that Mr. Swinhoe himself states that Gould had a specimen of this species from Singapore.

* 630.—*Herpornis xantholeucus, Hodgs.*

[Tonka.]

* 782.—*Alsocomus puniceus, Tick.*

[Tonka.]

* 846.—*Ægialitis geoffroyi, Wagl.*

[Tonka, Klang, Singapore.]

* 860.—*Strepsilas interpres, Lin.*

[Jurrum, Klang.]

873.—*Rhynchæa bengalensis, Lin.*

Although we ourselves procured no specimens, Lieutenant Kelham, of H. M.'s 74th Highlanders, shot it in Perak.

* 875 *A.*—Limosa melanuroides, *Gould.*

[Malacca.]

This appears to be a very distinct species; the plumage is no doubt very similar, but the difference in size between this and any and every specimen of *L. ægocephala* is very marked. I do not know that this small species occurs anywhere else, I mean outside the Malay Peninsula, within the limits of our Eastern Empire.

* 881 *bis.*—*Tringa crassirostris, Tem.* and *Schl.*

[Jurrum, Klang.]

* 884.—*Tringa minuta, Leisl.*

[Tonka, Jurrum, Klang.]

* 884 *ter.*—*Tringa albescens, Tem.*

[Tonka, Jurrum, Klang.]

The bird I call *ruficollis* is at once distinguishable amongst other things by its long toes. There is no difficulty about it; of it also, as I have noted elsewhere, we have obtained numerous specimens, but *minuta* and *albescens* are barely to be separated except in summer plumage. We fortunately obtained some specimens of both in summer plumage.

In separating *T. minuta* and *albescens* in summer plumage the red throat and the brown mottled breast at once distinguish the latter; but in winter plumage it is to a great extent guess work; but it has appeared to us that in *albescens* the bills are shorter, that the tertiaries also are shorter, and, lastly, that the tarsi are somewhat shorter. But of these three points, judging from our summer-plumaged individuals, the shortness of the bill is the best criterion.

* 886.—*Limicola platyrhyncha, Tem.*

[Singapore.]

901.—*Hydrophasianus chirurgus, Scop.*

Although we have procured no specimens, Lieutenant Kelham obtained it in full breeding plumage in Perak.

* 912 *bis B.*—Rallina mandarina,* *Swinh.*

[Malacca.]

The occurrence of this, hitherto, purely Chinese species towards the south of the Malay Peninsula is noteworthy.

* 922 *bis.*—*Ardea sumatrana, Raffl.*

[Kussoom, and seen at Klang.]

* 924.—*Ardea purpurea, Lin.*

[Tonka.]

* 927 *bis.*—*Herodias eulophotes, Swinh.*

[Tonka.]

* 928 *bis.*—*Demiegretta sacra, Gm.*

[Near Kussoom, seen Coast, *passim*.]

* 942 *bis.*—*Graptocephalus davisoni, Hume.*

[Tonka.]

955.—*Anas scutulata, S. Müll.*

Davison met with this species (which is in no wise a *Casarca* as Blyth and Jerdon seem to have considered it) in the forests of Kussoom, but failed to procure a specimen. The bird is quite unmistakable, and there can be no doubt about this.

* 986 *ter.*—*Sterna tibetana, Saund.*

[Tonka.]

Two somewhat immature specimens, which I identify with this species, though somewhat doubtfully, since although I have large series of *albigena* and *tibetana*, I have no authentic adult *longipennis*. It is very easy to separate the adults of these

* Should have been entered as *R. paykulli*, Ljungh, which name has precedence; see full note towards the end of this number.

three species, but the immature birds, all of whose bills in the dry specimens are black, puzzle me.

I take this bird to be *tibetana* and not *albigena*, because it has the long wing 10·35; because the rump and tail are nearly white, except the outer web of the outer tail feather which is very dark; because the dark band on the inner web of the first primary is narrower than in *albigena* as it is in *tibetana*; because on the breast there is a very faint *uniform*, vinous grey tinge, such as is observable in the earlier stages of *tibetana*, whereas in corresponding stages in *albigena* the grey on the breast is much more decided, lacks the vinous tinge, and *is in patches*.

I am beginning to suspect that the birds which I have recorded as *longipennis* from various parts of our Indian Coast, may after all be only the young of *tibetana*. The only points of difference seem to be the *somewhat* shorter wing, and the *somewhat* coarser bills.

Why I identified these birds as *longipennis* was because Captain Legge sent me a specimen from Ceylon, which I understood him to say had been identified by Mr. Saunders as *longipennis*. There may have been some mistake about this, or this present bird may really be *longipennis* and not *tibetana*, but in the absence of a good series of Siberian *longipennis* I am unable to make certain of these immature birds.

In perfectly adult birds, in breeding plumage, I find the following to be the dimensions of *tibetana* and *albigena*:—

Species.	Sex.	Wing.	Tarsus.	Mid Toe and Claw.	Bill at front from margin of feathers.
S. tibetana ...	Female ...	10·65	0·79	0·89	1·3
S. albigena ...	Female ...	9·7	0·78	0·91	1·4

So that, as you cannot depend upon the length of the wing in immature specimens, there is no difference in dimensions such as to enable one to separate immature birds, and as the quite young *albigena* seem to have the rump, upper tail-coverts, and tail nearly as white and almost as little shaded with grey as those of *tibetana*, it is a great puzzle to me how they are to be separated. I have undoubted series, of both, breeding birds and young in different stages from Yarkand and Tibet of *tibetana*, and similar series of *albigena* from the Persian Gulf, but even amongst these there are some immature birds that I do not know how to separate. I know what they are by the

locality, and the old birds shot in company with them, but I cannot hit upon any point which furnishes a clear diagnosis, and I hope Mr. Howard Saunders will soon take up specially the case of the immature birds of these two species and *longipennis*.

The mature birds of course a child could separate.

* 988 *bis.*—*Sterna sinensis, Gm.*
[Klang.]

List of species entered in our First List, now, but not previously, obtained.

37.—*Lophotriorchis kieneri, Gerv.*
[Malacca.]

48 *bis.*—*Butastur indicus, Gm.*
[Salang, Tonka Is.]

65 *bis.*—*Syrnium seloputo, Horsf.*
[Kussoom and Tonka.]

96 *bis.*—*Chætura gigantea, Hass.*
[Langat, 3° N. Lat.]

100 *bis.*—*Cypsellus subfurcatus, Bly.*
[Klang. Also in incredible numbers in all public buildings at Penang.]

103 *quat.*—*Collocalia spodiopygia, Peale.*
[Klang, Langat, both in Salangore.]

171 *bis.*—*Gecinus vittatus, Vieill.*
[Tonka Is. and Kussoom.]

184.—*Tiga javanensis, Ljung.*
[Tonka Is. and Klang.]

197.—*Xantholæma hæmacephala, P. L. S. Müll.*
[Tonka Is. and Kussoom.]

234 *ter.*—*Cinnyris flammaxillaris, Bly.*
[Tonk Is. and Kussoom.]

273 *quat.*—*Pericrocotus flammifer, Hume.*
[Tonka Is., Singapore Is.]

387 *A.*—*Trichastoma rostratum, Bly.*
[Klang.]

This species would probably be more correctly classed as a *Malacopterum*. It has a longer tail than *Trichastoma*, and like all the *Malacopterums* is a *tree* bird, while the *Trichastomas* are *ground* birds.

396 *ter D.—Setaria albogularis, Bly.*
[Klang.]

592.—*Calobates melanope, Pall.*
[Klang, Dingding Is.]

593.—*Budytes cinereocapilla, Savi.*
[Klang.]

660.—*Corvus macrorhynchus, Wagl.*
[Dingding.]

689 *sex.—Sturnia sturnina, Pall.*
[Tonka, Malacca.]

701 *bis.—Amadina leucogastra, Bly.*
[Tonka, Klang.]
In the list a star was wrongly prefixed to this species.

776 *bis.—Osmotreron fulvicollis, Wagl.*
[Tonka, Kussoom, Dingding, Klang.]

780.—*Carpophaga œnea, Lin.*
[Kussoom.]

791 *ter.—Macropygia assimilis, Hume.*
[Hot springs at Ulu Langat.]

845.—*Charadrius fulvus, Gm.*
[Tonka, Klang.]

884 *bis.—Tringa ruficollis, Pall.*
[Tonka.]

920.—*Dissura episcopa, Bodd.*
[Tonka.]
We entered this species with a note of interrogation, but we have procured specimens in the north.

930 *bis.—Ardea leucoptera, Bodd.*
We entered this in the first list as 930A., and printed it in Roman, but a bird in breeding plumage obtained in Tonka Is., together with one in non-breeding plumage, shows that while the latter is clearly *leucoptera*, Bodd., the former is *prasinoscelis* of Swinhoe; at least I can discover no difference between them.

This being so, our list of the birds of India must be altered, and under 930 *bis, leucoptera*, Bodd., substituted for *prasinoscelis*, Swinhoe.

952.—*Dendrocygna javanica, Horsf.*

[Kussoom.]

991.—*Sterna sumatrana, Raffl.*

[Tonka.]

Notes on, and corrections to, the First List.

It may be well to note that, although there is probably no doubt that they do occur, we have never yet, in any part of the Peninsula, come across specimens of either *Otogyps calvus* or *Gyps indicus*.

Note, that in the first list the two names, 31.—*Aquila pennata*, and 32.—*Neopus malaiensis*, ought both to have been printed in italics, as both occur elsewhere in the British dominions.

We mentioned in our list that Davison felt sure that he had seen 40.—*Pandion haliaëtus*, Lin., along the coast. Since then a fine specimen has been shot at Singapore, which is in the Singapore Museum.

No. 128.—For *amauropterus* read *amauroptera*.

There ought not to have been a star prefixed to 135 *bis A.*—*Alcedo euryzona*, Tem., as we have never yet met with a Kingfisher of this type in the Malay Peninsula.

450 *A.*—Criniger theoides, *Hume*.

We obtained a male and female of this species, both precisely like the type, at Klang. The species seems a very distinct one, and as it is not confined, as we thought it might be, to Johore and the *eastern* side of the Peninsula, it seems strange that it should hitherto have escaped notice; yet I can find no description at all answering to it.

451 *quint A.*—Euptilosus euptilosus, *Jard. and Selb.*, Ill. Orn., New Ser., pl. 3, 1836.

The authors by the way call this *Brachypus euptilosus*.

I entertain no doubt that the specimen here figured was one of *Criniger tristis*, Blyth. (Ibis, 1865, p. 47.)

We have specimens in which the rump feathers are disarranged, presenting precisely the appearance depicted in the plate. The dimensions and color of the plate, and the description, so far as it goes, agree *perfectly* with *tristis*. The sole point which might lead to a doubt of this identification is, that

Jardine, in his description, fails to notice the white marks on the tips of the three outer tail feathers, and that the tail is so turned that these are not seen in the plate. I do not, however, think that any one who compares the plate and description with a good series of *tristis* will doubt that *euptilosus* equals *tristis*. The former dates from 1836, the latter from 1865, and the species should, therefore, now stand, I think, as 451 *quint*—*Criniger euptilosus, Jard. and Selb.*, and this will remove one of the doubtful species from our list.

452 *oct A.*—Ixus finschi, *Salvad.*

This name ought not to have been printed in italics in the first list, since, so far as we know, this species occurs nowhere within the British dominions except in the Malay Peninsula.

This species is colored above precisely like *Ixus brunneus*, but it is a rather smaller bird. The bill is smaller, the throat and abdomen are much whiter and much less brown, and whereas the wing-lining underneath the shoulder of the wing is a sort of brownish buff in *brunneus*, it is in *finschi* a pale yellowish color.

452 *dec A.*—Iole olivacea, *Bly.*

In our list, *ante* p. 62, this is misprinted as *Ixus olivaceus.*

463 *bis A.*—*Phyllornis icterocephalus, Less.*

Wrongly printed in the list as 463 *ter A.*

631 A.—*Zosterops auriventer, Hume.*

In Vol. VI., page 519, I noticed a specimen of a *Zosterops* obtained near Tavoy, for which I proposed the name *auriventer*. Afterwards I obtained five similar specimens from the Malay Peninsula, and in Vol. VII., p. 452, I pointed out that Hartlaub had described this species from specimens from Java and Sumatra under Temminck's manuscript name of *lateralis*, and I therefore proposed the suppression of my name, and adopted Temminck's name. I now find that this latter had been long pre-occupied by Latham for an Australian congener, and my name of *auriventer* must, therefore, apparently stand for the species.

686.—*Acridotheres fuscus, Wagl.*

I am still of opinion that if Cantor got a real *A. fuscus*, it must have been a caged bird, but it has since occurred to me that *A. siamensis* is very likely to occur in the Malay Peninsula.

A. O. H.

Notes on the Nidification of some Burmese Birds, No. III.*

By Eugene W. Oates, C.E.

118.—Harpactes erythrocephalus, *Gould.* (116.)†

On the 8th May, a female of this species flew from the top of a dead trunk of a tree, about 20 feet high, as I was passing through the forest at the Eutagan Bungalow, twelve miles from Pegu. A man, on being sent up, reported that there were three eggs resting on the bare wood in a cavity at the top of the stump. In about a quarter of an hour the bird returned and began sitting. I started her off and shot her. The eggs were then brought down to me.

In shape, the eggs are nearly spherical, and in texture, the shell is smooth to the touch and tolerably glossy. The color of all is a pale buff or *café-au-lait*. They are in fact of precisely the same color as the eggs of *H. oreskios*, with which Lieutenant Bingham has lately kindly favored me. In size and shape they, however, differ very conspicuously, the dimensions of the three eggs of *hodgsoni* being respectively 1·1 by ·98; 1·08 by 1·00; and 1·1 by 1·01.

Dr. Jerdon and Mr. Hodgson record the eggs of this species as white, and more recently Mr. Gammie has also found them of the same color. I cannot help thinking that a mistake in identification has been made in all these cases.‡ *H. fasciatus*, as Lieutenant Bingham informs me, lays buff-colored eggs, and it seems out of all reason that the Trogon of the Himalayas should lay white eggs. ("Nests and Eggs," p. 99.)

119.—Serilophus lunatus, *Gould.* (139*bis.*)

Mr. Davison had the eggs of this species brought to him in Tenasserim by his Burman Shikaree, and their color was white. The eggs I procured myself were spotted,§ and, as will be seen from the description below, almost identical in color with eggs of *Eurylæmus javanicus*, as described by Mr. Hume (S. F., V., p. 456.)

* *Vide* "Stray Feathers," Vol. V., p. 141, and Vol. VII., p. 40.

† The numbers following the names are the general list numbers.

‡ No; no mistake. Several nests with nearly white eggs have been found of this species; some eggs of *fasciatus* are quite as nearly pure white; even in *oreskios*, some eggs show only a trace of the ivory tinge. I have never seen any Indian Trogon's egg, that I should call "buff." Ivory or creamy white or very pale *café au lait*, is all I could say for the deepest colored I have seen.—A. O. H.

§ All these Broadbills lay several types of eggs, some plain, some spotted, as do the King-crows.—A. O. H.

I found a nest of this species a few miles from Pegu at the commencement of May. It was empty. On the 12th I revisited it, and took four eggs, which were all fresh, although the old bird was sitting.

The nest was suspended from the branch of a small shrub in dense evergreen jungle. The nest itself is a ball about six inches in diameter exteriorly, with a circular opening two inches wide exactly in the centre. The entrance is protected by a rude porch. The materials are chiefly coarse grass, and the outer bark of elephant grass and weeds bound together by fine, black, hair-like roots. The exterior of the nest is adorned with numerous yellow cocoons. Towards the bottom of the nest the materials become very coarse and are loosely put together, the ends straggling down a foot or more, forming a long tail. The total length is nearly two feet. The interior of the nest is beautifully and firmly lined with broad leaves of elephant or thatch grass, and a few green leaves are spread over the egg cavity. Altogether the nest is one of the most elaborate I have seen, differing in nothing but size from some of the many nests of *Arachnechthra flammaxillaris* that I have found.

The eggs are tolerably glossy, excessively smooth, and blunt at the smaller end. The ground color is white, tinged with pink, and the whole egg is speckled and spotted with underlying spots of purple and surface spots of rusty brown, more so at the thick end than elsewhere. They measure from ·93 to 1 inch in length by ·68 to ·70 in breadth.

120.—Gecinus occipitalis, *Vig.* (172.)

This bird lays four eggs as a rule, but in one instance I found only three in one nest.

It is extremely common in all large forests, and breeds from the 1st May to the end of June throughout Pegu.

Its mode of nidification appears to be well-known. ("Nests and Eggs," p. 125.)

121.—Tiga javanensis, *Ljung.* (184.)

On the 7th May I got three eggs, quite fresh, from a hole of a tree. The hole appeared to have been a natural cavity, but the entrance had been enlarged and made circular. The nest was at no great height from the ground.

The three eggs are pure white and very glossy and smooth. They are extremely pointed at one end. They measure 1·1 by ·77, 1·07 by ·71 and 1·09 by ·75.

122.—Megalæma hodgsoni, *Bonap.* (192.)

I have found numerous nest holes of this bird, but never the eggs.

On the 8th May I discovered two fully-fledged young birds in a hole of a horizontal branch of a tree about 10 feet from the ground. The entrance to the nest was on the upper side of the branch. The branches selected are, I think, always dead ones. ("Nests and Eggs," p. 129.)

123.—Tephrodornis pondicerianus, *Gm.* (265.)

Nest with three fresh eggs on the 3rd March near Pegu. ("Nests and Eggs," p. 176.)

124.—Pericrocotus peregrinus, *Lin.* (276.)

In Lower Pegu eggs of this bird may be found from the end of April to the middle of June. ("Nests and Eggs," p. 276.)

125.—Chaptia ænea, *Vieill.* (282.)

I procured one nest on the 23rd April. It was placed at the tip of an outer branch of a jack tree, and attention was drawn to it by the vigorous attacks the parents made on passing birds.

The nest was suspended in a fork. The outside diameter is 4″ and inside 3″: total depth 2½″, and the egg cup is about 1½″ deep. The nest is composed of fine grass, strips of plantain bark and other vegetable fibres closely woven together. The edges and the interior are chiefly of delicate branchlets of the finer weeds and grasses. It is overlaid at the edges, where it is attached to the branches, with cobwebs, and a few fragments of moss are stuck on at various points.

There were two fresh eggs. The ground color is a pale salmon fawn, and the shell is covered with darker spots and marks of the same. They are only very slightly glossy. The two eggs measure ·85 by ·62. ("Nests and Eggs," p. 192.)

126.—Dissemurus grandis,* *Gould.* (284.)

I have taken the eggs of this species on all dates, from the 30th April to the 16th June.

The nest is placed in forks of the outer branches of trees at all heights from 20 to 70 feet, and in all cases they are very difficult to take without breaking the eggs.

* Possibly 285.—*D. paradiseus* is meant, as this is I learn the common species in *Lower* Pegu, where Mr. Oates has been of late years. But *grandis* certainly occurs also in *Northern* Pegu. However, Mr. Oates will doubtless define the areas of distribution, of the two species in his promised "New List of the Birds of Pegu."

The nest is a cradle, and the whole of it lies below the fork to which it is attached. It is made entirely of small branches of weeds and creepers, finer as they approach the interior. The egg cup is generally, but not always, lined with dry grass.

The outside dimensions are 6″ in diameter and 3″ deep. The interior measures 4″ by 2″. In one nest the sides are bound to the fork by cotton thread in addition to the usual weeds and creepers.

The eggs have very little gloss, and differ among themselves a good deal in color. In one clutch the ground color is white, spotted and blotched, not very thickly, with neutral tint and inky purple, chiefly at the larger end. Other eggs are pinkish salmon, and the shell is pretty thickly covered with pale neutral tint and orange brown spots and dashes.

They vary in size from 1·2 to 1·06 in length, and ·85 to ·8 in breadth. ("Nests and Eggs," p. 193.)

127.—Chibia hottentotta, *Lin.* (286.)

In the first week of May I took several nests of this bird, but in all cases the nests were situated in such dangerous places that most of the eggs got broken. There were three in each nest.

The position of the nest and the nest itself are so much like those of *D. grandis* just described, that no separate description is necessary. Comparing many nests of both species together, the only difference appears to be that the nests of the Hair-crested Drongo are slightly larger on the whole.

The only two eggs saved measure 1·10 by ·8 and 1·11 by ·81; they are slightly glossy, dull white, minutely and thickly freckled and spotted with reddish brown and pale underlying marks of neutral tint.

I may add that at the commencement of May all the eggs were much incubated. ("Nests and Eggs," p. 194.)

128.—Alsocomus puniceus, *Tick.* (782.)

27*th July*.—Kyeikpadein.—Nest in a fork of a horizontal bamboo bough, about 10 feet from the ground, composed of a few twigs woven carelessly together. Male bird sitting. One egg quite fresh. Color, white, very glossy. Size, 1·47 by 1·15. Probably only one egg is laid.

129.—Excalfactoria chinensis, *Lin.* (831.)

A nest found on the 14th July was a mere pad of grass, placed in a clump of coarse grass. It contained five fresh eggs. They are slightly glossy and rather rounded. The ground color is olive brown, and the shell is speckled with a few minute reddish

brown spots. They measure from 1·0 to ·95 in length, by ·77 to ·7 in breadth. ("Nests and Eggs," p. 553.)

130.—Podiceps minor, *Gm.* (975.)

I took a nest with fresh eggs on the 25th July. It is a common bird throughout Pegu. ("Nests and Eggs," p. 646.)

Further Notes on the Birds of Tenasserim.

In the Birds of Tenasserim, S. F., VI., 258, I stated that, until further specimens of the Tenasserim *Gampsorhynchus* were obtained, or until specimens of the Himalayan bird, corresponding with my Tenasserim type, were procured, I thought it most prudent to retain GAMPSORHYNCHUS TORQUATUS, *nobis*, (Pr. A.S. B., 1874, p. 107, and S. F., II., 446,) as distinct.

Further experience has quite justified this view. Mr. Darling procured an enormous series of this species at Thoungyah, on the south-eastern flanks of Mooleyit in Tenasserim, and with twenty specimens of each species before me I am in a position to assert now the entire distinctness of the two species, *torquatus* and *rufulus*.

It is only the very oldest birds of both species that could be confounded; in these, however, clear distinctions exist. The bills in *rufulus* are brown, in *torquatus* white, with only more or less of a dark line on the culmen; all the tail feathers are conspicuously tipped with white in *torquatus*, in *rufulus* they are more narrowly tipped with pale rufous. The outer webs of the earlier primaries in *torquatus* are nearly white, whereas they are pale greyish olive in *rufulus*. In the oldest birds, too, of *torquatus*, there seems to be always a patch or two of a bright ferruginous buff on the lower surface, such as is not seen even in the youngest bird of *rufulus*; lastly, the white does not extend so far on to the interscapulary region in *torquatus* as it does in *rufulus*, except in the very oldest birds. No one could for a moment doubt the distinctness of the species, the white bills, the white tippings to the tail, the richer buff of the under surface, the whiter margins to the outer primaries, all hold good at every stage, but in addition to this, the upper surface is everywhere a richer and deeper color, and the young bird, instead of having the heads red, as in *rufulus*, have them and the nape the same color as the back, but of a deeper and darker shade, and this color extends round the neck nearly, but not quite, meeting in front, and as the white of maturity beginning at the forehead and creeping backwards towards the nape, extinguishes most of

this dark color, it still leaves the lower portion of it as a torque, as in the type specimen.

It probably takes two or three years before all traces of the immature plumage disappear, since three-fourths of our specimens show more or less of this torque.

An unaccountable typographical mistake occurred in the original description, in which it is stated that "the rest of the upper mandible purplish brown." This was not so recorded in regard to the type by Davison, and is not a fact. In every case the entire bill has been greyish horny or fleshy white, with in some cases a dusky line on the culmen. The legs and feet have also been greyish white, or slaty white, or fleshy white, with a blue tinge. The irides pale to bright golden.

Numerous specimens measured in the flesh showed that the females were slightly larger than the males. The species including both sexes varies as follows :—

Length, 9·4 to 10·2; expanse, 11·25 to 12·7; wing, 3·7 to 4·1; tail from vent, 4·5 to 5·0; tarsus, 1·05 to 1·2; bill from gape, 0·9 to 1·0; weight, 1·3 to 2 ozs., the average being 1·75 ozs.

412.—In the Birds of Tenasserim, S. F., VI., 291, I noted that Davison never met with more than one single specimen of 412.—*Garrulax pectoralis;* this he got at Meetan. Darling, however, found it plentiful in July and August about Kaukaryit, and preserved many specimens. The Tenasserim bird is not separable from the Himalayan one, but differs, as does the Tenasserim *moniliger*, in having the tail tippings ochraceous, and it also differs from the Himalayan bird in having the ferruginous chestnut of the flanks replaced by buff, and in having the rufous nuchal half collar paler and less pronounced. The bills too are, I think, somewhat slenderer.

706.—*Passer indicus.*—In the birds of Tenasserim, pp. 406 and 520, we mentioned that, while this species was common at Rangoon, we had only met during all our years of collecting with one single specimen in Tenasserim, and this at Moulmein, where the bird might well have come over on board some of the craft hourly plying between Rangoon and this place.

Subsequent, however, to the issue of the volume referred to, Davison, on the 10th December 1878, when up at Needong on the Attaran, about 50 miles inland south-east from Moulmein, met with an enormous flock of the common sparrow, clustered in hundreds, I may says thousands, in a dense clump of bulrushes many miles from any human habitation. He shot eight or nine

with a single shot out of this flock, but never saw them again any where.

In a list of the birds collected by Captain Briggs, at that time Deputy Commissioner of Tavoy, published by Gould, P. Z. S., 1859, 149, I find included *Zanclostomus* (*Taccocua*) *sirkee*. I can scarcely believe that Gould's identification was in this case correct, but still it is necessary to note the fact.

I notice further that this same species is included by Gould in the birds collected at Bangkok by Schomburgh. It occurs to me that owing to the similarity of the color of the bills and of the under parts, Mr. Gould, at a time when these birds were less well-known, confounded *Zanclostomus javanicus*, Horsfield, which we procured at Tavoy with *sirkee* of J. E. Gray. Anyhow, at present, I consider the occurrence of this latter species alike at Tavoy and Bangkok as requiring confirmation. Possibly in some later paper which I have not come across Mr. Gould may have himself corrected this.

I also find a specimen of *Lanius colluroides* (*hypoleucus*) recorded from Tavoy, in this same list. We have not yet ourselves met with it further south than Amherst and Moulmein. Also from Tavoy a specimen of *Casarca leucoptera*, a bird we have never succeeded in finding at all in Tenasserim, (perhaps we were not then acquainted with its habits of haunting the depths of the forest), but we have since met with it just south of Tenasserim near Kussoom in the Malay Peninsula.

A. O. H.

The Influence of Rainfall on the Distribution of Migratory Waders and Water Birds.

By G. Vidal, Esq., C.S.

In Vol. VII., the editor has, in an able article, called "Birds of a Drought," shown by the exhaustive process, how a large number of species had been banished from a particular tract, (the neighbourhood of Jodhpur) after a season of abnormally light rainfall. In the district from which I write—the South Konkan—a precisely similar result has been observable, as regards migratory shore birds and wild fowl, after a year of exceptionally heavy rainfall. The subject is one of great interest, and I ventilate it in the hope that some one may be able to suggest the true explanation of what at first sight seems a contradiction of nature's laws.

I am not able to give an exhaustive list of *all* the species which, although absent this season, have been regular visitants in preceding ones; but having known the district for six years, and having collected vigorously for two season, I will attempt to contrast as accurately as I can the past with the preceding season.

The tract I refer to is a narrow strip of lowland lying between the Western Ghats and the sea, and extending from Bankot, or Fort Victoria on the north, to Ratnagiri on the south, in length about seventy miles, and with a breadth varying from thirty-five to forty-five miles. The whole country is rugged and broken, more open and undulating towards the Ghats, and subsiding near the coast into a series of plateaus capped with weather-stained laterite, and intersected by deeply-scoured ravines and valleys.

There are three principal rivers—the Savitri, the Vashishti and the Shastri—which are tidal and navigable for some twenty miles or more into the interior, besides innumerable smaller creeks, bays and back waters. The estuaries and tidal sections of the larger rivers and creeks are fringed with extensive mud flats, salt marshes, and mangrove swamps, with here and there patches of reclaimed rice land.

The average rainfall for the last twenty-eight years has been, as recorded at Ratnagiri on the coast, 101·49 inches, and the fall for 1878 was 168·66, being by many inches the highest on record. Generally speaking, the rainfall increases gradually from the coast to the Sahyadri range, the only exception to this rule being one or two isolated hills of considerable elevation near the coast, which show a higher average than stations at the foot of the Ghats.

The relative humidity of the district is shown by the meteorological returns, as might be expected to be greater than that of any other tract, excepting other parts of the Konkan, in the Bombay Presidency.

In ordinary years the South Konkan is visited during the cold weather by a considerable variety of waders and aquatic birds. The numerous lagoons and swamps, the mud banks of the rivers, and the large inundated area of paddy fields offering to birds of these orders irresistible attractions, and a seemingly inexhaustible supply of tempting food. In particular a favourite ground may be mentioned at the junction of the Vashishti and Tagburi rivers. Here, year after year, are seen large flocks of Widgeon, often five hundred or more together, and a sprinkling of other ducks, besides countless Egrets, Herons, Cormorants, Snake Birds, Ibis, Plovers and Sandpipers. On one occasion I have obtained on this ground in one morning, Cotton Teal (*Nettopus coromandelianus*), Whistling Teal (*Dendrocygna*

javanica), Gadwall (*Chaulelasmus streperus*), Pintail (*Dafila acuta*), Widgeon (*Mareca penelope*), Common Teal (*Querquedula crecca*), and Garganey Teal (*Querquedula circia*). I visited this ground on three occasions this season, in November, December and January, in the full expectation of having more than ordinarily good sport. But notwithstanding the abnormal rainfall, not a single Widgeon was to be seen. On the first two occasions no duck of any description were found, but by January a small flock of three or four European Teal had made their appearance, and had the whole ground to themselves. Similarly with the waders, there was a very marked diminution in the number of Egrets and Herons. Here and there at long intervals a solitary White Heron, conspicuous in his loneliness, moped on the banks, disconsolate. Greenshank, Redshank, Golden Plover and Sand Plover, usually plentiful, were nowhere, and even the common little Sandpiper, the very commonest species in the district, was so sparingly seen as to be almost a rarity. Even the Cormorants were affected by the general desolation, and the White Ibis, who generally come in moderately large flocks, were represented by a few unhappy-looking individuals, who hid their diminished heads in the reeds, and looked as if they were sorry they had come. It was as if an annual 'jatra' had been stopped by Imperial edict, and the few who had braved the prohibition and reached the trysting place were afraid to show themselves. So with the snipe. In 1877, after a rainfall 87·91 inches—considerably below the average—we had a splendid snipe year. Common and Pintails were equally abundant throughout the district. In 1878, after a fall of 168·66 inches, nearly double that of the preceding year, we have had, as has been the general remark, an exceptionally poor year. Flamingoes, who had visited Ratnagiri in 1877, put in no appearance in 1878.

In February and March 1877, I was camped for some six weeks at the mouth of a small tidal creek, at a village called Kelsi. I obtained or saw the following species of shore and water birds, cold-weather visitants only in this locality :—

Golden Plover (*Charadrius fulvus*) plentiful; Sand Plover (*Ægialitis mongolicus*) very plentiful; Oyster Catcher (*Hæmatopus ostralegus*) scarce; Pintail Snipe (*Gallinago sthenura*) plentiful; Common Snipe (*Gallinago gallinaria*) plentiful; Jack Snipe (*Gallinago gallinula*) scarce; Curlew (*Numenius lineatus*) common; Whimbrel (*Numenius phæopus*) common; Spotted Sandpiper (*Rhyacophila glareola*) scarce; Green Sandpiper (*Totanus ochropus*) scarce; Common Sandpiper (*Tringoides hypoleucus*) abundant; Greenshank (*Totanus glottis*) plentiful; Redshank (*Totanus calidris*) plentiful; Stilt (*Himantopus candidus*)

rare; White-necked Stork (*Dissura episcopa*) scarce; Grey Heron (*Ardea cinerea*) scarce; Purple Heron (*Ardea purpurea*) scarce; Lesser White Heron (*Herodias torra*) common; Little Egret (*Herodias garzetta*) abundant; Ashy Egret (*Demiegretta gularis*) common; Shoveller (*Spatula clypeata*) one small flock; Common Teal (*Querquedula crecca*) one or two considerable flocks; Little Cormorant (*Phalacrocorax pygmæus*) common; and Snake Birds (*Plotus melanogaster*) common.

I have omitted from the above list the common permament residents, such as the Green Bittern and Pond Heron, Cattle Egrets, Rails and Waterhens.

I re-visited the same place in February 1879, spending about a fortnight there. The change was most marked. The following species recorded in the previous year, I missed altogether from their accustomed haunts:—

Golden Plover, Lesser Sand Plover, Jack Snipe, Curlew, Whimbrel, Stilt, Purple Heron, Shoveller, and Common Teal; a few Golden Plover, Sand Plover and a very few Teal have, however, been got during the season in other localities. Common and Pintail Snipe, Greenshank, Redshank, the three Pipers, Grey Herons, White Herons, Little Egrets, Ashy Egrets, Cormorants, and Snake Birds were all quite scarce. I saw one solitary and wily Oyster Catcher, who fell a victim to a choke barrel at a long range. Ill-natured people might perhaps account for this dearth of birds by the fact that I had made too good use of my time at this particular place during the preceding year. To this I answer that, excluding Snipe and Golden Plover, my collection of the previous year from this spot numbered only eighty specimens, including numerous *raptores*, *insessores* and *rasores*. Besides the same diminution has been observed by myself and others throughout the district.

Another fact worth mentioning occurs to me: In 1877, during the cold weather, very large flocks of the Ashy Ringdove (*Turtur risoria*) made their appearance in the northern portion of the district. Not being permanent residents, or ordinary visitors, their advent from the country above the Ghats was a marked event. This year, as far as I can ascertain, not a single bird was seen. On the other hand, the migratory warblers were well represented, and the Rosy Pastor, or Towari bird, who doesn't usually come in force, preferring the fat plains of the Deccan, was exceptionally abundant.

What is the true solution of this state of things? Was it that the rainfall of the year being everywhere proportionately heavy, and the general area of inundated land consequently greater, our shore and water birds, finding suitable feeding grounds there, were detained further north, and had no necessity to

continue their migration southward? I incline to this view myself, but shall be glad to hear any other solution of the question.

RATNAGIRI, *July 1st*, 1879.

The Starlings of India.

No less than five well-marked and readily-distinguishable species of Starlings occur within the limits of our Indian Empire, and it may be well to put on record a few brief notes in regard to these.

The coloration in all the species is distinct, and they differ moreover in size, in the amount of spotting normally assumed, and in other ways. The following table will convey some idea of this, it being understood that the birds are described, by a person standing with his face to the light, holding the birds in front of him about the level of his waist, with the tails towards him, and with the heads pointing forwards and inclined downwards :—

No. ...	1	2	3	4	5
Name ...	*S. vulgaris, var. indicus.*	*S. purpurascens.*	*S. nobilior*	*S. minor*	*S. nitens.*
Wing ...	4·85 to 5·3	5·0 to 5·3	4·9 to 5·25	4·25 to 4·5	4·5 to 4·75
Amount of spotting in adults.	Much	A good deal	Very little to none.	Very little to none.	None.
Head ...	Purple	Green	Purple	Green	Bluer purple.
Interscapulary region.	Green	Puce purple	Bronze green	Redder puce purple.	Purplish bronze.
Scapulars, lower back and rump.	Ditto	Ditto	Green, shaded with purplish blue.	Ditto	Bronze green.
Metallic portions of secondaries and coverts.	Ditto a little blue here and there.	Purplish coppery bronze.	Puce purple, a little bronzed.	Bronzed green.	Green, slightly bronzed.
Throat ...	Purple	Slightly bronzed green.	Deep purple	Dark green	Bluish purple.
Breast ...	Green	Purplish puce	Bronzed green.	Bronzed purple.	Black, with a bronzy shade.
Abdomen ...	Generally bluish.	Bronze, with more or less of a greenish tinge.	Coppery purple.	Bronzy green	Black, with scarcely any reflections.

1.—*S. vulgaris.*—This is the Indian form of our common English Starling, having, as a rule, a somewhat longer and less spatulate bill, and being possibly rather more brightly colored, but not in my opinion entitled to specific separation from the European bird. This species is common (mostly as a cold season visitant) in Beloochistan, Affghanistan, Cashmere (where it breeds), the entire Punjab, Sindh, Rajpootana, North-West Provinces and Oudh, spreading still further south and east into Bengal and the Central Provinces, but exactly how far in each direction I have not ascertained.

This species is almost always profusely spotted, and never so far as my experience goes—and I have 50 specimens before me at the present moment—loses the spottings on the upper surface, and nine out of ten birds are profusely spotted on the lower as well as the upper surface.

2.—*S. purpurascens.*—I take this bird to be Gould's species. It has the whole upper parts, excluding the head, a puce purple, very different indeed from the green of *vulgaris*, and it has the head green, while *vulgaris* has this purple. No doubt Gould gives the wing as $5\frac{3}{4}$, whereas with us the wing varies from 5 to 5·3. This is a rare bird in India, comparatively speaking, and I have only obtained it in various parts of the Punjab, and in Dehra, and Etawah of the North-West Provinces, never in Sindh or Rajpootana.

Besides the difference in color, it is on the whole a less spotted bird than the previous species.

3.—*S. nobilior*, nobis; N. Sp.—This, again, is a very distinct and handsome species, perhaps the handsomest of all. The majority of adults have only a little spotting, small arrow head white spots, on the interscapulary region; old adults entirely want this.

Compared with the Sardinian Starling, its very varied colors, puce purple, purplish bronze green, and bronzy green, separate it at once.

From *nitens*, its larger size, totally different color of the back and mantle equally separate it.

It is the Starling of Kandahar and its neighbourhood, and I daresay of Cabul generally; and I have one specimen procured at Murdan just on the frontiers of Cabul—a young bird, and showing far more spotting than any Cabul specimen.

4.—*S. minor.*—This is a lovely little species, most resembling *purpurascens*, but differing in the much smaller size, the lesser amount of spotting in the adult, the redder purple of the back, and the color of the metallic portions of the wings, which are bronzed green in *minor*, and a purplish coppery bronze in *purpurascens*.

We have a large series of both species, comparatively rare though they are, but with two exceptions all my specimens of the present species were obtained in Sind, where it breeds freely on the E. Narra. These two exceptions were obtained at Loyah in the Etawah district.

5.—*S. nitens.*—The adults of this species are always entirely spotless. My specimens are all from Cashmere and Attock, but I have one specimen obtained in the Kumaon Babhur.

It is very desirable to ascertain accurately the range of these several species, and I hope that the table above given will enable all my readers to discriminate these several species, and thus help me to determine exactly the range of each.

I daresay that at first sight many people will suppose that I am needlessly making species, but all that is necessary is to examine a large series of each form. Whoever does so will, I am sure, admit that it is impossible to unite any one of these five forms. They are all perfectly distinct, and no intermediate form whatsoever appears to occur, and there is, therefore, no alternative, it seems to me, to keeping each as a distinct species.

Notes on the List of the Birds of India.

By W. T. Blanford.

I have a few alterations and emendations to suggest in the list of the "Birds of India." Of the great value of this list, there can be no question; it supplies a most important desideratum to every working ornithologist, and will save many a wearisome half hour which would without it be spent upon indices. It is very much like the treatment proverbially deprecated in the case of a "gift horse" to raise objections to the list itself, but I hope I may be pardoned if I call attention to one or two points in connection with it, which are, I think, worth discussing.

In the first place, to begin at the very beginning, is it quite correct to call this catalogue "A List of the Birds of India"? I had some discussion in former years on this subject with various English Naturalists, who, as I thought and still think, used the term India in an excessively loose and ambiguous manner, to imply the whole of South-Western Asia. No doubt there is ample authority for such an employment of the term; the whole of the Dutch possessions in the Malay Archipelago are still known as Netherlands India; there may still be atlases extant, in which Burmah, Siam, and the neighbouring countries

are collectively designated "India beyond the Ganges," or "Transgangetic India;" and in German maps the countries east of the Bay of Bengal appear as "Vorderindien." Hence, when Dr. Sclater distinguished the various zoological regions of the earth's surface, he applied the term "Indian region" to all South-Eastern Asia, with the islands as far as "Wallace's Line." To this some years ago I objected that India Proper, the Hindostan of English maps, though not of natives of India, has a fauna and flora differing in most important particulars from those found in other parts of the so-called Indian region, and having, in some respects, a close connection with the animals and plants found in Africa; and that, consequently, a false impression of the fauna of India was conveyed by applying the name to the whole region. I pointed out that very erroneous ideas as to the fauna of India Proper are widely prevalent in consequence of European naturalists not appreciating the distinction between the animals found to the west, and those occurring to the east of the Bay of Bengal, and I urged that the term India should be restricted to the land to which it was originally applied, the peninsula inhabited by the Hindoos.

I believe that it is right to insist upon this restriction of the term India in works on Natural History, because there is no other word that can be used. Hindostan, as already remarked, although commonly employed in England, has a different signification in India. I would restrict the term India rigidly to the countries west of a meridian passing through the northern extremity of the Bay of Bengal, and call such lists, as that given in STRAY FEATHERS, "List of the Birds of British India and its Dependencies," if, as I believe, that fairly comprises the region from which the species named are derived.

The matter may seem trivial, but really it is not so. The question of geographical distribution is one of the most important at the present day in the whole range of biological science. It is almost impossible for Anglo-Indians to conceive the ignorance that exist amongst a large proportion of European naturalists on the subject, and the only way to reform is a clear definition of geographical names.

The next point to which I would call attention is the numbering of the list. I am doubtless a heretic, but still heretics are useful in their way, if only to shew the wide gulph between themselves and orthodox believers, and I do not believe that the numbers are of the least use to Indian ornithologists generally. Give a fresh series to the list, and if those old numbers of Jerdon's are so important, that Indian ornithology cannot progress without them in some form or other, insert them

in brackets; but why *Scops balli* should be 74 *oct*, and *Iole viridescens*, 452 *dec*; *Zosterops lateralis*, 631*A*, and *Z. austeni*, 631 *quint*, is one of those matters which I have never quite understood. Of course, I know, that these are the numbers of Mr. Hume's own list, and of the specimens in his museum, but this is, after all, a private matter; and, although the numbers may have a meaning to Mr. Hume personally, they offer no advantage to other Indian ornithologists, whereas serial numbers would be useful as marking the present state of Indian ornithology. If it be thought that these numbers, with their rather numerous affixes, have been employed throughout in "STRAY FEATHERS," and that on account of changes in the specific or generic names the species might, in a few cases, be supposed to be different were the numbers omitted, the reply is that, as references are given to all the important descriptions, and if I am not mistaken, to all places where changes of name, if adopted, are discussed, the numbers are superfluous in the list.

In the present state of Indian ornithology, without for a moment wishing to depreciate Jerdon, whose work indeed has been to many, as to myself, the foundation of any accurate knowledge of ornithology, I think the sooner we shake off all vestiges of Jerdon's classification the better. Jerdon's classification, as I have repeatedly pointed out, was grossly inaccurate, and was immeasurably inferior to Blyth's, although the latter appeared 13 years earlier in his "Catalogue of the Birds in the Museum of the Asiatic Society." So long as everything is made to fit into Jerdon's system, a false classification is encouraged.

I think, too, that the real importance of this list is diminished by the adherence to Jerdon's numbers. The area is not Jerdon's India, but a widely expanded tract, in which vast additions have been made to the west, north, and east, and even to the southward, the very important accession of the Ceylonese forms has been incorporated. A glance at the names anywhere will shew the changes that have taken place. Why then attempt the Procrustean task of compressing the whole ornithology of the Indian Empire within the meagre limits of Jerdon's numbers? The present list, if it is worth anything,—and I think it is worth a great deal—marks a new point of departure for the avifauna of the British possessions in Southern Asia; surely such a list is worthy of a series of original numbers.

Descending to particulars, I do not quite understand why certain Central Asiatic species are included in the list. These species are, so far as I have observed (I may very probably have omitted some instances) *Falco hendersoni* (10 bis), *Saxicola hendersoni* (492 bis), *Podoces humilis* (679 bis), *Montifringilla*

blanfordi (752 quint), and *Montifringilla mandellii*, (752 sex). On the names of two of three species, I shall have something to say presently, but taking the question of distribution first, I do not remember any of these species being announced from localities which can, by any possible reading of the term, be described as Indian. Neither *Falco hendersoni* nor *Saxicola hendersoni* has, so far as I am aware, been found living south of the Kuenlun, and the birds of Eastern Turkistan are certainly not generally included in the list. For instance *Podoces hendersoni* and *P. biddulphi* are omitted. *Podoces humilis* has been obtained both in Turkistan and in Eastern Tibet, whilst *Montifringilla blanfordi* and *M. mandellii* have only been found hitherto in the latter. Neither Eastern Turkistan nor Eastern Tibet are in any sense of the term dependencies of British India.

The remaining points refer to matters of nomenclature, and I will take them one by one. There are a number of species, the names of which are, of course, open to question, and in many instances the validity of forms admitted to specific rank in this list, has been disputed. I shall only notice the few instances in which I have had good opportunities of forming a judgment.

20, 20 *bis*, 20 *ter*.—*Microhierax*.—If the genus *Heterorhynchus* is retained instead of *Sphenocichla*, *Hierax* must be employed for the pigmy falcons. *Sphenocichla* and *Microhierax* were both instituted for the same purpose, to replace names which had been previously used for other genera, but had become synonyms for the groups to which they were first applied, an earlier name in each case having priority, (see S. F., V., p. 238.) Personally, I think the very strong recommendation of the Code of zoological nomenclature, that a generic name once used should be inapplicable a second time, at all events within the limits of the same class, should be generally enforced, as it is by most, if not all, ornithologists in England; but in this, as in one or two other cases, we need fresh legislation. Moreover, I think that, in case of the species of one genus, this rule should certainly be absolute; it is not easy to hunt up all names of genera, (although it is child's play now compared with what it was a few years ago), but there is not much difficulty in ascertaining all the specific names that have been previously given, at all events, amongst birds. Luckily, we have not in ornithology to deal with genera like *Helix* with 3,500 species, or *Ammonites* with nearly as many.

I quite admit, however, that by the strict rules of the Code, Mr. Hume is justified in using names like *Heterorhynchus*. The name *Hierax* (or rather *Ierax*) was originally applied by

Leach to the Common Sparrow Hawk, and thus became a synonym of *Accipiter*. The same name *Hierax* was again used by Vigors for the pigmy falcon, but as the generic name had been previously employed, Mr. Sharpe, in 1874, substituted *Microhierax*. Thus if names like *Heterorhynchus* are retained, it is clear that *Hierax* should also be preserved.

56 *ter.*—*Milvus affinis.*—Mr. Gurney now (*Ibis*, 1879, p. 76) considers the smaller Indian Kite inseparable from *M. govinda*. He also notices the manner in which the three kites, *M. melanotis*, *M. govinda* and *M. affinis*, pass into each other—a point to which I shall have to recur presently.

60 *bis.*—*Strix deroepstorffi.*—*Strix roepstorffi* would surely be better. It is not usual to add a prefix like *de* or *von* to a specific name, unless the affix has become part of the surname as in Delessert.

111 *bis.*—*Caprimulgus unwini.*—I greatly doubt if this can be kept apart from *C. europæus*. The case is not an ordinary one of geographical races, but there are several birds, of which the forms living in comparatively damp climates are darker-coloured and somewhat more rufous, whilst the varieties found in dry regions are lighter and greyer. *Sitta syriaca* and *S. tephronota*, the two varieties of *Certhilauda desertorum* and the Chukars of the Himalaya and of Sind or Persia, will serve as examples, and I have called attention to several others in the Zoology of Persia. I may, of course, be mistaken, as I have not had an opportunity of comparing *C. unwini* with Central Asiatic forms of *C. europæus*, but if, as I think, the two agree they are connected by intermediate varieties with typical *C. europæus*. Moreover, the distinction is, I think, solely due to the climate, and it is quite possible that *C. unwini*, if carried alive to Europe and kept in a damper climate with less sunlight, might, on moulting, become *C. europæus*.

149, 149 *bis.*—*Palæornis purpureus*, according to Mr. Hume, if I understand rightly, is the Indian or western race; *P. cyanocephalus* the Burmese or eastern form. Captain Legge, in the Birds of Ceylon, has shewn that the Indian Parroquet is the true *P. cyanocephalus*, of Linnæus, and that the Burmese form is *P. rosa*. I have not gone much into the matters, but so far as I have, I think Captain Legge is correct.

318.—*Siphia tricolor.*—I was under the impression that this supposed species was acknowledged to be merely the female of *S. leucomelanura*. If so, the name should be in italics. That the two forms are the two sexes of one bird is distinctly Mr. Mandelli's view, and both Mr. Brooks and Mr. Sharpe concur, the latter having lately figured both birds as male and female in the 4th volume of the British Museum Catalogue.

351, 351 *bis.*—No reasons have been assigned for the separation of the genus *Cyanocinclus* from *Monticola*, and I doubt if any sufficient exist. The facts that Mr. G. R. Gray classed the two as separate *sub-genera*, and that he left one sub-genus without a name does not prove the two to have any claims to generic separation.

399 *bis.*—*Pellorneum nipalensis*, Hodgs.—Where is this species described? I have never been able to find a published description. I rather think the name occurs, but without any description, in the first edition of the British Museum Catalogue of Mr. Hodgson's collections. No such name occurs in the second edition, and in the first the term appears, if it occurs, as a synonym. I cannot verify this, as the only copy of the Catalogue in Calcutta has been borrowed by a distinguished naturalist who has omitted to return it, and is deaf to all appeals, and the mere existence of the name in M. S., or the publication of a name without a description, is insufficient even to prove what the species is. In S. F., I., 293, Mr. Hume says that Mr. Hodgson figured and described *P. mandellii* as *P. nipalensis*, but gives no reference. I believe that neither figure nor description was ever published, and if so, the correct name for the species is *P. mandellii*.

389.—*Alcippe poiocephala*, Jerdon; and 457.—*Brachypodius poiocephalus.*—With reference to the remarks on p. 79, the following facts may throw some light upon this name. Swainson used the term *Poicephalus* (*sic*) for a genus of parrots, and he subsequently applied the same term, altered to *Poiocephalus*, to a Gull and a Flycatcher, as a specific appellation. The Flycatcher was No. 295—*Gulicicapa ceylonensis*. Jerdon's Grey-headed Flycatchers, called by him *Cryptolopha cinereocapilla*, Vieill., in his "Birds of India," but entered in his previous Catalogue of South Indian Birds as *Cryptolopha poiocephala*, Swainson. I do not think there can be much doubt that Jerdon took the names of the *Alcippe* and *Brachypodius* from Swainson's term for the Grey-headed Flycatcher, and it is worthy of notice that in the "Birds of India" the same epithet "grey-headed" is applied to both the Flycatchers and the *Brachypodius*. Whether Jerdon understood *poiocephalus* to mean grey-headed or not is not, I think, of much importance; but, of course, with all the Indian birds mentioned, the term *phæocephalus* would be much more appropriate than *poliocephalus*.

Swainson's generic name *Poicephalus* was published in 1837. In Gray's "Genera of Birds" the name appeared as *Poiocephalus*. Strickland, in a critique on Gray's "Genera," published in the Annals and Magazine of Natural History for 1841, Vol. VII., p. 34, corrected the spelling to *Pœocephalus*,

and the same term is marked in the "Index Universalis" of Agassiz's "Nomenclator" with an asterisk, to signify that the name has been correctly spelt. Now both Strickland and Agassiz were good classical scholars, and I think their view may be accepted.

The subject of Greek compounds is one upon which I should certainly not have the temerity to express an opinion. However, I have consulted one of the best classical authorities in India, and he tells me that the Greek word ποιος, an equivalent of the Latin *qualis*, and meaning "of some kind," might be compounded with κεφαλη, and that the resulting term would signify some peculiar qualification of the head. In short, as I understand it, the term should be written *pœocephala*, and considered nearly equivalent to the Latin word *capitalis*. I think we may fairly accept this view.

461 to 462 *ter.—Molpastes.*—The same remark applies to this genus as to *Cyanocinclus*. Neither genus has been defined, nor any reason shewn for the distinction of the species comprised under the name from other genera. Precisely as in the case of *Cyanocinclus*, *Pycnonotus pygæus* and its allies, are classed in Gray's Hand List in a separate sub-generic section, but this is not a reason for making a new genus for the reception of these species. The type of *Pycnonotus* of Kuhl (*Ibis*, 1826, p. 973,) is *Turdus capensis* of *Linnæus*, and some of the species are certainly very close to the Indian form, but there may be some structural distinction with which I am not acquainted.

491 *bis.—Saxicola kingi.*—I consider that *S. chrysopygia*, DeFil., was founded on a specimen of this bird with worn plumage. The original specimen was shot in August, and was probably about to moult or moulting. At this time, as I know from seeing many skins of *Saxicola* shot in summer, the plumage is so much worn that the colour of the basal portion of the feathers shews through, and under these circumstances *Saxicola kingi* might very well be described as leaden-ashy.

It is probable that all Mr. Hume's specimens have been shot in winter, when the bird is earthy brown. The plumage, however, I think becomes decidedly greyer in summer. I have a specimen shot in March, much greyer than the skins obtained in the cold season, and in the monograph of *Saxicola* Mr. Dresser and I described the birds from my Persian skins as greyish earthy brown. There is an absured misprint in this description, the bill and legs being put as white instead of black.

The other distinctions pointed out by Mr. Hume, S. F., VII., p. 59, between *S. kingi* and the original description of *S. chrysopygia*, do not appear to me of much importance. Any one having much experience in descriptions of birds' plumage knows

that such terms as "brownish ashy" are used by different observers in a widely-varying acceptation. I should not myself describe the rump and upper tail-coverts of *S. kingi* as bright rufous fawn, and I have specimens lying before me with the last secondaries (the tertiaries of a few ornithologists, though not of most writers) broadly margined with rufous. In the colouration of the tail, although most specimens agree with Mr. Hume's remark, some perfectly coincide with DeFilippi's description.

As to the neighbourhood of Demavend not having been explored, this is not of much consequence. I shot *S. kingi* myself only 150 miles farther south, and as no non-migratory *Saxicola* has ever yet been found in the Palæarctic region, it is very safe to conclude that *S. chrysopygia* is not a permanent resident of the Elburz mountains in northern Persia. If *S. chrysopygia* be not *S. kingi*, what is it? No other species has been discovered to which DeFilippi's description can possibly apply. I admit that the description is not very good, but I cannot see any sufficient reason for rejecting the identification.

492 *bis.*—*Saxicola hendersoni.*—It is by no means clear as yet what this species is. Mr. Dresser and I examined some specimens of *S. morio* with "dull smoky blackish grey," S. F., II., p. 327; inner margins to the quills and the other differences are in characters not unfrequently variable amongst *Saxicolæ*. The white or grey colour of the cap depends on season. A careful description of *S. hendersoni* in breeding plumage is required before the species can be admitted. It is extremely improbable that any *Saxicola* exists in Turkistan that does not frequent India or Southern Persia in the winter.

643.—*Parus atkinsoni.*—I shewed in 1872, J. A. S. B., XII., pt. 2, p. 57, that this species was in all probability the young of *Lopophanes beavani*. As, despite all the enormous collections of bird skins that have been made in Sikkim since that time, this species has never been found again. I think there can be no doubt my suggestion was correct. Mr. Mandelli tells me he quite concurs with me.

752 *sex.*—*Montifringilla mandellii.*—I understood it to be admitted that this is *Onychospiza taczanowskii*, Prjevalski, the latter name having priority.

763.—*Otocorys penicillata.*—I cannot admit on the evidence before me that *O. longirostris* and *O. penicillata* must be united. The distinction in this case is not merely a shade of colour as in *Caprimulgus europaeus* and *C. unwini*, but a different distribution of the colours in the plumage. In *O. longirostris* the black marks on the side of the neck are separated from the black breast by an intermediate white bar; in *O. penicillata* the black areas are united. This character is naturally much more con-

spicuous in fresh specimens than in skins. So far as I have seen or heard, all birds from Persia and Western Asia agree with *O. penicillata*, all Himalayan and Eastern Central Asiatic birds with *O. longirostris*. I may be mistaken, as I have not a good series to consult at present, but this is the case as I understand it, and Mr. Hume unites the two forms because he has seen intermediate varieties from Eastern Turkistan.

Now, if the existence of intermediate varieties be a sufficient reason for the union of two "species," why are *Crocopus phœnicopterus*, *C. chlorigaster* and *C. viridifrons*, *Coracias indica* and *C. affinis*, *Malacocercus terricolor*, *M. griseus*, *M. malabaricus* and *M. somervillii*, *Pycnonotus* (or *Molpastes*) *pygæus* and *P. hæmorrhous*, *Thamnobia fulicata* and *T. cambayensis*, and a host of other species, not united? Even *Gallus ferrugineus* must be joined to *G. sonnerati*, for hybrids having an intermediate character are on record.

Unfortunately this opens up a much larger question than I care to discuss at present. My own view which, I believe, differs materially from Mr. Hume's, is, that the intermediate forms are more or less hybrids; whether descended from a pre-existing stock, or making a phase of the passage from one species to another, or whether solely due to the breeding together of the two races after they have become distinct, is immaterial. I also consider that whether such forms as *Coracias indica* and *C. affinis* be regarded as species, sub-species, or varieties is merely a matter of convenience. But what I urge is, that a distinction, if constant throughout a large area, as is I believe the case with *Otocorys longirostris* and *O. penicillata*—be it understood I write under correction, and the distinction may not be so constant as I suppose,—is a biological fact of some importance, and as such should be recognized in the nomenclature, and that it is better to call each bird by a separate name.

There is one more point worthy of notice. The small short-billed form, which I called *O. elwesi*, was considered by Dresser undistinguishable from a variety of *O. alpestris*, and from the specimens Dresser showed me I must say there were good reasons for his opinion. *O. elwesi*, I think, clearly passed into *O. longirostris*. In this case *O. longirostris* passed into both *O. penicillata* and *O. alpestris*; and, if this be considered to prove the identity of these forms, all must retain the name of *O. alpestris*. To call the Himalayan bird *O. penicillata* is to place it on one of the horns of the dilemma; if intermediate varieties prove identity, the species is the same as *O. alpestris*, if not, the form is not the same as *O. penicillata*. I would retain the name *O. longirostris*.

Reply to Mr. Blanford's Criticisms of the List of the Birds of India.

Some few remarks from me seem called for by Mr. Blanford's valuable note.

I quite agree with him that the short title adopted by me for my list of the birds of the Indian Empire is not strictly accurate.

The work from which that list was compiled, and which has been so long in hand, has always stood (*vide* S. F., I., 49) as a "Conspectus of the Avifauna of India and its Dependencies."

In my "Game Birds," I have used the words "India, Burmah and Ceylon," Ceylon *not* being a dependency of India. It would have been, no doubt, *more* correct had I used this latter form for the title of my list; but even then this would, strictly construed, have excluded Assam, and having maturely considered the question, I thought that, for a rough tentative list, the short term "India" would answer all practical purposes.

I know so little of the literature of other branches of Natural History that I am in no position to deny the inconceivable ignorance that Mr. Blanford asserts to exist amongst a large proportion of European naturalists on the subject geographical distribution, but I confess that where birds are concerned, I find that my European and American correspondents—and these are now numerous—realize pretty distinctly the main zoographical provinces of our empire, and I doubt much whether my poor list will, by its curt title (explained moreover in the Preface) mislead any one or tend to perpetuate error. If it should do so, I can only express my sorrow and cry *peccavi*.

My larger list I have called a "List of the Birds of the British Empire in the East and its Dependencies;" but as it will not include Aden, nor any place east of Singapore, this likewise will not be strictly correct, and I confess that I despair of being able to work out any reasonably brief title that shall be at the same time exhaustive and strictly accurate.*

* Perhaps the best term is that which is used by Mr. Blandford, p. 178, "British Possessions in Southern Asia;" but as I shall exclude Aden and Rajah Brooks' portion of Borneo (which I suppose is a British possession) and shall include Ceylon and the Maldives, this too will be inaccurate. Moreover Gilghit, Budakshan, Wakhan, Nepal, &c., are not British possessions and are scarcely in Southern Asia; the major portion of the western half of the Malay Peninsula, though dependent on our rule, is not a British possession. "British Possessions and Dependencies in Southern Asia" might do but for Aden and Sarawak. But I confess my inabilityto hit upon any really appropriate and accurate name for the tract with which I have to deal, and I shall be grateful if Mr. Blanford or any one else can suggest one.

Then we come to the numbering of the list. I quite agree that this is clumsy, and that a fresh numbering is desirable, but that involves a re-arrangement, and it is desirable that it should, when adopted, be of such a nature as to need no very material alterations and additions.

But whilst the ablest authorities are by no means agreed as to the most suitable classification and arrangement of families and genera, and whilst every week adds some species to our list, I do not feel myself in a position to undertake usefully a re-numbering of the 1,900 species with which I have to deal.

If I live, this will all come in time; if I do not, better that the task be left for some successor, who will be in a better position to do the work.

As it is there is this to be said for the old re-numbering. It agrees, so far as he goes, with Jerdon's, in the sole existing Manual of the Birds of India, and it is that according to which almost every private collection in India is arranged. It is the numbering adopted throughout the eight volumes of *Stray Feathers*, and which is known to nearly a hundred people out here who are in one way or another helping me in my work.

It did not seem to me expedient to alter this in a rough *ad-interim* list, merely designed to serve a temporary purpose until my more complete list is ready. To change everything now, merely to change it again three or four years hence, seemed to *me* to be undesirable. I am sorry if, as Mr. Blanford says, this adherence to the old numbering has diminished the real importance of this list (though I confess my inability to conceive how it can have affected this either way); but at any rate I never intended that it should, or dreamt that it could, be taken as a new point of departure for Indian ornithology. I claim that for the establishment of *Stray Feathers*, but certainly not for this humble list.

And now to descend, as Mr. Blanford says, to particulars. And first as to the species which he considers should not have been included, being Central Asian species.

Falco hendersoni has certainly occurred in the Punjab. Colonel Delme Radcliffe has seen it with falconers there, and so have I. Only a few years ago the Rajah of Putialla had one which had certainly not come from Central Asia.

Saxicola hendersoni we have from the Nubra Valley, inside the usually accepted Cashmere (*i.e.*, Ladak) limits.

Podoces humilis has not only been sent from so near the borders of Sikhim and Tibet that it was not easy to exclude it, but from somewhere in the northern part of Gurhwal, and as far as I can ascertain well within our geographical limits.

Montifringilla blanfordi and *mandellii* had possibly no title to be included, but several specimens of the former, and one of the latter, bore on the covers and tickets "borders of native Sikhim and Tibet," and were thus catalogued, and my list was prepared from my larger list, and this catalogue at Calcutta. Referring to the specimens, I find that none of the covers so labelled are in Mr. Mandelli's handwriting, and it is, therefore, possible that in making new covers and adding tickets (Mr. Mandelli used not to ticket his birds only to write the localities on the covers) some of my museum establishment may have made a mistake. If so, it is to say the least curious that out of a number received and catalogued at the same time, some should have been entered as "Tibet" only, and others as "borders of Sikhim and Tibet." Mr. Mandelli will probably remember whether he was or was not told at the time he got these specimens that some were from Tibet and some from the borders of this and Sikhim. Pending his decision, I doubt my baboos having made any such interpolation.

I entirely agree with Mr. Blanford as to the name *Microhierax*. I ought not to have employed it. I shall revert to *Hierax*.

As for *Strix deroepstorffi*, when I gave the name, it might have been better to have dropped the "*de*," but there is no rule on the subject; practically in India the gentleman after whom I named it has had the "*de*" so soldered on to his name, that had I called it "*roepstorffi*" many would have failed to recognize whose labours (and they have been considerable) in Natural History it was intended to commemorate, and, *au reste*, having once so named the bird, I did not see the propriety of altering the name when merely compiling a list.

Whether *Caprimulgus unwini* should be kept distinct from *europæus*, is of course a matter of opinion. I can only say, that with the large series I now have of both, it seems to me more convenient to do so.

As regards the names *Palæornis purpureus* and *cyanocephalus*, which Mr. Blanford says Captain Legge has shown to be wrongly applied by me, I have only to remark that I have not yet myself worked this out indpendently, but until I can do this, I adhere to the Marquess of Tweeddale's distinct enunciation, (Birds of Burmah, J. A. S. B., 1875, Pt. II, extra number, p. 56) that *cyanocephalus* applies to the Burmese race, and that *purpureus* must be adopted for the Indian race. I verified the Marquess of Tweeddale's very elaborate statement at the time, and I thought he was right. Before I reject his view and adopt Captain Legge's, the latter must show clearly wherein the

Marquess was in error. He may have been wrong, but I failed to detect this when I examined all the original authorities referred to by him which I have not by me to do now.

Siphia tricolor.—I am quite aware that this species *may* probably prove to be only the female of *lucomelanura*, and no doubt females of this latter continually do duty as *tricolor;* but I am by no means certain that the true *tricolor*, that originally figured by Hodgson is not nevertheless distinct,* and hence I preferred not to print the latter as yet in italics, though I duly prefixed a note of interrogation to show that the question involved a doubt.

This is not the place to discuss a question involving the arrangement of a group like the Thrushes. I can only say that in my opinion the grounds for separating *Cyanocinclus* are quite as strong as those for separating *Monticola* and *Petrophila*, genera both commonly accepted. But all this is a mere matter of opinion. Thus Mr. Dresser suppresses *Merula* and unites it with *Turdus*, and he might, with equal justice, suppress most of the genera into which the Thrushes are commonly divided. Were he to do this, I for one should not be prepared to dispute his action, but if you keep *Petrophila*, *Monticola*, &c., you certainly require a *Cyanocinclus*.

I begin to believe that Mr. Blanford's name, *Pellorneum mandelli*, must stand, and Mr. Hodgson's name, *P. nipalensis*, fall. From a pencil mark attached to the plate I inferred that Hodgson had published this name; and I still believe that he must have done so, but as I cannot discover *where*, the publication of anything beyond the *name* took place I shall ultimately, if I cannot find it out, drop Hodgson's name. For the present it seemed best to retain it.

Jerdon's *poiocephalus* may probably, as pointed out by Mr. Blanford, have been taken from Swainson's, and it is possible theoretically that this latter might have been compounded as Mr. Blanford's classical friend suggests. It would be an unusual and novel, and I may add not commendable, or very rational compound. But the fact is, the explanation will not hold water; the type of Swainson's genus is *P. senegalensis*, LeVaill., pl. 116, and that represents "*Le Perroquet à tête grise*," showing clearly enough that by his *poicephala*, Swainson, like Jerdon, meant "grey headed" and not "some kind of headed." The word, who ever coined it, Swainson or Jerdon, is a blunder, a sort of Alice-in-wonderland portmanteau reminiscence of *poliocephalus* and *phæocephalus*, and can only legitimately be treated as a nonsense word, and spelt as the originators spelt it, *poiocephalus*.

* I believe, that if distinct, Hodgson himself confused the two.

It can hardly be justly said that the genus *Molpastes* has never been defined when I have twice enumerated all the species it contains. These are not to my notion congeneric with *Pycnonotus capensis*.

As to the identity of *Saxicola kingi* and *chrysopygia*, I have fully discussed the question in the passage referred to in the list. The former name is certain, the latter very doubtful to my mind; I should not be in the least surprised to see the true *chrysopygia*, corresponding accurately with DeFilippi's description turn up any day. In the meantime, following the general rule, I have retained the certain name, and have set aside the uncertain one. Perhaps I am in error, but it is not of much consequence either way.

Saxicola hendersoni.—Mr. Blanford says that a careful description of the breeding plumage of this species will be required before the species can be admitted. I fondly thought that the description I gave of the breeding plumage was a careful one. I am not usually careless in such matters, and I confess I see nothing to add now.

I agree that *Parus atkinsoni* should be entered as doubtful, and that a note of interrogation should be prefixed to it.

I myself first pointed out to Mr. Blanford that *Montifringilla mandellii* was synonymous with *Onychospiza taczanowskii*, but I am not so sure of the priority of the latter. My name appeared before the *translation* of Prjevalski's work appeared in Rowley's Miscellany, but I have vainly endeavoured to ascertain when the Russian *original* was actually *published*.* If Mr. Blandford can find this out at home, this will settle not only this, but three or four other similar cases.

I will not go into the *Otocorys* question. It is long since I have dealt with any of this very difficult group, and it would take a week's study of the huge series, which I have gradually collected from various parts of Asia, to enable me to form any definite and independent opinion.

But I may say that so far as Mr. Blanford argues that where a clear distinction is constant throughout a large area, it is a biological fact of some importance, and should be recognized in the nomenclature, by bestowing on each form a separate specific name, I am now much inclined to go with him, and it is on this very ground that I have kept *Caprimulgus unwini* separate; but in each particular case it will still remain a matter of opinion, whether the distinction is sufficiently apparent and constant, and does characterize

* I *hear* from the Continent that the publication of this ornithological portion, for some reason hung fire, so that it appeared very little if at all earlier than the translation; but I cannot understand this, as I always believed that the whole book *(Travels and Nat. Hist.)* was intended to issue at once.

a sufficiently marked area, to render the variation of any appreciable biological importance, and whether this be so or not in the case of *Otocorys pencillata* and *longirostris*, I cannot now pretend to say. Had Mr. Blanford decided that it was so after a study of the series we now have here, I for one should have gladly accepted his verdict.

A. O. H.

Notes on some Tenasserim Birds.

By Lieut. C. T. Bingham.

2.—Otogyps calvus, *Scop.*

I have seen this Vulture at various places from Pahpoon to Meeawuddy. In December 1878 I noticed one seated on a large stick nest placed high up on an inaccessible tree near Thaubia on the Zamee River.

3 *bis*.—Gyps fulvescens,* *Hume.*

4.—Gyps indicus, *Scop.*

I am not quite certain, but think I have seen both these Vultures among a lot of *Pseudogyps bengalensis* round a dead elephant near Kaukaryit on the Houndraw River.

5.—Pseudogyps bengalensis, *Gm.*

The Common Vulture of the country. In November 1877 I found a nest placed high up on a Nyoung bin (*Ficus*, sp.?) containing two unfledged young. This was near Nautch on the Attaran River, 8 miles from Moulmein.

23 *bis*.—Astur poliopsis, *Hume.*

I saw a pair of these birds strike alternately at a young puppy dog on the race course at Moulmein, and they only made off on my throwing my stick at them. The puppy was cut somewhat about the back and neck, but was more frightened than hurt. I could not make out what made the birds attack him.

28.—Aquila clanga, *Pall.*

In July 1879, on the borders of a quin or marsh near Kamaulai on the east bank of the Salween River, I came on a pair of large black-looking Eagles, seated on the branch of a dead tree, well out in the water. I had just come

* This would be new to our list, but I cannot admit it until specimens are procured.—Ed.

eighteen miles of a weary up-hill and down-dale march, was wet through to the skin, for it had been raining the whole day without ceasing, and tired, cold and hungry, did not at all feel inclined to go after birds. Still I made one attempt to get up within shooting distance of the Eagles, but they were too wary, and flew off to the other side of the quin where I left them. Next day they were nowhere to be seen. I presume they were of the above species.

41.—Polioaëtus ichthyaëtus, *Horsf.*

In January 1877, I found a pair of these birds breeding near the village of Oolai on the Attaran. The nest, which contained one unfledged young one, was placed on the lowest fork of a small Kamjin tree about sixty feet from the ground.

The Karen whom I sent up reported that it was made of sticks and twigs, and unlined. The parent birds sat on a neighbouring tree and looked on, but offered no opposition to the climber.

53.—Circus melanoleucus, *Penn.*

In January 1877, I noticed several pairs of this Harrier, beating some paddy fields near Oolai, on the Attaran. I did not then secure any specimens, but later got one, a male, in the black and white plumage, near Moulmein.

56.—Milvus govinda,* *Sykes.*

Common in the cold and hot weather at Moulmein, and at Kaukaryit on the Houndraw. This is not the smaller Kite (*affinis*) which also occurs. Towards the beginning of the rains, *i.e.*, the end of May, I found them (*govinda*) migrating in small flocks at Kaukaryit, going apparently westwards.

58.—Baza lophotes, *Cuv.*

I have only once seen this striking looking bird, and that was a solitary specimen, seated with crest well erect, as described by Mr. Davison, on a tree in the compound of the forest bungalow at Kaukaryit. Of course, I had no gun in my hand, and while I was frantically calling to my servant for the same, the bird took itself off.

60.—Strix javanica, *Gm.*

Rare in Tenasserim certainly. I have seen only two. The first was in the possession of some Burmese boys, who refused to sell it; it seemed very tame, feeding out of their hands.

The second was a sick and dying specimen, in beautiful plumage, though captured alive in the compound of the

* New to the list, I hope specimens have been preserved.—Ed.

Deputy Conservator of Forests, Dr. Slym's house. He kindly sent it over to me: and as the bird would not eat I poisoned it with cyanide of potassium and prepared the skin. Unfortunately, however, it was left for the night on the top of a book-shelf, and a vile rat gnawed off both feet.

Both specimens were captured at Moulmein.

84.—Hirundo filifera, *Steph.*

I identified, but failed to secure, specimens of this beautiful Swallow at Kamangla rapids on the Thoungyeen River. In July 1879 I found them common about the paddy fields near Kamaulai on the Salween, and secured a few specimens.

I only noticed them for a day or two, and then they passed on westward. Wings of the three specimens obtained measure 4·12, 4·40, and 4·50 respectively.

? 85.—Hirundo erythropygia, (?) *Sykes.*

It is doubtfully that I enter three specimens of a Swallow obtained at Kaukaryit in the beginning of May, under the above name.

There were large flocks of them evidently migrating, but very wary, never letting me come up closer than 50 or 60 yards.

87.—Cotyle riparia, *Lin.*

89.—Cotyle sinensis, *J. E. Gr.*

Both these Sand Martins are common in the cold weather round Moulmein.

102 *bis.*—Cypsellus infumatus, *Sclat.*

Occurs wherever the palm tree (*Borassus flabelliformis*) has been planted. In April 1878, I climbed up one of these and found four nests, identical with those I have taken of its near ally, *C. batassiensis*, in India, and placed in the same position on the under side of the frond of the palm. Unfortunately I was too early for eggs.

104.—Dendrochelidon coronata, *Tick.*

I procured two specimens at Laidawgyee on the upper portion of the Thoungyeen River.

118.—Merops philippinus, *Lin.*

In March 1877, I found large parties of this Bee-eater breeding in the sandy banks of the Salween at Shwaygoon. It is

not uncommon, and breeds at Kaukaryit on the Houndraw. I observed a pair or two there as late as June 29th.

122 *bis.*—Nyctiornis amictus, *Tem.*

I shot two specimens of this bird in dense evergreen forest on the Zamee River. I also secured three out of a party of seven (probably a family) at Moulmein in September 1878.

126.—Eurystomus orientalis, *Lin.*

I got one specimen on the Gwoongyee Choung, a feeder of the Zamee River, on the 15th February. I noticed two others also, but failed to secure them.

130.—Halcyon pileata, *Bodd.*

In April 1877, I found this bird not uncommon on the Younzaleen River near Pahpoon. Thinking it common all over the country, I did not secure any specimens at the time. I see it has not been recorded from the north of the province before.

132 *ter.*—Carcineutes pulchellus, *Horsf.*

Fairly common in the Thoungyeen jungles. A regular forest Kingfisher.

133.—Ceyx tridactyla, *Pall.*

I have three or four times come suddenly on this bird in the dense evergreen forests between Kaukaryit and Meeawuddy. I have hitherto, however, failed to get a specimen.

137.—Ceryle guttata, *Vig.*

Two or three pairs of this large Black and White Kingfisher frequented the rocky portions of the Golee Choung, one of the sources of the Thoungyeen River, in September 1877 ; but they were so wary that I failed to get even a shot at one.

138.—Psarisomus dalhousiæ, *Jam.*

I procured several specimens of this lovely Broadbill at Tounjah, half way between Kaukaryit and Meeawuddy, in April 1878. They were breeding then, and I discovered no less than six nests on one tree, but all un-get-at-able, the tree being covered with sharp, strong curved thorns, on hexagonal bases. In July 1879, I shot one at Koosaik in dense evergreen jungle, low down on the Thoungyeen River near its junction with the Salween.

144 *bis.*—Ocyceros tickelliæ, *Bly.*

This species was not uncommon in the Kyoon Choung Reserve high up on the Zamee River, again between Meeawuddy and Kaukaryit, and I saw a flock once in July 1879 between Yunbine on the Salween River and Koosaik on the Thoungyeen. Everywhere, however, it keeps to the tops of the very highest trees, and completely out of the range of an ordinary shot gun.

146 *bis.*—Rhyticeros undulatus, *Shaw.*

I noticed this Hornbill first in the Kyoon Choung Reserve on the Zamee River, a place which seemed to abound with Hornbills of various species. It kept in parties of twos and threes. Lower down on the Zamee River, at the mouth of the Gwoongyee Choung, Mr. Aplin, Assistant Conservator of Forests, shot a fine male and kindly gave it to me. It measured in the flesh :—

Length, 42·00; expanse, 65·00; wing, 20·35; tail, 15·10; tarsus, 3·00; bill from gape, 7·20.

Irides yellow; gular skin deep saffron color, with an imperfect dark band.

169 *ter.*—Thriponax feddeni, *Blanf.*

I procured this handsome Woodpecker at Thaubia on the Zamee, and noticed it more than once at various places on the Wimgeo River; and on the Thoungyeen, at Laidawgyee, Kyonkhet, Oukra, and Maigla. I procured four specimens, but the unfortunate upsetting of a raft over the rapids of Kamangla on the Thoungyeen, lost me the collection of three months, made in forests little visited.

195 *bis.*—Megalaima incognita, *Hume.*

Not uncommon in the Thoungyeen forests. I have also one specimen from the Kyoon Choung Reserve on the Zamee River.

223.—Arachnothera magna, *Hodgs.*

I have three specimens, all from the Thoungyeen forests. One procured, 25th September 1877, as far south and east as the mouth of the Maigla Choung, one of the sources of the Thoungyeen.

225 *ter.*—Æthopyga cara, *Hume.*

One specimen shot as far north as Koosaik on Thoungyeen River near its mouth, on the 20th July 1879.

236.—Dicæum cruentatum, *Lin.*

I procured this species as far north as Pahpoon, and again at Koosaik.

236 *bis.*—Dicæum trigonistigma, *Scop.*

At Koosaik, in July, I found a creeper in flower close to my camp, and obtained several birds on it; among others one specimen of this, but so shattered that the head and most of the feathers of one wing came clean off in attempting to skin it.

346 *ter.*—Anthocincla phayrei, *Bly.*

I shot one, a male, in the Meplay Reserve on the Thoungyeen River. At the same time I saw the female, and I suspect they had a nest there, but I failed to find it.

350 *bis.*—Zoothera marginata, *Bly.*

One specimen procured in August 1877, in the low hills to the east of the Thoungyeen River in Yabine. A second shot 28th March 1879, near the village of Yoko Meplay Choung, Thoungyeen River, a male, measured in the flesh:—

Length, 11·20; expanse, 17·30; wing, 5·62; tail, 2·70; tarsus, 1·30; bill from gape, 1·78.

465.—Phyllornis aurifrons, *Tem.*

Dr. Jerdon says that the female "wants the golden forehead." It may be so with Indian birds. Here male and female alike possess it. I have ascertained this beyond a doubt.

669 *bis.*—Garrulus leucotis, *Hume.*

This Jay is not uncommon between Kaukaryit and Meeawuddy, and on the Meplay Choung.

I am not quite certain, but I think I heard its very peculiar chuckling note in the Kyoong Choung Reserve on the Zamee River. I failed, however, to see or secure a specimen.

706.—Passer indicus, *Jard.* and *Selb.*

I have noticed a few stragglers of this at Moulmein. At Rangoon, in December 1876, I noticed that it was common. Those seen at Moulmein may have been introduced by the shipping. One rare straggler reached me at Kaukaryit on the Houndraw, and, though I waged war against the species in India, I made a pet of this one, and used to feed him daily for nearly a month, when he disappeared. Though solitary and an exile,

he had lost none of his native check, and after the first few days used to perch composedly on the corner of my table while I was having my breakfast, and regale me with his opinion on things in general.

782.—Alsocomus puniceus, *Tick.*

I first noticed this bird in March 1877, when I stopped a Karen who was carrying three Pigeons, half-plucked, in his hand, to look at them, and found they were all three of this species. Subsequently I saw them pretty frequently in ones or twos near to that same man's village in the Sinzaway Reserve, but never was fortunate enough to secure any, the fact being that thinking it was probably common all over Tenasserim, I did not take any particular pains to shoot them. I left the Sinzaway Reserve in May 1877, and have never been there since; nor have I had the luck to even see one from that time to this, though I have been all over the Zamee, Wmyeo, Thoungyeen, and Houndraw jungles.

The call of this Pigeon is a soft mew, not unlike that of *Carpophaga œnea*, only not half so loud or booming.

842.—Glareola orientalis, *Leach.*

One specimen shot at Kaukaryit out of a small party on the 5th April 1878.

867.—Scolopax rusticola, *Lin.*

On the 28th April 1879, I flushed an undoubted Woodcock, among some willows on the bank of the Gyne River. Unfortunately I had no gun in my hand. I don't think I could have made a mistake, as I was familiar with the bird in my boyhood.

870.—Gallinago sthenura, *Kuhl.*

871.—Gallinago gallinaria, *Gm.*

It is very strange that at the beginning of the Snipe season one gets only the former of these two birds, and at the end chiefly the latter, with only one or two perhaps of the former.

G. sthenura comes in about the middle of August around Moulmein. A register kept by Captain Dodd, the Master Attendant of Moulmein, a keen sportsman, showed the 17th August as the earliest date on which he has shot his first Snipe, during the last seven or eight years.

In 1878, he and I procured four couple between us on the 17th August. The largest bag I have seen was 27 couple, but I have *heard* of 100 couple (?) to one gun.

The Pin-tail flies slower, and rises more lazily than the Fan-tail.

G. gallinaria comes in about the end of September. I note that the first I shot near Moulmein were a couple on the 23rd September 1878.

933.—Ardetta cinnamomea, *Gm.*

Female.—Procured in the Sinzaway Reserve, 12th April 1877.

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849 *bis.*—Ægialitis hiaticula, Lin.

In a collection of birds made by Mr. W. N. Chill, near Sultanpur in the Goorgaon District, I found a small Plover killed on the 28th November 1878, which is clearly referable to the present species.

This is the first authentic instance, I believe, of the occurrence of this species within our limits.

This species occurs throughout Europe, in Asia Minor, Palestine, on the Caucasus, in the Caspian region, in Western Turkistan, and in Siberia, where Middendorff found it breeding in the extreme north on the Taimyr, nearly in the 74° N. Lat. Pere David procured a single specimen near Pekin.

It is a regular winter visitant to North-East Africa, and appears as a straggler in various other parts of Africa to the extreme south. Mr. Gould records a specimen from Australia.

Mr. Gray, in his Hand List, includes Persia in its habitat, but neither Blanford nor St. John met with it there; and, though its occurrence in India renders its appearance in Persia highly probable, this fact still requires confirmation.

This species was formerly included in my Catalogue of the Birds of India, on the strength of Blyth's remarks, *Ibis*, 1867, page 165, that two specimens in Mr. Hodgson's collection, named by Mr. Gray *Charadrius placida*, were, in his opinion, nothing but *Ægialitis hiaticula*. But after Swinhoe had described his *Ægialitis hartingii*, P. Z. S., 1870, page 136, and I had described my *Eudromias tenuirostris*, S. F., I., page 17, Mr. Harting, in the *Ibis* for July 1873, showed that both these species were identical with *Charadrius placidus*, Gray, and that Blyth was in error in identifying this with *Ægialitis hiaticula*, which latter species accordingly, losing its sole claim to

occurrence within our limits, had to be erased from the list of our Avifauna (*vide* S. F., I., 495).

The occurrence of this species in India being now, however, established beyond all doubt, it becomes necessary to describe it, and point out how it may be readily distinguished from other allied forms which have hitherto been known to occur in India.

It may be well to premise that Sultanpur, in the neighbourhood of which this specimen was procured, is in Northern India, and about 30 miles south of Delhi.

In breeding plumage this species can be distinguished at a glance. The legs, feet and bill orange yellow; the tip of the bill and the claws black; chin, throat and a collar round the neck white; a broad black band across the breast continued as a narrow black collar behind the white one. The whole anterior portion of the head, lores, cheeks, ear-coverts black, with a white band across the forehead from eye to eye, and another white band over the posterior portion of the eye and ear-coverts; crown, occiput, and rest of upper parts of a greyish earth brown, darker on the earlier primaries and the whole of the lower parts below the black breast band; wing-lining and axillaries pure white. The outer tail feather on each side pure white; the rest, except the central ones, tipped white, and with a dark brown subterminal band.

But it is not in this plumage that we are likely to meet with the bird, nor, I apprehend, are we likely to get many adults. It will probably be mostly birds of the year that will be met with, and these are by no means so easy to discriminate.

I have no measurements recorded in the flesh, but I have a number of European specimens as well as this Indian one, and the following appear to be about the dimensions. The birds I may note vary a good deal in size, according possibly to age or sex:—

Length, 7·0 to 8·0; wing, 4·96 to 5·55; tarsus, 0·92 to 1·1; tail, from insertion of feathers into the *os coccygis*, 2·4 to 2·75; bill at front, from frontal bone to tip, 0·68 to 0·78.

In the young the legs and feet appear to have been a duller horny yellow; the bill dark horny brown, yellowish at the base of the lower mandible.

As regards the color of the legs, therefore, it resembles *dubia*, and as regards the bill *minuta* (*vide* S. F., VII., 299, 300), but the bill is much coarser and larger than in either species, and the legs also are coarser, the feet much larger, and the wings of course very much longer.

A band over the base of the bill and through the lores to the eye greyish brown; a band under the eye and over the ear-coverts dark brown; forehead dingy brownish or buffy white;

chin, throat and a collar round the back of the neck, white; crown, occiput and nape above the white collar, a greyish or earthy brown, much the same color as in *dubia;* a broad, dark brown band on the breast, more or less interrupted towards the centre; a blackish brown band running from this round the back of the neck immediately below the white collar; entire mantle, rump, upper tail-coverts and central tail feathers like the crown, and much as in *dubia.* In the youngest birds with an excessively narrow whitish margin to the tips of the feathers with a darker hair line inside this, but in somewhat more advanced birds, like the Indian specimen before me, scarcely a trace of this remains.

The centre tail feathers darker brown towards the tips.

The primaries somewhat darker, as are in a less degree their coverts and the secondaries. The secondary greater coverts tipped with pure white, forming a distinct transverse white band; traces of this white tipping on the primary greater coverts. The fifth and succeeding primaries with a white patch on the outer webs forming in the half-closed wing a longitudinal white stripe. The whole of the lower parts below the breast band, including the outer tail feather on each side, the wing lining and axillaries, pure white. The rest of the tail feathers, except the central ones, more or less broadly tipped white, and with a more or less broad, blackish brown subterminal band.

Now this may seem very like *dubia* or *minuta* in certain stages of plumage, and the birds *are* very like in young and non-breeding plumage, but independent of the much coarser bill and larger size of the present species, already alluded to, *dubia* and *minuta* both want the conspicuous white transverse bands formed by the tips of the secondary coverts, and the longitudinal band formed by the white patch on the outer webs of the fifth and succeeding primaries in *hiaticula.* Moreover in *dubia* and *minuta* there is always a blackish brown spot about the middle of the inner web of the outer tail feather, which feather appears to be always white in *hiaticula.* Again, in *dubia* and *minuta,* the whole of the shaft of the first primary, except at the extreme tip, is white, while the whole of the shafts of all the rest of the primaries is brown, whereas in *hiaticula,* the shafts of all the primaries are similar, and have nearly the basal halves dark brown, and the rest, except the extreme tips, pure white. If these differences are borne in mind, it will be impossible to confound *hiaticula* with either *dubia* or *minuta.*

If, now, we compare this species with *cantiana* and *mongola,* we find that both these have the same transverse and longitudi-

nal white wing bands that characterise *hiaticula*, but both of these have the shaft of the first primary white or whitish to the base, while in *hiaticula* nearly the basal half of the shaft of the first primary is deep brown. Then both species have the legs dusky greenish or plumbeous, while in *hiaticula* even the young birds appear to have the legs yellow, though it may be dingy.

Again, *cantianus* is smaller and has a wing never, I think, exceeding 4·6; and moreover *cantianus* has the *two* outer feathers on each side all but pure white and without *any* black spot on them, and the whole tail wants the conspicuous subterminal blackish band which characterise the lateral tail feathers of *dubia* and *hiaticula;* moreover *cantiana* entirely wants the more or less pronounced (according to age and season) black band behind the white nuchal collar, which black band is more or less traceable in even quite immature *hiaticula*.

In *mongola* the wing runs up to 5·1, but then *mongola* never has *any* white nuchal collar, and has a much larger bill age for age, and it never has any black on the breast or round the back of the neck; and, though even its outermost tail feather is shaded on the inner web towards the tip with grey brown, the entire tail wants the conspicuous blackish brown subterminal band, characteristic of *hiaticula, dubia*, &c.

I know that these little Plovers are difficult to discriminate, but if the above remarks are carefully borne in mind, it will be impossible to confound *hiaticula*, even in its immature state, with the corresponding stage of either *mongola, cantiana, dubia* or *minuta*, and as for *geoffroyi*, that is so much larger with a tarsus 1·5 to 1·6 and dusky greenish, and a bill nearly an inch in length, that this cannot be mistaken for *hiaticula*.

As for both *asiatica* and *vereda* they, too, are much longer-legged birds, with the tarsi 1·5 in the one and 1·8 in the other, and with no white on the wing, so that I think that any of my readers, who may chance to meet with *hiaticula* in future, ought to have no difficulty in identifying it.

There is indeed another species, *Ægialitis nigrifrons*, of which Jerdon obtained a single specimen at the Pulicat Lake, near Madras; but this appears to be always characterized by the more or less maroon or chestnut color of the scapulars, and the arrangement of the black and white about the head is quite different to that of any of our other species. It has been fully described, S. F., VII., 439.

Lastly, there is a tiny species, *Ægialitis peroni*, known to occur in Borneo, Java, &c., and which very probably occurs both in the Malay Peninsula and in Southern Tenasserim, but which has not yet been recorded from either of these loca-

lities. This species is much like *dubia*, but the wing is only about 3·75 in length. It has no black band over the base of the bill, only a black line from the gape to the eye, and from behind the eye backwards. The entire forehead is broadly pure white, and this white continues unbroken over the eye, and backwards over the ear-coverts, whereas in *dubia* the black of the anterior part of the crown comes right down to the eye and divides the white of the forehead from the white band over the posterior portion of the eye and ear-coverts. Lastly, the black on the anterior portion of the crown is very much narrower than in *dubia*, and runs at once into the brown of the crown instead of being divided from this by a narrow greyish white band as in *dubia*.*

A. O. H.

Ceriornis temmincki, J. E. Gray?

Major C. H. T. Marshall has recently received through Major Charles Cock, from Lieut. Stevens, a *Ceriornis* brought from the Mishmi Hills at the extreme east of Assam, which, though it differs in some minor particulars from Elliot's plate,† and his and other meagre descriptions available, is yet I believe referable to *C. temmincki* of Gray.

There is no certainty of course that the Mishmis, who brought down this specimen, procured it in their own hills, but there is good reason to believe that they did so. Hitherto the species has been known from Central China, from near Hankow to the Eastern Hills of Setchuen, but these latter extend to within probably 200 miles of the Mishmi Hills, and, though believed to be divided from them by at least two profound river valleys, there is nothing *primâ facie* to lead us to disbelieve in this south-western extension of the bird's range.‡

Ceriornis temmincki is most like *Ceriornis satyra*, but may be distinguished at once by having the interscapulary region,

* These remarks refer to *peroni* in spring and summer plumage. In winter plumage it has been thus described :—

"Light brown above, with a rufous tinge on the sides of the head; a narrow band of white runs across the forehead and over to the top of the eye; it then turns rufous and so passes over the ear-coverts. The loral streak is light reddish brown. The nuchal white ring is indistinctly indicated, being marked with light rufous, which is also the colour of the breast-patch, and runs faintly across the breast. The rest of the under parts are white; and the wings and the tail have the same markings as in the adult."

† David and Oustalet also figure this species, but little can be learned from *their* plate, and their description too is anything but full.

‡ Since this was written I see that the specimens of this species, observed by Mr Bennett in Mr. Beale's Aviary at Macao, had been procured in Yunan, the north-western portions of which almost meet the Mishmi Hills, so that there can be no reason to doubt that this bird did really come, as supposed, from these latter.

scapulars, back, rump and upper-tail coverts the same rich maroon red as the lower part of the back of the neck, thickly dotted with circular or oval pearly grey or greyish white spots, more or less completely encircled by a narrowish black band. Also by having the breast and under parts all thickly set with huge, oval, pearly grey spots, occupying more than half the visible terminal portions of the feathers, spots not surrounded by a black line as are the much smaller ones on the breast of *satyra*.

The following are the dimensions taken from this Mishmi skin, which is that of an adult male :—Length, about 23·0; wing, 10·3; tail from the *os coccygis*, 9·0; tarsus, 3·2; mid toe and claw, 3·0; bill from gape, 1·5.

The bird is, therefore, much about the same size as *satyra*. The colors of the soft parts I quote from Pere David :—" Irides chestnut; bill white; culmen and base brownish; legs and feet of a rosy flesh color, inclining to red; horns of a bluish green, indigo blue at the base; naked skin round the eye indigo blue, with the lores and eyebrows green; gular apron* indigo blue, passing to greenish blue on the edges, which are ornamented with *square* patches of purplish red." (Gould figures these patches as oval and crimson.)

The forehead and anterior portion of the crown, (the central feathers of which are elongated and form the anterior portions of the crest), the sides of the head, including the ear-coverts and a band round the margin of the gular skin, black; the posterior portion of the crown and occiput, (the feathers of which are elongated and form the central and posterior portions of the crest) and the feathers of the upper part of the neck all round immediately adjoining the black already referred to, a sort of orange yellow at their bases, becoming a ferruginous maroon towards the tips.

The upper part of the back of the neck, interscapulary region, scapulars, back, rump and all but the longest row of upper tail-coverts a rather dull maroon red, the feathers with numerous small circular or oval greyish white to pearly grey spots, surrounded by a black band, more or less imperfect in some, and showing here and there, where the feathers are slightly disturbed, a tongue-shaped black band running up from this black frame which encircles the spot, and with a zig-zaggy whitish line inside the margin of this tongue. The longest upper tail-coverts are grey brown, washed towards their margins with rusty maroon. In the next row of tail-coverts above these the greyish white spots are very much larger than in the

* The Mishmee bird is *said* to have had the wattles yellow.

smaller upper tail-coverts, and almost entirely want the black encircling band.

The tail is black, the basal three-fourths or more, profusely variegated with irregular, transverse, zig-zaggy bars, of a warm buff color, more or less ferruginous on the lateral tail feathers; the exterior tail feathers of all are fully two inches shorter than the rest, and are only blackish brown and show a dull imperfect rufous buff tipping; a faint trace of the same on the next pair; the primaries and their greater coverts and the secondaries are black variegated like the tail; the markings on the secondaries being, however, paler and yellower; the winglet, the two longest feathers of which are longer than the primary greater coverts, and have the outer webs a uniform rich ferruginous orange buff, form a conspicuous longitudinal band on the anterior portion of the wing—a feature common to *Ceriornis satyra;* the shoulder of the wing a sort of orange maroon; the tertiaries and the rest of the coverts much like the back, except that the pearly grey spots are larger, and that the feathers are here and there variegated with zig-zaggy irregular spots, patches or bars, of yellowish white to ferruginous buff, set in black, which, however, are only conspicuous on the tertiaries; the edge of the wing and the smaller lower wing-coverts orange buff, the feathers washed at the tips with maroon.

The breast and entire lower parts, except the tibial plumes and the longest lower tail-coverts, mingled rich maroon and delicate French grey; the feathers of the breast and upper abdomen being maroon, with a huge terminal oval grey spot, which, in all the feathers of the breast, goes quite, or almost quite, to the end of the feather, while, in the feathers of the lower abdomen and flanks, there is a perceptible, though narrow, maroon fringe left beyond the grey spot, and in the lesser and median lower tail-coverts this fringe is so much more developed that the grey spots are only subterminal; the longest lower tail-coverts are blackish brown, with a rufous ferruginous shaft and traces of imperfect bars of the same color, and washed towards the margins and tips with rusty maroon. On the sides of the body opposite the breast, and again in places on the flanks, traces of the basal portions of the feathers, black, variegated with irregular zig-zaggy transverse bars of white, or buffy white, are visible where the feathers are disturbed; whether they would be so in life I cannot say. The tibial plumes are orange ferruginous, tinged with maroon.

Mr. Elliot's plate, beautiful as it is, completely hides the anterior portion of the wing. I cannot, therefore, be certain that the true *temmincki* exhibits the peculiar coloration of the

winglet above referred to, nor is it shown in Gould's equally beautiful picture, nor is it referred to in any single description to which I have access; but this probably is a mere oversight.

Again, in Mr. Elliot's picture, the whole of the feathers of the lower surface are represented as having very broad maroon borders extending beyond the grey, or, as he represents them, almost *white* spots; but Mr. Gould figures these spots correctly pearly grey, and represents them with extremely narrow terminal fringes, so that on the whole I have no doubt that our present bird is identical with the Chinese one.

I have seen no specimen of the female, but figures show that she is very similar in marking to those of *satyra*, but altogether paler colored and greyer.

This species must now be included, I suppose, in our list of the Birds of the Indian Empire.

A Contribution to the Ornithology of Nepal.

By J. Scully.

The following notes on some Birds of Nepal were made during the course of a residence of two years in that country. I was induced to collect the birds hereafter recorded, and to note the localities from whence they were obtained, because I found that, although Mr. Hodgson had collected probably every species known to occur in the State, there was hardly any information on record about the particular stations of those species in a country characterised by the utmost diversity of physical configuration, elevation above sea level, and climate.

In the British Museum Catalogues of Mr. Hodgson's collections, the distribution of the birds obtained by that naturalist is not attempted: the usual remark which there follows the synonymy of each species is "Inhab-Nepal;" though, no doubt, occasionally "Northern Snowy Region" or "Lower Hills" are specified.

In his essay on the Physical Geography of the Himalayas, Mr. Hodgson gave a sketch of the principal *genera* of birds characteristic of his Northern, Central, and Lower Regions of Nepal; and in the notices of birds described by him as new, he indicated the localities from which they had been procured, but these refer to very few species, and moreover occur in publications now very difficult of access. After all I found it impossible to arrive at any certain conclusion about the species inhabiting the Nepal Valley, for instance, without actually making a collection there.

I will now give a brief account of the part of Nepal where my birds were obtained, as this is a necessary introduction to my detailed list of species.

I.

The State of Nepal, as is well known, extends for about 500 miles in length, from Kumaon on the west, to Sikhim on the east, and has an average breadth of about 100 miles. The total area of the country is about 54,000 square miles, and the number of its inhabitants is probably not more than 3,000,000, although estimated by the Nepalese themselves at over 5,000,000. Within this territory the name *Nepal* is only applied to the great valley in which Kathmandu, the present capital of the country, is situated; but as the natives have no name to signify the whole territories of the Maharaj Adhiraj of Nepal, to which the title of Nepal has been applied by all English writers, I have found it necessary to distinguish the valley of Kathmandu as *the Nepal Valley* or *Valley of Nepal*, while the word *Nepal* alone I use to designate the whole country.

The only portion of Nepal which I have traversed consists of the main road from Segowli to Kathmandu, the great Valley of Nepal, and a small tract of country round the latter, including the Nawakot District. These parts have been very fully described by many writers, especially by Father Giuseppe, Kirkpatric, Buchanan-Hamilton, Hodgson, Smith and Wright. From the writings of these authorities, aided by my personal observation, I have compiled the following slight sketch of the country to which my observations refer.

On leaving Segowli, a small cantonment in the Chumparun district, the Sikrana river is crossed, and from thence there is a fair driving road for twelve miles to Hurdea. Four miles beyond Hurdea the Ruksaul stream is crossed, and Nepal Territory is entered at sixteen miles from Segowli, the road running a little east of north. Still proceeding northwards, the road for some ten miles beyond Ruksaul is a mere cart tract through a country differing in no respect from that of Chumparun generally: level land, richly cultivated, with hamlets dotted about, and adorned with many fine topes of trees and clumps of bamboo. This represents the tract of country hereafter referred to as the plains of Nepal; it is separated from the adjoining British territory by a purely artificial line.

Four or five miles of road, further on, takes us to the edge of the Sâl forest, past Semrabasa; the latter is a small village on the border of the forest about the same height above sea level as Segowli. The strip thus crossed is the true *Tarai*, which, in winter at least, differs very little in appearance from the plains proper.

It is, perhaps, a little lower, less cultivated and more intersected with small streams; and small swamps are met with in it here and there. During the rains this tract is a waste overgrown with long grass; water-courses are frequent and cut up the road, and it then differs conspicuously from the adjoining plains in being so highly malarious that only certain races, such as Dhangars, who are inured to the climate, can then live there with impunity. Whenever the Tarai is mentioned in the following pages, the word is used in a restricted sense to designate only this swampy tract immediately below and south of the Sâl forest.

About thirty miles northwards of Segowli, then, we are on the edge of the great Sâl forest, which rises suddenly, and with a straight outline stretches east and west as far as the eye can see, on ground a little raised above the Tarai strip. From Semrabasa there is a straight road through the dense forest for ten miles to Bichiakoh. This portion is the Jhári or Bháver of the natives, and forms the slightly ascending slope from the Tarai to the Sandstone Ridge. With the exception of a small stream (dry in the cold weather) which crosses the road about three miles south of Bichiakoh, this forest region is quite waterless; but it is as malarious as the Tarai during the hot weather and rains. The forest is composed mainly of Sâl (*Shorea robusta*), with a few Simal or Silk Cotton trees (*Bombax sp.*) interspersed, and a comparatively slight undergrowth of grass and scrub.

Bichiakoh, at the southern base of the Sandstone Range, consists of a few huts and a substantial rest-house built on the banks of a small stream having a shingly bed. Two or three miles west of Bichiakoh, I came across a small but very deep lake in the heart of the forest; it was tenanted in winter by great numbers of swimming birds. From Bichiakoh the road lies along the broad bed of the stream above mentioned, for eight miles, to the summit of the Churiaghati or Sandstone Range. The banks of the torrent bed are at first composed of light grey sand gradually increasing in height; a little beyond Bichiakoh the sand is overlaid by conglomerate, which then at first rapidly increases in depth and forms high cliffs on each side of the road. The pebbles in this conglomerate section are largest high up, near the surface of the slope which is pretty thickly clothed with *Pinus longifolia* and other trees. As the Pass is neared the ascent becomes steep, and at the summit of the range the road runs through a narrow gorge, probably artificial, from which the name of Churiaghati is derived.

A slight descent from the Churiaghati takes us again into a shingly torrent bed, and on quitting this, the road runs through

a pleasant Sâl forest, on gently undulating ground, to Hetoura, five miles from the crest of the Sandstone Range. This *Dun* (Dhoon) or *Mári* of Hetoura is a characteristic example of these well-known sub-Himalayan valleys; lengthways its direction is nearly east and west, its breadth is about six miles, it slopes gently from either side towards the centre, and is traversed lengthwise by the streams of the Kurru and Rapti. During the hot weather and rains the Hetoura Mari is as malarious as the Bháver.

The ridge which flanks Hetoura on the north is cut up in various directions by narrow glens, whose sides are thickly covered with forest. The Rapti flows down one of these glens, and along the banks of this stream lies the road onward towards the Nepal Valley for the next ten miles or so. A little above Hetoura, the Samri, a fine large stream during the rains, joins the Rapti nearly at right angles. There is a steady, but gradual, ascent up the gorge of the Rapti for about eight miles to the hamlet and rest-house of Nimboatar. The scenery along the greater part of this road is as picturesque as one would wish to see: the clear waters of the Rapti tumbling down in their winding course, and the lofty walls of the glen richly clothed with beautiful forest, form a most charming view. At every turn of the road fresh beauties greet the eye of the traveller, and the excellence of the road, and of the bridges over the river, help the enjoyment of the scene materially.

At Nimboatar, where the glen widens out, there are large boulders in the bed of the stream against which the waters dash and foam, forming during the rains a grand torrent. Altogether the glen of Nimboatar is worthy of comparison with some parts of the Sind Valley in Kashmir—perhaps the highest praise that can be bestowed on scenery of this kind. As usual, the hill-sides, having a northern exposure, are more densely covered with forest than those on the opposite side.

From Nimboatar to Bhimphedi the distance by road is about six miles, there being a regular ascent the whole way. Along the road there are some of the finest Simal (*Bombax*) trees I have ever seen; their great height is only fully realized when one tries to shoot one of the many birds that feed on their flowers in December. The scenery here is inferior to the lower part of the road; the valley has now widened out a good deal; there is a considerable amount of cultivation in parts, and isolated hamlets make their appearance as Bhimphedi is neared.

Bhimphedi is a fair-sized village, the houses being built of red bricks as is usual in Nepal. It stands at the head of the valley we have traversed since leaving Hetoura, immediately under the steep Sissagarhi Ridge—which here has an east and

west direction, and closes the northern end of the Rapti glen. The tract of country which intervenes between the plains and the Sissagarhi Range represents Mr. Hodgson's division of "Lower Region" of Nepal—a region about thirty miles in breadth, varying in elevation from the level of the plains to 4,000 feet above the sea, and highly malarious during the hot weather and rains.

Some English writers speak of the "Tarai" as terminating at Bhimphedi. This is no doubt an error; the natives of the country do not confound the true Tarai, the Bháver, Dun and lower hills under one general term.

The ascent of the Sissagarhi hill from Bhimphedi is very steep, and the path is rugged, passing in parts over loose shingly ground. About 1,600 feet above Bhimphedi is the Fort and rest-house of Sissagarhi or Chissapani, the latter name being derived from a spring of cold water above the Fort. From this point there is a fine view of the wooded hills east and west of the Rapti Valley. A further ascent of some 500 feet takes us to the Pass over the Sissagarhi Range—not less than 2,000 feet above the village of Bhimphedi; here the ridge is well covered with oak trees.

From the Sissagarhi Pass to Tambeh Khani, the descent is longer, but not nearly so steep as on the southern or Bhimphedi side; the road lies mainly through a fine forest of oaks and chestnuts, but near the foot of the hill it passes over rough stony ground and boulders.

At the north base of the Sissagarhi Ridge a clear rapid stream is crossed, whose bed is encumbered with very large boulders. During the rains there is a very fine torrent at this part, and a little above a picturesque lateral cascade falls in from the left bank of the river. From this point the road follows the windings of the stream up to Markhu, about seven miles from Sissagarhi. The river has to be crossed at least a dozen times, and its banks are formed of steep bare rock, in places narrowing to a gorge with perpendicular walls.

Markhu is a small village, situated at the base of the Ek Danta hill, where the Chitlang stream, flowing along the eastern side of the hill, falls into the Markhu river. The latter river, which above the village of Markhu flows along the western side of Ek Danta, is of fair size, and has a wide shingly bed. About a mile above the village it has very large boulders along its banks as well as in its bed.

On leaving Markhu, we at once ascend Ek Danta hill, here a bare undulating plateau interposed between the Chitlang Valley and the Markhu glen. It is the end of a spur, which runs out from the Chandragiri Ridge, and bounds the Chitlang

Valley on the north-west. There are two roads over Ek Danta; one, to the left, runs across the highest part of the hill; the other, to the right, follows the gorge of the Chitlang stream, and is a very narrow path, cut in the steep brow of the hill, some hundreds of feet immediately above the river. The side of the gorge, opposite to the road, is also very steep, and is well clothed with vegetation, while the Ek Danta side is comparatively bare; at one point the stream falls in a fine cascade.

Having cleared the Ek Danta hill we enter a long valley which runs down from the Chandragiri Ridge between two low spurs; the sides of the valley are undulating and grassy, the hill-slope having a northern exposure being pretty thickly grown with bush jungle. This is the valley of Chitlang; from its highest part at the south base of Chandragiri, a small stream runs down from that mountain along the centre of the valley, which curves gradually southwards. Chitlang is higher than the Nepal Valley, and is well cultivated; it is only at the head of the valley, where the Chandragiri Ridge blocks it to the north, that the hills are well wooded.

From Chitlang there is an easy ascent to the Pass over the Chandragiri Ridge; and through an opening of the forest which covers the crest of this ridge, we obtain a fine view of the valley of Nepal which lies immediately below.

As seen from Chandragiri the valley appears to be a level plain, irregularly oval in shape, and completely girt round with mountains; and if our view be obtained about the middle of July say, the plain is covered with a brilliant green carpeting of rice fields.

The populousness of this plain in the heart of the mountains is at once attested by the great number of red brick houses dotted over its surface: besides the three cities of Kathmandu (with its finely-shaped white monument, which forms a striking, but not an appropriate, feature in the landscape), Patan, and Bhatgaon, there are villages, temples, and homesteads innumerable. The Nepal Valley has been aptly termed a miniature of Kashmir; for the purpose of our present bird's-eye view its small size is all in its favour, for we are enabled to take in all the details of a complete picture; and the scene from the top of Chandragiri is superior to the hazy view obtained of the Kashmir Valley from the Banihal or Baramulla hills.

The descent from Chandragiri to the valley is very steep and rough, the path in parts running down the rock-strewn bed of an old torrent. The whole slope is densely covered with most luxuriant forest. At the base of the ridge stands the village of Thankot, on a long gently sloping alluvial fan. The distance from Marhhu to Thankot is about nine miles by road. From

Thankot there is a good driving road along the valley for seven miles to Kathmandu. About a mile north of the city we enter the Residency grounds, and here we will rest after our travels and make a brief survey of the Nepal Valley.

The Valley of Nepal has been compared in shape to an oval and to a lozenge; but it is very irregular in form, as the hills which surround it send down short spurs into its open part in various directions, so that it may be described as consisting of a long central part lying nearly east and west, with many lateral off-shoots from this, which run up to the base of the limiting hills between the spurs above-mentioned. Its greatest length is about twenty miles, and its greatest breadth, from south to north, about fifteen miles; but, owing to its peculiar shape, the total area of tolerably level ground found in the valley is probably under 200 square miles. Although by the road we traversed, Kathmandu is over ninety miles from Segowli, yet the valley is distant not more than thirty miles from the plains in a direct line. The position of Kathmandu is given as in Lat. 27° 42′ N., and Long. 85° 36′ E. Its elevation above the sea is about 4,500 feet.

The prominent peaks of the hills round the valley are Devikot, or Mahadeo Pokhri to the east, Sheopuri and Kakani on the northern side, Nagarjun on the north-west, Chandragiri, Champa Devi, and Pharphing on the west and south-west, and Phulchank on the south-east. The highest of these is Phulchank, 9,720 feet, and the others vary from about 6,000 to a little over 7,500 feet.

The Nepal Valley is well watered, but all its streams are of small size, as their watershed is strictly confined to the hills immediately surrounding the valley. Many of the streams are small mountain torrents, often dried up in the hot weather, which flow down regular alluvial fans, in the jaws of the small ravines or hollows of the hill sides. The two principal streams are the Bagmati and the Bishnumati. The Bishnumati rises from the south side of Sheopuri, and flowing southwards passes along the west face of Kathmandu and joins the Bagmati a little south of the city. The stream is always shallow, and its channel, though tolerably wide, is for the most part hardly lower than the adjoining cultivated land.

The Bagmati has its origin on the northern side of the Sheopuri Peak. At the north base of Sheopuri it winds to the east, and then flowing southwards through a gorge in the hills, it enters the valley at about the middle of its northern side. The general direction of the Bagmati through the valley is to the south, and after passing through a narrow rocky cleft at Pashpatinath it receives the waters of numerous small streams,

and runs along the south side of Kathmandu, between that city and Patan, to the point where the Bishnumati joins it. Opposite Kathmandu the stream has a very wide channel, but even during the rains it can there be waded knee-deep. South of Kathmandu, the Bagmati, having increased to a respectable stream, flows to the south-west, and at Choubal passes by a narrow rocky gorge through the point of the Kirtipur Ridge —a spur which runs down from Chandragiri. Beyond Choubal the stream is confined by high banks, and at the south-west corner of the valley it makes its exit through a rocky gorge carrying the whole drainage of the Nepal Valley.

The surface of the valley is by no means level, and all over the country we find flat uplands, called *Tār*, which are separated in various directions by broad flat valleys, of which the local name is *Khola*. The sides of the Tars are often precipitous, but are commonly artificially terraced for cultivation; the difference in elevation between the uplands and hollows varies from about 30 to 100 feet.

Through every *khola* there flows a small stream, but perhaps the greater number of these are dried up in the hot weather. Beds of an impure peat frequently form a part of the *Tars*, and a layer of fine bluish-grey clay occurs extensively in them. This stiff clay, being almost impermeable to water, it results that, during the rains, the water absorbed by the surface of the uplands sinks as far as the clay stratum, and there, at the side of the *Tar*, trickles out and runs down to the *khola* below. After heavy rain the water pours out of the *Tar* cliffs, in some parts, in small spouts; and generally speaking, the sides of the *Tars* are very damp, and small swampy spots are not unfrequent at their base, here and there, throughout the valley.

Scattered over the central part of the valley are a number of small eminences thickly covered with tree forest. These wooded knolls are often formed of isolated masses of rock cropping up through the alluvial deposits; but in other cases they are simply small isolated *Tars* covered with trees. Of these little hills there are about a dozen principal ones, hereafter often alluded to as the "Central Woods"; on the summit of nearly every one of them there is a temple. The Residency ground, on an upland, with a fine belt of *Pinus longifolia* and other trees, is included in the "Central Woods"; of the others it will suffice to enumerate Simbunath, Rani Jangal, Pashpati, Nil Barahi, Sanku, and Champagaon.

The native history of Nepal records that the valley was once a lake; and every European writer on the country, from Father Giuseppe to Dr. Wright, has more or less confidently

asserted that this must have been the case; one author, indeed, has speculated on the probable appearance of the valley when it was covered by a lake, with the knolls of Simbunath and Pashpati peeping as small islands above the surface of the waters. But Mr. Medlicott, the only authority on such matters who has written on the Geology of Nepal, is by no means satisfied that the deposits in the valley are really lacustrine. In his very interesting "Note on the Geology of Nepal," published in the records of the Geological Survey of India, No. 4 of 1875, Mr. Medlicott arrives at the conclusion that the valley is a true rock basin, but that, while the deposits which it contains are on the whole analogous to the *Karewahs* of Kashmir (which, I apprehend, are admittedly lacustrine), there is not sufficient evidence to settle the question of their alluvial or lacustrine origin. He points out that the beds of peat and the layers of blue-grey clay, before mentioned, rather point to an alluvial formation; and justly remarks that there is now no lake in the valley, however small, to suggest a once more extensive one. Although there is no sort of lake in the place, there are a few artificial tanks in the valley, none of which, however, are of any considerable size.

The climate of the valley is, on the whole, very fine. The highest temperature in the shade is probably not over 90°, and the minimum, under like conditions, not lower than 25°. The average mean temperature is said to be about 60°; and the average annual rainfall is about 58 inches.

Owing to the manner in which the valley is sheltered by its belt of hills, storms of wind are not at all frequent; but they occasionally occur, and do some damage by uprooting large trees, &c. The prevailing winds are from the west and north-west during the winter and hot weather, and from the south-east during the rains. Thunderstorms, accompanied by hail, are rather common at certain seasons; and lightning often does damage to buildings and causes some loss of life.

The hot weather lasts from the middle of April to the middle of June; the maximum temperature in the shade being in April about 84°, in May 90° and in June 85°. During this season the heat is not oppressive, gentle westerly winds usually prevail, and punkahs are never required.

The rainy season sets in about the middle of June and lasts until the first week of October. The rains are usually ushered in with a few sharp thunderstorms, and during their prevalence the usual winds which blow are from the south-east; the greatest rainfall occurs in August.

In July, August and September the highest temperature reached in the shade is about 87°, 86° and 84° respectively;

throughout this period the weather in the valley is less pleasant than during any other portion of the year: for nearly the whole surface of the valley is then covered with wet rice fields, and this condition, combined with the comparatively high temperature during the rains, renders the air very damp and steamy.

From the middle of October to the end of March the weather is delightful; in December, January and February hoar frost is common, and small pools of water have their surface frozen during the night. In January the highest temperature in the shade is not more than 60°, and the minimum temperature is often as low as 25°. Snow very rarely falls in the central part of the valley, but the hills surrounding it are, now and then, covered in parts with snow. From February to the end of April there are a few occasional showers of rain; bxt these are, as a rule, slight in amount.

The valley is very fertile, and, with the exception of the small area occupied by the central woods, every part of its surface is cultivated. Owing to the denseness of its population, which is certainly not less than 400,000, only food-stuffs are allowed to be grown in the valley; the land is covered with crops of one sort or another throughout the year nearly, and in almost every field there is a cottage. In the low marshy lands near the streams transplanted rice is grown; the rice is sown in May, transplanted when the rainy season begins, about the middle of June, and is cut from the end of October to the middle of November. Land not so easily flooded as the above bears wheat in the cold season, *gyah* or upland rice in the spring, followed by some kind of pulse. In the well-irrigated uplands the wheat crop is followed by mustard, buckwheat or field vegetables, and these again by transplanted rice. In the dry lands the wheat is succeeded by Indian corn. The *gyah* or upland rice is sown about the latter half of April and the Indian corn in May; both are cut at the beginning of September. Potatoes are planted in January and February, and dug in May and June.

All round the valley, at the foot of the hills, the feature is sloping grassy ground, higher than the central part, with small rounded spurs running down from the main hills. In this part of the valley small streams and springs are of constant occurrence, and patches of scrub jungle and of small tree forest abound. Of places at the foot of the hills where birds were often collected, the following may be mentioned: Thankot at the base of Chandragiri; Hatti jangal, further to the southward; Godaveri immediately below Phulchank; Sanga, at the south-east corner of the valley; Nilkant, below the Sheopuri Peak; and Balaji, under Nagarjun.

Of the hills which encircle the valley the lower ones have their summits formed of rounded grassy knolls, with a good deal of bush jungle in the small nullahs which intervene between these: such is the character of Jahar Powah and Kakani Powah. The higher hills, Chandragiri, Sheopuri, Phulchank are covered with a noble garniture of trees. These forests are most rich in bird life, and to any ornithologist who may visit the Nepal Valley I especially recommend Sheopuri. There, camped in a grassy glade on the crest of the hill, he may wander through the grand forest day after day, to find the huge gnarled trees with their branches covered with mosses, ferns and orchids, the dense undergrowth of bushes, and the splendid rhododendrons giving shelter to birds in wonderful profusion of species and individuals.

Immediately beyond the hills of the Nepal Valley, on the east and south-east, are two fertile and well-cultivated valleys, Banépa and Panouti, whose streams fall into the Kosi; and on the western side are the deep Dhuni and Kolpu Valleys, much lower and hotter than Kathmandu. Nawakot, which lies north-west of the valley, merits more detailed description.

Before quitting the Nepal Valley I must not omit to mention the fine sight which is obtained from it during the greater portion of the cold weather. I refer to the view of the snows. Probably none of our Himalayan stations can furnish such an extensive and magnificent prospect of the snowy range as is to be seen from the neighbourhood of Kathmandu. On a clear day, and especially from the crests of the surrounding hills, an uninterrupted view of the snow-clad chain can be seen over some 120 degrees of the horizon, including Doulagiri, Gosain Than, Mount Everest and Kinchinjunga. From the Residency grounds even, during the clear weather of the winter months, the sunset effects on the snows present a picture never to be forgotten: the bright golden glow of the peaks gradually shading into the most delicate rose colour; then a cold grey for a minute or two, which gives way to an after-glow tinge of the most delicate pink; and as this again fades away, the mighty walls of snow settle into a pale grey shade cruelly suggestive of the most extreme cold.

In position, as well as in elevation, the Nepal Valley forms a characteristic portion of Mr. Hodgson's "Central Region," which he defined as a tract of country equidistant from the plains and the snows, and having an elevation of from 4,000 to 10,000 feet. We have now to visit a part of Nepal (the Nawakot district) which, although further north and nearer to the snows than the Great Valley, is so much lower and hotter than the latter, that it must be considered to belong to the lower

region—a view quite confirmed by its vegetation and avifauna.

Nawakot is the name of a small town and district, about twenty-two miles by road and sixteen miles in a direct line, north-west of Kathmandu on the main road from the valley of Nepal to Gorkha. The road to Nawakot starts from the north-west corner of the Great Valley and passes across the Kakani hill. The path lies at first over very rough ground, and, constantly rising and sinking, runs along the side of the hill, which is in this part quite bare of trees. From the pass on the crest of the hill a fine view is obtained of the snows; immediately below at the northern base of the Kakani Ridge flows the Sindhuria river, and further out the Likhu and Sadi rivers in their straths, the streams all running in a general westerly direction.

From the crest of the hill there is a steady descent to Chutrali Powah, which is about twelve or thirteen miles from Kathmandu. Here the fact that we have reached a much lower level than the Nepal Valley is made evident by the considerably higher temperature of the air, and by the appearance of trees, such as the Banian, not found in the great valley. From Chutrali Powah one gets a most picturesque view of the Nawakot district, which may be called roughly triangular in shape. The base of the triangle is formed by a lofty range of hills to the north, whose lower slopes are principally covered with a forest of *Pinus longifolia*. The western side of the district is limited by the Trisul Ganga flowing down from the northern hill-barrier to a little west of south; to the right the district is bounded on the east by the ends of the spurs which separate the Tadi, Likhu and Sindhuria rivers; while on the southern side is the Kakani or Burmandi Ridge which separates Nawakot from the Nepal Valley. The apex of the triangle is at Devighat, on the south-west, where the Tadi river falls into the Trisul Ganga. From Dhaibung or Jibjibia, the most prominent peak of the hills to the north of Nawakot, a spur runs down in a south-westerly direction between the Trisul Ganga and Tadi rivers. The town of Nawakot is situated on the crest of this spur at the northern extremity of the district, and its lofty red brick Durbar is conspicuous from Chutrali Powah. The Nawakot spur has its soil of a marked red colour, and nearly the whole of its slope towards the Tadi river is covered with a forest of Sâl trees.

From Chutrali Powah there is a steep descent to the bed of the Sindhuria stream, the path being bordered on each side by the most luxuriant vegetation. From the base of the Burmandi hill the road lies along the glen of the Sindhuria to the junction of that stream with the Tadi. About four miles above

this point the Tadi receives the waters of the Likhu stream, and four miles lower down the Tadi itself joins the Trisul Ganga.

The vales of the Sindhuria, Likhu and Tadi vary in width from about 300 yards to half a mile. They are locally known by the name of *Biasi*, and are swampy rice beds only a few feet above the level of the streams, the latter being very shallow in winter. These portions of the Nawakot district are fully 2,200 feet lower than Kathmandu, and are highly malarious during the hot weather and rains.

The spur on which Nawakot stands gradually decreases in height south of the town, and about a mile and a half below Nawakot it spreads into a level plain which occupies nearly the whole space between the Tadi and Trisul Ganga, as far as the junction of these rivers at Davighat. At the point where Nawakot town is built the spur is from 800 to 1,000 feet above the level of the Trisul Ganga, and its tip at Devighat is less than 100 feet above the river. The surface of this tract is covered with trees and fine orchards.

Lying between the western slope of the Nawakot spur and the Trisul Ganga, from Davighat to below the town, is a tract of land considerably elevated above the river, and analogous to the *Tars* of the Nepal Valley. All along this upland for five miles from Devighat to a point below Nawakot town, as well as on the level part of the Nawakot spur, are fine mangoe orchards, banian trees, simals, plantains, pine-apples and guavas, all unknown in the great valley ; while the slope of the spur is covered with Sâl trees (also foreign to the Nepal Valley) which are here reduced to mere bushes by constant defoliation, the leaves being regularly carried to Kathmandu to be used as plates.

The town of Nawakot is built in a hollow on the crest of the spur before mentioned, and is well sheltered by trees. The ridge is steep on both sides of the town, and the latter cannot be seen from below either from the Trisul Ganga or the Tadi side. The slope towards the Tadi, where the trees are not injured, is covered with a fine Sâl forest.

The Trisul Ganga is a great river, quite unlike any of the streams we have hitherto met in Nepal. It is spanned about four miles from the town of Nawakot by a *Sanga* or suspension bridge, which is most jealously guarded. No European is allowed to cross this bridge which here marks the most northerly point to which the curious obstructiveness of the Nepalese officials restricts the travels of all Englishmen.

II.

The following list of three hundred species of birds is founded on a collection of nearly two thousand specimens which I made

in Nepal. Mr. Hume very kindly allowed me to compare my collection in his museum, and the result of this comparison will be found noted with reference to many of the species enumerated ; but I am alone responsible for the identifications and for the views put forward in this paper.

1.—Vultur monachus, *Lin.*

This Vulture is seldom seen in the valley of Nepal, and is decidedly the least common of the six species of Vultures which occur there. It was only identified with certainty on one occasion, when it was seen feeding on the carcase of an elephant at Thankot, in December, in company with *calvus, fulvescens* and *bengalensis.*

2.—Otogyps calvus, *Scop.*

1. Length, 31·5; expanse, 87·5; wing, 23·0; tail, 10·5; tarsus, 4·0; bill from gape, 2·9; bill from anterior margin of cere, straight, 1·93; length of cere, 1·1; depth of closed bill at cere, 1·3; width of bill at gape, 2·0; mid-toe, 3·6; its claw, straight, 1·0; weight, 11lbs.

Upper mandible and tip of lower greenish dusky; base of lower mandible dusky greyish horny; cere, gape, orbital skin and skin at base of lower mandible pale yellowish fleshy; head, neck, and lappets fleshy, with a slight tinge of greenish about the throat and crop—the lappets 3·0 in length and 1·2 at broadest part; bare thigh patch fleshy; feet reddish fleshy; claws horny black.

2. *Male.*—Length, 32·5; expanse, 88·0; wing, 23·6; tail, 11·3; tarsus, 4·1; bill from gape, 2·9; bill from cere, 1·9; length of cere, 1·05; depth of closed bill at cere, 1·36; width at gape, 2·15; mid-toe, 3·7; its claw, straight, 1·05; closed wings short of tail, 2·5; weight, 9lbs. 5·5ozs.

In this specimen the long scapulars vary in color from ashy grey to whitish, and have blackish brown tips. This condition possibly indicates a tendency to albinism.

This species is common in the valley, and a permanent resident; next to *Pseudogyps bengalensis* it is the Vulture most abundant there. It is tolerably common in winter in the Markhu Valley, the Sâl forest, the Tarai and adjoining plains, being the only Vulture then noticed in those parts. In the valley the bird is usually seen along the banks of the rivers, especially near the burning ghats, and it can always be distinguished from other species of Vulture by its richly-colored head and feet, and by the snowy-white patch on the breast. It is generally found single or in pairs, and is apparently much more bold and courageous than the Vultures; and is, for its

size, very powerful, being able to rise straight from the ground by a few strokes of the wing.

3 *bis*.—Gyps fulvescens, *Hume*.

Female.—Length, 42·0; expanse, 105·0; wing, 28·0; tail, 13·6; tarsus, 4·3; bill from gape, 3·0; bill from cere, 2·04; length of cere, 1·14; depth of bill at cere, 1·3; width at gape, 1·65; gonys, 1·25; mid-toe, 4·4; its claw, straight, 1·25; closed wings short of tail, 3·3; weight, 15lbs.

Bill dusky; irides dark brown; feet blackish; claws black.

A fine specimen, darker and much more richly coloured than the type of *fulvescens*. Head and neck well clothed with down; ruff of long pointed feathers pale rufous brown, centred whitish; above a rather pale brown; the rump brownish rufous, and all the feathers pale centred; greater coverts, secondaries, and tertiaries dusky, the first bronzed and lighter on the outer webs; primaries and tail feathers brownish black; beneath a paler and more rufous brown than the upper parts; all the feathers very narrowly centred with white; crop closely covered with shining wood-brown feathers; third primary longest.

This fine Vulture was found in the valley in about the same numbers as *G. himalayensis*, and, like the latter, was only noticed during the winter months. The only specimen seen was shot in the Residency grounds in November; this bird was singularly clean and free from the usual vulturine odour.

3 *ter*.—Gyps himalayensis, *Hume*.

Length, 45·7; expanse, 109·5; wing, 30·0; tail, 16·0; tarsus, 4·25; bill from gape, 3·1; bill from anterior margin of cere, straight, 2·05; width at gape, 1·70; length of cere, 1·1; depth at cere, 1·3; mid-toe, 4·3; its claw, straight, 1·25; wings short of tail, 3·4; weight, 18lbs. 7·5ozs.

A young bird, above rich deep brown; all the feathers very broadly tipped with pale yellowish; no white patch on the back; upper coverts nearly all pale fulvous; below the feathers lighter brown than the back, and all very broadly centred with fulvous white; fourth primary quill longest.

Bill pale greenish horny, brownish in front of nostrils, and the margin of the upper mandible dusky from festoon to tip; cheeks and chin pale brownish grey; round the lower half of the eye bluish or purplish; skin of neck, where exposed, pale sea green; irides fine hazel brown; cere dusky; feet greenish grey; claws pale greyish horny to pale horny brown.

This huge Vulture is found in small numbers in the valley of Nepal, but in winter only. The specimen noted above was

shot flying with a loose charge of B. B., near the Residency grounds in February.

4 *ter*.—Gyps tenuirostris, *Hodgs.*

Length, 38·5; expanse, 89·5; wing, 23·4; tail, 10·7; tarsus, 3·9; bill from gape, 2·85; bill from anterior margin of cere, straight, 1·78; length of cere, 1·1; depth of closed bill at cere, 1·03; width at gape, 1·35; closed wings short of tail, 2·5; mid-toe, 4·0; its claw, straight, 1·2; weight, 12lbs 7ozs.

Culmen yellowish grey horny; rest of bill dusky brownish horny; cere horny black; irides deep brown; skin of head and neck dark muddy; scales of tarsi and toes black; the interspaces dusky; claws horny black; head narrow, neck long and slender, both very bare; ruff of entire pointed feathers earthy brown, paling at the tips; whole mantle with the feathers conspicuously pale centred.

I have carefully compared this specimen with examples of *G. indicus* from Bengal and with *S. pallescens* of Hume, and I entertain no doubt that my bird is quite distinct from both. *Gyps tenuirostris* is darker than *pallescens*, and of much the same colour as specimens of *indicus* from the 24-Pergunnahs; but it is distinguishable at a glance from both these forms by its much more slender and less powerful bill. As to the distinctness of *indicus* from *pallescens*, I thought from an examination of some specimens in Mr. Hume's collection, that the latter was merely a paler western form, and not entitled to specific rank. The Bengal bird, however, has the neck more bare, and Mr. Hume has pointed out other differences in STRAY FEATHERS, Vol. VII, p. 166.

The Himalayan Thin-billed Vulture is tolerably common in the valley, and often associates with *Pseudogyps bengalensis*. I shot the specimen above described in the Residency grounds in October; the bird was perched high up on a Eucalyptus tree, on a branch that bent and swayed under its weight.

5.—Pseudogyps bengalensis, *Gm.*

Two males.—Length, 32·5 to 33·0; expanse, 83 to 84; wing, 22·2 to 22·4; tail, 9·2 to 9·3; tarsus, 3·6 to 3·8; bill from gape, 2·6 to 2·75; bill from anterior margin of cere, straight, 1·88 to 1·9; depth of closed bill at cere, 1·2 to 1·3; width at gape, 1·5 to 1·55; length of cere, 0·84 to 0·85; mid-toe, 3·92 to 3·95; its claw, straight, 1·0; wings short of tail, 1·0 to 2·3; weight, 9lbs. 8ozs. to 11lbs.

Three females.—Length, 33·5 to 36·8; expanse, 85 to 87; wing, 22·8 to 23·3; tail, 10 to 10·5; tarsus, 3·9 to 4·0; bill from gape 2·6 to 2·7; from anterior margin of cere, 1·8 to 1·9;

depth of closed bill at cere, 1·16 to 1·2; width at gape, 1·4 to 1·5; cere, 0·85; mid-toe, 4·0 to 4·2; its claw straight, 0·95 to 1·2; weight, 11lbs. to 11lbs. 5ozs.

In young birds the bill is horny black; cere shining black; irides dark brown; skin of head and neck leaden greenish; cheeks livid; feet dull black; claws horny black.

An adult male in breeding plumage, shot on the 18th November, was quite a handsome bird. The general colour black; back, rump, and under wing-coverts white; ruff of decomposed feathers pale tawny; under surface of body blackish brown, the feathers with pale fulvous shafts; crop patch pure velvety black. Immature birds, which are far more commonly seen than adults, are entirely without the white back, rump, and under wing-coverts; the general colour above is dark brown, the back being rather paler and with fulvous shafts to the feathers; the crop patch warm brown; beneath a paler and more rufous brown than the upper parts; the feathers narrowly centred with pale fulvous or with whitish.

The Indian White-backed Vulture is exceedingly common in the valley of Nepal, where it breeds and lives throughout the year. It is also fairly common in the Nawakot district in winter, being the only species of Vulture noticed there at that season. If we arrange the Vultures of the valley according to their numerical strength, the species will stand in the following order, the present bird being by far the most common, while *monachus* is the rarest:—*bengalensis, calvus, tenuirostris, fulvescens, himalayensis, monachus*. The Common Vulture is usually seen near the banks of the Bagmati and Bishnumati rivers, especially in the neighbourhood of the burning ghats, and generally wherever a dead animal is to be found. It is tame and sluggish, and may often be seen tearing at a carcase in company with dogs and crows, the latter (*Corvus splendens*) sometimes standing on the Vulture's back. This Vulture can run with the greatest ease, and can simulate death most perfectly, as the following instance will show:—I once shot one of these birds off a pine tree, breaking one of its wings, but not otherwise injuring it. It fell to the ground, and when I got near it, it was lying so perfectly still that I thought it was dead. I turned it over with my foot and walked away, intending to send a servant to pick it up afterwards. No sooner had I got about twenty yards from the bird then it started up and ran away quickly among the trees. The servant who was sent to look for it brought it into my garden, holding it by the feet, and threw it on the ground saying that it was quite dead. I walked away a little distance and watched; presently the Vulture stood up and began to peer about cautiously. On my

advancing to it, and striking it with the butt of my gun, it fell down, gave a few convulsive twitches as if in its death throes, and then remained perfectly still. This time I thought there could be no doubt that the bird was really dead, so I left it and walked away to another part of the garden. In a few minutes my servant called out to me that the Vulture had run off. It had indeed got away very cleverly, and it made such good use of its legs that I had some difficulty in overtaking it and giving it a finishing shot.

On the 18th November, while walking through the Pashpati wood, I was startled by hearing a loud and prolonged hoarse roar. On going on a little further the sound was found to proceed from a pair of *P. bengalensis* consummating their nuptials on a large horizontal branch of a tree, some thirty feet above the ground. The cry was very remarkable, and more like what some large carnivorous mammal might be expected to utter than any bird.

7.—Gypaetus barbatus, *Lin.*

The Bearded Vulture was only observed on one occasion, in winter, sailing over the hills which bound the valley of Nepal to the north.

8.—Falco peregrinus, *Gm.*

Female.—Length, 19·3 ; expanse, 44·75 ; wing, 13·8 ; tail, 8·2 ; tarsus, 2·2 ; bill from gape, 1·35 ; bill from anterior margin of cere, straight, 1·0 ; length of cere, 0·35 ; mid toe, 2·3 ; its claw, straight, 0·9 ; closed wings short of tail, 1·3; weight, 2lbs. 0·5 oz. ; depth of closed bill at cere, 0·7 ; hind claw, straight, 0·97.

Bill blue horny, paler at base ; cere and orbits light yellow ; irides dark brown ; feet bright lemon yellow ; claws bluish black.

An adult bird, above bluish grey, barred with blackish ; the head blackish slaty ; a broad black cheek stripe not confluent with the cap ; chin, throat, and upper breast unspotted white ; the feathers of the lower breast with faint dark central streaks ; rest of lower surface with black cross bars, the belly being overlaid with a pale salmon tint.

I shot the specimen above noted in the valley of Nepal on the 18th November. Only a few pairs of the Peregrine were noticed in the valley in winter, about the skirts of woods and near the ponds and small streams frequented by Water-fowl. The bird was also observed in the Tarai in December.

11.—Falco jugger, *G. R. Gray.*

Female.—Length, 19·4 ; expanse, 44·0 ; wing, 14·4 ; tail, 9·3 ; tarsus, 1·9 ; tarsus feathered in front, 0·7 ; bill from gape, 1·2 ; bill from anterior margin of cere, straight, 0·8 ; length of cere, 0·25 ; mid-toe, 1·9 ; closed wings short of tail, 2·0 ; weight, 1lb. 5 ozs.

Bill blue at base, dark horny blue at tip ; cere, gape, and orbital skin pale plumbeous grey ; irides rich brown ; feet pale bluish grey ; claws horny black.

This fine young Laggar was shot in my garden (Valley) in January. The Falcon had perched in a pine tree, and the first notice of its arrival was given by the vociferous cawing of a crowd of Crows (*C. splendens*) surrounding the tree. When picked up the Laggar was found to have a freshly-killed Maina (*Acridotheres tristis*) firmly clutched in its claws. To the best of my belief this was the only occasion on which I met with this Falcon in Nepal, and I imagine that it is not common in the valley.

16.—Falco chiquera, *Daud.*

Three males.—Length, 11·6 to 12·5 ; expanse, 24·7 to 25·2 ; wing, 7·9 to 8·1 ; tail, 5·7 to 5·9 ; tarsus, 1·32 to 1·5 ; bill from gape, 0·8 to 0·85 ; bill at front, 0·73 to 0·75 ; closed wings short of tail, 1·6 to 1·9.

Three females.—Length, 13·8 to 13·9 ; expanse, 28·3 to 28·8 ; wing, 8·9 to 9·2 ; tail, 6·6 to 6·8 ; tarsus, 1·5 to 1·6 ; tarsus feathered in front, 0·4 to 0·5 ; bill from gape, 0·9 to 0·95 ; bill at front, 0·78 to 0·8 ; length of cere, 0·22 to 0·25 ; weight, 9 ozs.

Bill bluish black at tip, greenish yellow at base ; cere, gape, and orbital skin bright, slightly greenish yellow ; iris brown, dark in young birds, lightish in adults ; feet rich yellow ; claws black.

This pretty Falcon is very common in the valley of Nepal, where it lives throughout the year, and breeds. It is usually found about groves and gardens, or large solitary pipal trees, nearly always in couples, and sometimes three or four birds together. Its chief prey in the valley seems to be *Passer montanus.* The Turamti breeds in Nepal from January to March. In the Residency grounds it usually selects the top of a pine tree (*P. longifolia*) as the site of its nest, and the nest is nearly always so well concealed as to be quite invisible from below. The Falcon seems to be very irascible at all seasons, but while breeding, its peculiar shrill querulous scream may be heard at all hours of the day as it sallies from the tree on which its nest is placed to drive away all crows or kites that dare to approach too near to its home.

17.—Cerchneis tinnunculus, *Lin.*

Three males.—Length, 13 to 13·8 ; expanse, 28 to 30·2 ; wing, 9·4 to 10 ; tail, 6·9 to 6·95 ; tarsus, 1·5 ; tarsus feathered in front, 0·6 to 0·75 ; bill from gape, 0·8 ; bill from anterior margin of cere, straight, 0·56 to 0·6 ; length of cere, 0·2 to 0·26 ; closed wings short of tail, 0·75 to 1·4 ; weight, 5·5 to 5·75 ozs.

Female.—Length, 13·6 ; expanse, 31·0 ; wing, 10·15 ; tail, 6·85 ; tarsus, 1·4 ; tarsus feathered in front, 0·6 ; bill from gape, 0·85 ; bill from anterior margin of cere, 0·56 ; length of cere, 0·2 ; closed wings short of tail, 0·8 ; weight, 6ozs.

Bill bluish grey, black at tip, and the base of lower mandible, greenish yellow ; cere, gape and orbital skin greenish yellow ; irides dark brown ; feet deep yellow ; claws black.

The Kestrel is a seasonal visitant to the valley, arriving in considerable numbers about October. It is common throughout the winter in the great valley, the Nawakot district, the Chitlang and Markhu Valleys, and in the Tarai and plains of Nepal ; but it seems to avoid the Sâl forest. Nearly all the birds observed were immature, and one of the specimens secured was noticeable for its rich coloration, the black markings on the upper surface being very prominent and extensive.

21.—Astur palumbarius, *Lin.*

The Goshawk appears to be only a rare straggler to the valley in winter. It is said to be more common in the hills further north, and trained birds are often seen in Nepal.

23.—Astur badius, *Gm.*

The Shikra, though very common as a trained bird in the valley, does not seem to occur there in the wild state in any considerable numbers. It was noticed only on a few occasions in the valley, and once in the Nawakot district in November.

27.—Aquila nipalensis, *Hodgs.*

This Eagle was noticed only once in the valley of Nepal during a period of two years ; the bird was not secured, but it was unquestionably *Aquila nipalensis* of Hodgson. It is, I should say, a rare visitant to the valley. Mr. Hodgson, however, describes his *A. nipalensis* in "Asiatic Researches," XVIII, Part II, pp. 13-16, and says : "It is often seen in the

great valley of Nepal, and the sole specimen I have been able to secure was obtained there."

33.—Nisaëtus fasciatus, *Vieill.*

Female.—Length, 29·5 ; expanse, 68·0 ; wing, 21·05 ; tail, 13·0 ; tarsus, 3·9 ; bill from gape, 2·18 ; bill at front, 1·95 ; length of cere, 0·8 ; closed wings short of tail, 2·9 ; weight, 5lbs. 9ozs.

Bill bluish grey, horny black at tip ; cere and gape rich yellow ; feet Indian yellow ; claws horny black ; irides rich yellowish brown. A young bird but fully grown, above dark brown, without any white on the head ; underneath pale rufous ; the feathers with narrow central dark stripes most pronounced on the throat, on the abdomen the feathers with dark shafts only.

Bonelli's Eagle is not very common in the valley. The only specimen preserved was shot in the Residency grounds in January.

39.—Spilornis cheela, *Lath.*

Male.—Length, 28·6 ; expanse, 64 ; wing, 19·2 ; tail, 13·1 ; tarsus, 4·2 ; bill from gape, 2·0 ; bill at front, 1·83 ; length of cere, 0·42 ; closed wings short of tail, 2·5 ; weight, 4lbs.

Bill pale leaden ; tip and anterior half of culmen bluish black ; cere, gape and orbital skin bright lemon yellow ; iris bright golden yellow ; tarsi sullied yellowish ; toes deep yellow ; claws black.

The Crested Serpent Eagle is tolerably common about the valley of Nepal at all seasons. It was also noticed in the lower hills, near Sisagarhi, in winter. It chiefly affects the neighbourhood of woods and forests, and is as often seen in the valley itself as on the crests of the hills which encircle it. The bird seems to feed chiefly on large insects, frogs, and snakes (*Tropidonotus stolatus*) ; but its habits and loud plaintive cry are well known.

42.—Haliaëtus leucoryphus, *Pall.*

Female.—Length, 33·0 ; expanse, 86 ; wing, 24·7 ; tail, 13·4 ; tarsus, 4·3 ; tarsus feathered in front, 2·3 ; bill from gape, 2·73 ; bill at front, 2·37 ; depth of closed bill at margin of cere, 1·1 ; length of cere, 0·7 ; closed wings short of tail, 1·5 ; weight, 7lbs. 13ozs.

Upper mandible dingy greenish horny, dusky at tip ; lower mandible bluish horny ; cere and gape bluish ; irides clear brownish yellow ; feet greyish white ; claws black.

The Ring-tailed Fishing Eagle is not common in the valley, but a few examples may generally be seen there, except during the winter months. The bird is usually found along the course of the rivers, or perched on the branch of a tree near marshy ground. It does not appear to breed in the valley.

45.—Buteo ferox, *Gm.*

Male.—Length, 22·0 ; expanse, 53·5 ; wing, 16·4 ; tail, 9·5 ; tarsus, 3·2 ; tarsus feathered in front, 1·8 ; bill from gape, 1·75 ; bill from anterior margin of cere, straight, 0·93 ; depth of closed bill at cere, 0·62 ; length of cere, 0·6 ; closed wings short of tail, 1·0 ; weight, 2lbs. 4·5ozs.

Bill bluish grey, bluish black at tip ; cere greenish yellow ; gape orange yellow ; iris pure hazel brown ; feet dull deep yellow ; claws horny black. A youngish bird, cream coloured on the underparts, with the exception of the thighs and legs, which are rufous brown ; there is some of this rufous colour also on the flanks.

This Buzzard is tolerably common in the valley of Nepal during the winter, and in the Tarai and plains at the same season. It is generally seen seated on the edge of a mud cliff or on some low tree, and frequently hunting over wet fields and along small streams. Its flight is very characteristic : four or five rather slow flaps of the wings, then a short sail with the wings rigid and outstretched, and so on.

47.—Buteo plumipes, *Hodgs.*

Female.—Length, 21·2 ; expanse, 50·5 ; wing, 16·35 ; tail, 9·7 ; tarsus, 2·75 ; tarsus feathered in front, 1·8 ; bill from gape, 1·53 ; bill from anterior margin of cere, 0·92 ; depth of closed bill at cere, 0·62 ; length of cere, 0·48 ; closed wings short of tail, 1·4 ; mid-toe, 1·65 ; its claw, straight, 0·73 ; inner toe, 1·06 ; its claw, 0·9 ; hind toe, 0·88 ; its claw, 0·95 ; weight, 2lbs.

Bill dark blue, paler bluish grey near nostrils and at base of lower mandible ; cere and gape dull greenish yellow ; irides hazel brown ; feet ochre yellow ; claws black. An adult female, above dark brown ; the feathers margined with rufous ; whole throat and the breast rich rufous ; upper portion of abdomen, flanks, thighs, and tibial plumes (the latter long and ample, touching the acropodia) dark rufous brown ; middle of belly and vent whitish.

This handsome Buzzard is found in the valley of Nepal in rather smaller numbers than *B. ferox*. In its habits it is rather more crepuscular, but otherwise resembles that species. It was observed only during the winter months.

50.—Circus cyaneus, *Lin.*

Male.—Length, 19·0 ; expanse, 44·0 ; wing, 14 ; tail, 9·5 ; tarsus, 2·8 ; tarsus feathered in front, 0·9 ; bill from gape, 1·2 ; bill from anterior margin of cere, 0·65 ; length of cere, 0·45 ; closed wings short of tail, 1·9 ; weight, 13·5 ozs.

Bill bluish black ; base of lower mandible leaden blue ; cere and gape greenish yellow ; margin of eyelids yellow ; irides fine golden yellow ; feet Indian yellow ; claws black.

An adult bird with deep-coloured throat and breast ; upper tail-coverts pure white, not spotted or barred ; fourth primary longest ; second, third, fourth and fifth quills emarginate on the outer web, the emargination of the second primary being hidden by the wing-coverts ; the eyelids densely clothed with white down.

The Hen-Harrier is fairly common in the valley of Nepal, but in winter only. The specimen entered above was shot in a field near the Residency grounds on the 15th March.

51.—Circus macrurus, *Gm.*

The Pale Harrier appeared to be less numerous in the valley of Nepal than *C. cyaneus*, and like that species was only noticed in any numbers during the winter months. An adult male of this Harrier was observed at Manoura (in the valley) on the 7th April, regularly quartering some cultivated fields.

53.—Circus melanoleucus, *Penn.*

The Pied Harrier was never observed in the valley, but was seen on several occasions, from October to December, hunting over rice fields and long grass in the plains and Tarai of Nepal.

54.—Circus æruginosus, *Lin.*

Male.—Length, 20·5 ; expanse, 46·5 ; wing, 15·3 ; tail, 9·7 ; tarsus, 3·3 ; tarsus feathered in front, 1·0 ; bill from gape, 1·4 ; bill at front, 1·23 ; depth of closed bill at anterior margin of cere, 0·58 ; length of cere, 0·5 ; closed wings short of tail, 0·6 ; weight, 1lb.

Bill black, bluish at the sides and at base of lower mandible ; cere and gape greenish yellow ; irides brown ; feet deep, slightly greenish yellow ; claws black.

The Marsh Harrier is common throughout the winter in the valley, the Nawakot district, and the Tara and plains of Nepal. The specimen preserved was shot in the valley of Nepal on the 30th September.

55.—Haliastur indus, *Bodd.*

Male.—Length, 18·5; expanse, 48; wing, 14·3; tail, 8·8; tarsus, 1·9; tarsus feathered in front, 0·7; bill from gape, 1·5; bill at front, 1·25; closed wings short of tail, 0·9; weight, 1lb. 2·5ozs; length of cere, 0·44.

Female.—Length, 19·2; expanse, ·50.; wing, 15·35; tail, 9·15; tarsus, 2·0; tarsus feathered in front, 0·75; bill from gape, 1·4; bill at front, 1·23; closed wings short of tail, 0·6; weight, 1lb 3·5ozs; length of cere, 0·45.

Bill pale greenish horny, bluish at base; cere clear yellow; gape and margins of eyelids plumbeous; eyelids fleshy white; irides golden yellow in male, yellowish brown in female; feet greenish yellow; claws black.

Mr. Hume in "Rough Notes" gives the bill of this bird as black, and Mr. Sharpe (Catalogue I, p 314) says that the adult bird has the cere and bill blackish brown. My specimens were fully adult, and had the bill and cere coloured as above noted. Both birds (shot in the valley of Nepal in August) have the black shaft stripes on head, neck and breast very well marked; the shafts of the tail feathers, on the lower surface only, are white.

The Brahminy Kite is very common in the plains and Tarai of Nepal where it may be constantly seen hunting over rice fields and marshy ground. In the valley of Nepal it was observed in March, August and September in the neighbourhood of tanks and hunting over rice-fields exactly after the manner of a *Circus*. It can only be considered a straggler to the valley, I think.

56.—Milvus govinda, *Sykes.*

Five males.—Length, 23 to 24·7; expanse, 56 to 61·5; wing, 17·7 to 19·1; tail, 11·5 to 12·5; tarsus, 2 to 2·2; tarsus feathered in front, 0·9 to 1·3; bill from gape, 1·7 to 1·8; bill at front, 1·45 to 1·55; closed wings from 2·2 short of end of tail to 0·3 beyond; weight, 1lb. 11ozs. to 2lbs.

Three females.—Length, 24·3 to 26; expanse, 60 to 61; wing, 18·7 to 19·8; tail, 12·3 to 13; tarsus, 2·15 to 2·25; tarsus feathered in front, 1·15; bill from gape, 1·75 to 1·9; bill at front, 1·53 to 1·55; closed wings short of tail, 1·6 to 0·1; weight, 1lb. 15ozs. to 2lbs. 2ozs.

Bill black; grey horny at base of lower mandible; cere and gape greenish yellow; irides hazel to dark brown; feet lemon yellow, in three specimens not mature greyish cream colour; claws black.

Four nestlings shot from 28th April to 1st May.—Length, 22 to 23·5; expanse, 49·5 to 54; wing, 16 to 17·5; tail, 10 to

11·3; tarsus, 2·1 to 2·25; bill from gape, 1·7 to 1·75; bill at front, 1·35 to 1·44; tarsus feathered in front, 1·0 to 1·2; closed wings short of end of tail, 1·5 to 2·6.

Bill black; cere light greenish yellow; gape yellow; irides dark brown; feet pale greenish yellow; claws black.

The twelve specimens here entered were all shot in the valley. Three specimes, not fully mature, had the feet faintly greenish grey without a trace of yellow colour. Is this colour of the feet to be regarded as an individual peculiarity merely? It can hardly be due to age solely, as four young birds just out of the nest, but still unable to fly, had the feet greenish-yellow, only a little paler than in the adult. Unless indeed, we suppose, what is hardly probable, that the bird has the feet at first yellow, and that when about a year old these parts lose the yellow colour but regain it when the bird is fully adult. All the specimens have a mottled white patch on the under surface of the primaries, and in three or four examples this patch is so extensive and so nearly pure white that the birds may possibly be referable to *M. melanotis* rather than to *govinda*; but as these birds are not fully adult, it is impossible to make sure of this point.

The Common Kite is found in abundance in the valley of Nepal, the Nawakot district, and in the lower hills, Dun and Tarai from the valley down to the plains. It is a permanent resident in the valley, and breeds there from January to April.

56 *bis.*—Milvus melanotis, *Tem. et Schl.*

On three or four occasions I saw a Kite in the valley which appeared to be considerably larger than the ordinary one, and was furthur distinguishable by its rather different flight, and by having a larger patch of white on the under surface of the wing. The bird, however, was always so wary and difficult of approach that I failed to secure a specimen. I have already noted under the head of *M. govinda* that some immature specimens which I obtained might be examples of *M. melanotis*; at all events the Large Kite, whether really distinct from *govinda* or only a rare phase of that species, undoubtedly occurs in the valley of Nepal.

56 *ter.*—Milvus affinis, *Gould.*

Two males.—Length, 22·5 to 23·5; expanse, 54·3 to 56·5; wing, 17 to 17·5; tail, 10·8 to 11; tarsus, 2; tarsus feathered in front, 0·9 to 1·0; bill from gape, 1·55 to 1·6; bill from anterior margin of cere, 1·05; length of cere, 0·48; mid-toe, 1·6 to 1·65; closed wings short of tail, 1·8 to 2·1.

Bill bluish black, yellowish at base of lower mandible; cere and gape rich yellow; irides brown; feet greenish yellow; claws black.

Of these two specimens one was shot in the Tarai in December, and the other in the valley of Nepal in February.

This small dark Kite is rare in the valley, but perhaps more common in the Tarai and plains of Nepal. It is readily distinguished from *govinda* by having no mottled white patch on the lower surface of the primaries below the under wing-coverts; it is also smaller, darker and more brilliantly coloured about the cere and gape. Young birds of this species appear to have a little white mottling on the lower surface of the primaries near the coverts, but this is always conspicuously less than in *govinda* at any age.

60.—Strix javanica, *Gm.*

Male, Valley, 7th May.—Length, 14; expanse, 40; wing, 12·1; tail, 5·2; tarsus, 2·5; bill from gape, 1·6; closed wings reach beyond tip of tail, 0·7.

Bill white, faintly tinged pink; cere whitish fleshy; iris blackish brown; toes dirty whitish; claws brownish horny, greyish on lower surface.

Female, Valley, 26th January.—Length, 15; expanse, 41; wing, 12·25; tail, 5·6; tarsus, 2·5; bill from gape, 1·6; from anterior margin of cere to point of bill, straight, 0·8; closed wings reach beyond tip of tail, 1·2; length of cere, 0·7; weight, 14ozs.

Bill horny white, tinged pink about the nostrils, and dusky along margin of upper mandible; cere, gape and basal part of lower mandible pale pinkish fleshy; irides dark brown; edges of eyelids black; toes sullied whitish; claws dark brownish horny.

The Indian Screech-Owl is a permanent resident in the valley, but does not appear to occur there in any great numbers. It is usually seen in the evenings about woods, groves and large gardens. One of my specimens had captured and eaten a Shrew (*Sorex cærulescens*) shortly before it was shot; the bird in consequence had a strong musky odour, and this smell could be detected about its skin for many months afterwards.

64.—Syrnium newarense, *Hodgs.*

Male, Valley, June.—Length, 21; expanse, 55; wing, 15·7; tail, 9·8; tarsus, 2·3; bill from gape, 1·72; bill at front, 1·7; length of cere, 1·0; depth of closed bill at anterior margin of cere, 0·85; width of bill at gape, 1·45; closed wings short of tail, 1·8.

Bill bluish at base, greenish horny white at tip; cere plumbeous; irides deep brown; claws pale grey horny at base, leaden colour at tip.

Female, Valley, July.—Length, 21·3; expanse, 54; wing, 15·8; tail, 9·3; tarsus, 2·7; bill from gape, 1·8; bill at front, 1·73; depth of closed bill at anterior margin of cere, 0·85; width at gape, 1·5; length of cere, 0·95; foot—greatest length, 4·4, greatest width, 4·75; closed wings short of tail, 2·5; weight, 2lbs. 2·5ozs.

Bill greenish horny, bluish near base; cere plumbeous; irides deep brown; ends of toes pale leaden; claws dusky plumbeous, paler at their bases.

Nestling, Valley, 19th June.—Wing, 14·8; tail, 9·0; tarsus, 2·5; bill from gape, 1·7; bill at front, 1·6. Irides blackish brown.

The Brown Wood-Owl is tolerably common in the valley of Nepal throughout the year, and is found in the Nawakot District in winter. It is always found in the interior of woods, and generally in pairs. On the 7th of July I found a pair of these Owls at Nil Barahi, a thickly-wooded knoll situated nearly in the centre of the Great Valley. There is a deep indentation in the hill and wood on one side, and at the entering angle of this space is a level grassy plot, which is prolonged into the wood and up the hill as a narrow little ravine whose banks on each side are rarely higher than about six feet. This ravine or nullah leads up to a temple on the top of the hill, and its sides are thickly covered with bushes, ferns and trees. About half way up the nullah, on a small tree, were a couple of Wood-Owls quite concealed by the foliage, and they allowed me to approach within a few yards of them. I was first apprised of their whereabouts when they flew down one side of the nullah, very noiselessly for birds with such a stretch of wing and in a forest so dense. I shot one bird, and as it fell to the ground the loud and repeated snapping of its mandibles directed me to the spot where it was. I failed to secure the companion bird; it could see me very distinctly, apparently, in the subdued light of the forest, and flew away (never very far) threading its way through the forest with the greatest ease.

Dr. Jerdon gives the native name of this species as "*Newar* of the Nepalese." This is no doubt an error or a misprint. The Newars are the true Nepalese—the aboriginal inhabitants of the valley—and they call this species, and I believe all other owls, "*Bulaca.*"

Syrnium, *Sp.*

Male, Residency grounds, Nepal Valley, 5th December.—Length, 20; expanse, 49·5; wing, 14·4; tail, 9·0; tarsus, 2·5;

bill from gape, 1·55; bill at front, 1·53; from anterior margin of cere to point of bill, 0·95; width at gape, 1·32; depth of closed bill at cere, 0·75; length of cere, 0·85; closed wings short of tail, 1·0; weight, 1lb 10·5ozs.

Bill bluish grey horny, paler at tip; cere leaden blue; lower eyelid lavender; irides rather deep *golden yellow*; extremities of toes bluish grey; claws brownish black, grey horny at their bases.

An adult bird rather dark and richly coloured, but not to be separated from *S. newarense* as far as plumage goes. It is, however, conspicuously smaller than that species, the bill especially being much smaller—far less powerful than even in the nestling of *newarense*—and the irides golden yellow instead of deep brown.

This Owl was shot in the Residency Garden, where it was flying about at ten o'clock in the morning pursued by a crowd of crows. Its stomach contained the feathers, bill, and some bones of a Maina (*Acridotheres fuscus*) rolled up into a ball.

This bird, I think, must be separated from *S. newarense*, but it is not clear what name it should bear. Under the head of *S. indranee*, Mr. Sharpe (Cat. II., p. 282) gives the dimensions of five Napalese birds, of which four have the wing from 14·2 to 14·9, and says: "Apparently, therefore, the last four of these birds ought to be called *S. indranee*." But there seems to be no doubt now (cf. S. F., VI., p. 27) that true *indranee* is the bird described from Ceylon by Mr. Hume under the name of *ochrogenys*; and this is a species totally distinct alike from *newarense* and the small form I have obtained. The four birds mentioned by Mr. Sharpe and my specimen would seem to deserve being separated as a sub-species of *newarense* on the ground of their small size alone—my bird was little more than one-half the weight of an adult *newarense*;* and if the colour of the irides in the small form is always golden yellow, it would be entitled to full specific rank. I would propose the name of *Syrnium hodgsoni* for this Owl.

71.—Bubo nipalensis, *Hodgs.*

This species was only met with on one occasion in the valley. I was walking through thick tree forest on the top of Mount Sheopuri at an elevation of over 7,000 feet, when a pair of

* I hardly follow this. Dr. Scully gives the weight of an adult *female* as 34·5 ozs. Of this specimen a *male*, he gives the weight at 26·5 ozs. Considering that the females very generally run larger than the males, this difference is not so astounding. A fine and very old male I shot at Simla had the wing 15·5, and weighed 33ozs. as against 14·4 and 26·5 ozs. in this supposed sub-species. I cannot recommend this differentiation until some more tangible distinction can be made out.—Ed., S. F.

fine Eagle Owls started from a tree not far in front of me, and made off with great ease through the close forest. My gun was unfortunately only loaded with dust shot and No. 10 at the moment, and although I fired at one of the birds in due course, the only obvious result was noise and smoke.

75.—Scops lettia, *Hodgs.*

Valley, 30th May.—Length, 8·0; expanse, 20; wing, 5·7; tarsus, 1·3; bill from gape, 0·85; from margin of cere to point of bill, 0·5.

I only procured one specimen of this Owl (a young bird) in the valley, where it does not seem to be common. In the Nawakot district a Scops was heard on several occasions in the orchards in November. It may have been this species or *pennatus*.

76.—Carine brama, *Temm.*

Male, Plains of Nepal, December.—Length, 9·0; expanse, 22; wing, 6·6; tail, 3·5; tarsus, 1; bill from gape, 0·85; anterior margin of cere to point of bill, 0·6; length of cere, 0·27.

Bill pale greenish horny; irides golden yellow; feet dingy greenish; claws dusky.

The Spotted Owlet was very common in the plains of Nepal adjoining the Tarai in winter. It was found principally in mangoe topes and clumps of trees. It was never observed in the valley of Nepal, and in the Nawakot district also it seemed to be entirely replaced by the following species.

79.—Glaucidium cuculoides, *Vig.*

Two specimens, Nawakot district, November.—Length, 9·5 to 9·75; expanse, 20·9 to 21; wing, 5·8 to 5·9; tail, 3·5; tarsus, 0·9 to 1·0; bill from gape, 0·85 to 0·86; anterior margin of cere to point of bill straight, 0·56 to 0·63; length of cere on culmen, 0·23 to 0·25; closed wings fall short of end of tail, 1·3.

Bill greenish horny; irides bright yellow; toes dingy greenish; soles deep yellow; claws dusky, greyish at base.

Male, Valley, December.—Length, 9·4; expanse, 20·5; wing, 5·9; tail, 3·6; tarsus, 1·0; bill from gape, 0·85; from anterior margin of cere to point of bill, straight, 0·6; length of cere on culmen, 0·32; closed wings short of tail, 1·1; weight, 5·5ozs.

Bill greenish yellow horny; cere dusky at nostrils; irides bright amber yellow; toes greenish yellow; claws brownish black, grey horny at their bases.

This species was very common in the Nawakot district in winter, frequenting mangoe topes and groves. A specimen was also shot in the Nil Barahi wood (valley of Nepal) in December.

82.—Hirundo rustica, *Lin.*

Female, Valley, June.—Length, 7·8; expanse, 13·2; wing, 4·8; tail, 4·3; tarsus, 0·45; bill from gape, 0·65; bill at front, 0·32; closed wings short of tail, 1·5.

Five young birds shot in the Valley from June to August.—Length, 5·5 to 6·2; expanse, 12 to 12·8; wing, 4·35 to 4·7; tail, 2·5 to 2·9; tarsus, 0·4 to 0·45; bill from gape, 0·6 to 0·65; bill at front, 0·28 to 0·34; closed wings short of tail, 0 to 0·3.

Bill horny black; base of lower mandible yellowish fleshy or yellow; gape whitish fleshy or yellow; irides blackish brown; feet brownish fleshy; claws dusky.

The Common Swallow is found in abundance in the valley of Nepal during seven months of the year. It arrives about the middle of February and migrates to the plains about the middle of September. The earliest date on which I noticed it in the valley was on the 8th February, and the latest on the 13th September. During the winter it is very common in the Tarai and plains of Nepal.

This Swallow breeds freely about the valley in April and May; young birds, just able to fly, are often seen about the beginning of June.

85.—Hirundo nipalensis, *Hodgs.*

Four males, Valley, May.—Length, 6·8 to 7·2; expanse, 12·4 to 12·5; wing, 4·4 to 4·6; tail, 3·5 to 3·9; tarsus, 0·5 to 0·55; bill from gape, 0·5 to 0·6; bill at front, 0·3 to 0·33; closed wings short of tail, 1·2 to 1·45

Three females, Valley, April and June.—Length, 6 9; expanse, 12 to 12·7; wing, 4·3 to 4·6; tail, 3·5 to 3·6; tarsus, 0·55 to 0·6; bill from gape, 0·56; bill at front, 0·3 to 0·35; closed wings short of tail, 1·15 to 1·2.

Bill black; irides blackish brown; feet dusky; claws black. A young bird shot on the 29th August measured:—Length, 6·2; expanse, 12·5; wing, 4·4; tail, 3·1; tarsus, 0·5; bill from gape, 0·6; bill at front, 0·3; closed wings short of tail, 0·85; Bill, black; base of lower mandible and gape fleshy yellow; irides brownish black; feet dusky brownish; claws black.

This Swallow is even more common in the valley of Nepal than *rustica*, and is much more familiar in its habits than that species, constantly flying about houses and often entering into the rooms. It lives in the valley for about eight months in

the year, migrating to lower levels in winter. It was not uncommon in the Nawakot district about the end of November.

This species breeds in the valley from April to the end of July, some birds certainly producing two broods in the season. The nests are made of pellets of fine light-coloured clay, and are usually fixed between the rafters of verandahs or of rooms which are little used. The shape of the nest is a rather irregular half-retort, the entrance being long and narrow. The usual number of eggs laid is four, and these rest on a beautiful cushion of soft feathers—often those of the Chikore, Black Partridge and Pigeon. The eggs are well-known; pure delicate white, in shape long oval, smaller at one end.

89.—Cotyle sinensis, *J. E. Gr.*

Four specimens, Valley, February to June.—Length, 4·0 to 4·5; expanse, 9·7 to 10·3; wing, 3·6 to 3·8; tail, 1·75 to 1·9; tarsus, 0·4; bill from gape, 0·42 to 0·47; closed wings short of tail, 0·2 to 0·6.

Bill black; gape pale fleshy; irides dark brown; feet dusky brownish; claws dusky.

Male, Valley, 13th May.—Length, 4·4; expanse, 9·7; wing, 3·3; tail, 1·8; tarsus, 0 4; bill from gape, 0·45; closed wings short of tail, 0·15.

Bill black; irides dark brown; feet brown fleshy; claws dusky.

These five specimens have the rump and upper tail-coverts decidedly paler than the back.

The Bank Martin is fairly common in the valley of Nepal, and resides there throughout the year; in winter it is very noticeable, as the Swallows and Swifts are then absent. It was found in fair numbers in winter in the Nawakot district and Markhu Valley.

The bird is usually found over wet fields and marshy ground, and along the course of streams. It has its holes and breeds in the banks of rivers and in the sides of the alluvial cliffs so common in the valley of Nepal.

91.—Cotyle rupestris, *Scop.*

This Crag Martin was only noticed, on a few occasions, in the great valley, but was more common in the Nawakot district and the Markhu Valley in winter. It was always found over mountain streams having high rocky banks.

100.—Cypsellus affinis, *J. E. Gr.*

Five males.—Length, 5·0 to 5·2; expanse, 12·25 to 13; wing, 5·0 to 5·3; tail, 1·9 to 2·15,; tarsus, 0·34 to 0·35; bill

from gape, 0·69 to 0·75; bill at front, 0·25 to 0·26; closed wings beyond tip of tail, 1·2 to 1·4.

Three specimens, not sexed.—Length, 5·0 to 5·3; expanse, 12·6 to 13; wing, 5·1 to 5·2; tail, 1·9 to 2·1; tarsus, 0·35 to 0·4; bill from gape, 0·7 to 0·72; bill at front, 0·25 to 0·28; closed wings reach beyond end of tail, 1·2 to 1·35.

Bill black; irides dark brown; lower eyelid leaden or purplish slaty; feet dusky; the ends of the toes black; claws brownish black or black.

A young bird, with pale edges to the coverts, 9th September.—Length, 4·9; expanse, 12·25; wing, 4·8; tail, 2·0; tarsus, 0·35; bill from gape, 0·7; bill at front, 0·26; closed wings beyond tail, 1·4.

Bill black; irides blackish brown; feet fleshy; claws black, pale at the tips.

The Common Indian Swift is very abundant in the valley of Nepal during about eight months of the year, but migrates to warmer regions in winter. It arrives in the valley about the first week in March, and by the 10th of that month it is found in swarms near all the towns and villages. It was noticed in the Nawakot district about the end of November.

The breeding season seems to last from April to July; and, as a rule, some dozens of nests will be found close together under the eaves of houses and between the rafters of covered passages and verandahs; but on two occasions solitary nests were found. The nest and eggs of these species are well-known.

103.—Collocalia unicolor, *Jerdon.*

Two specimens, Valley, 20th August.—Length, 5·0 to 5·1; expanse, 11·75; wing, 5·0; tail, 2·3 to 2·33; tarsus, 0·4; bill from gape, 0·5; bill at front, 0·22; closed wings beyond end of tail, 1·34 to 1·4.

Bill black; irides dark brown; tarsi livid fleshy; toes dusky; claws black.

I have compared the above two specimens with an example from Coonoor, Nilgiri Hills, and the skins correspond so closely that they cannot possibly be separated. A specimen from Sikim, in Mr. Hume's museum, is much darker on the lower surface than my Nepal birds.

This species was common on the hills round the Nepal Valley in August and September, at elevations of about 6,000 feet and upwards. It flies with great speed, and appears to be a very silent bird.

107 *bis.*—Caprimulgus jotaka, *Temm and Schl.*

Male, Valley, December.—Length, 10·75; expanse, 22·9; wing, 7·9; tail, 5·2; tarsus, 0·6; bill from gape, 1·35; bill at front, 0·33; closed wings short of tail, 0·7; weight, 2·5 ozs.

Bill dusky; gape fleshy; irides deep brown; toes purplish dusky; tarsus feathered, all the tail feathers except the uropygials, with a subterminal white spot.

This specimen is dark and very richly colored, and corresponds precisely in details of plumage with specimens in Mr. Hume's collection, labelled *jotaka*; but the wing seems small for that species, and it may possibly be a rather large example of *indicus*, Lath.

This Goatsucker does not appear to be common in the valley of Nepal. It was generally found in pairs in small wooded nullahs at the foot of the hills.

Caprimulgus, *Sp.*

Male? Valley, 28th July.—Length, 10·7; expanse, 22·75; wing, 7·6; tail, 5·3; tarsus, 0·65; bill from gape, 1·3; bill at front, 0·43; closed wings short of tail, 1·5; weight, 3ozs.

Bill dusky brown; gape pale fleshy; irides deep brown; feet fleshy brown; claws blackish; tarsus feathered; the two outer tail feathers on each side with a conspicuous *terminal* patch of fulvous white.

Female, Valley, 28th June.—Length, 10·8; expanse, 23·0; wing, 7·65; tail, 5·4; tarsus, 0·65; bill from gape, 1·3; bill at front, 0·45; closed wings short of tail, 1·3.

Bill black; base of lower mandible and gape fleshy; irides deep brown; feet brown fleshy; claws blackish; tarsus feathered; no trace of white terminations to any of the tail feathers.

I have carefully compared these two specimens with a fine series of the following Goatsuckers in Mr. Hume's museum, *viz: indicus, jotaka, kelaarti, europæus* (*unwini*), *albonotatus, macrurus, andamanicus, atripennis, asiaticus, mahrattensis, monticolus*, and my Nepal birds are certainly quite distinct from every one of the above species. The first specimen was sexed, with doubt, as a female, but I feel satisfied now that it was really a male. It is clearly of the same species as the second example, which is undoubtedly a female. This Goatsucker belongs to the same section as *europæus*, but may be distinguished at once by its general yellowish buff tint, and notably by the whole row of scapulars being velvet black narrowly edged with buff, thus giving the appearance of a row of large black patches down each side of the back, not seen in any other Indian species of *Caprimulgus*.

Besides *saturatior*, which is the same as *indicus* or *jotaka*, and *gymnopus* which is a synonym of *monticolus*, Mr. Hodgson appears to have named two other species of this genus from Nepal, *viz.*, *C. nipalensis* (Gray, Zool. misc, p 82) and *C. innotatus*. In his drawings he figures a large pale bird which is clearly *albonotatus*, and in another plate he represents a Goat-sucker very like the birds I obtained but larger (wing 8·1). I must refrain from giving any new name to my birds, as they will doubtless prove to belong to one of the species above mentioned, but I hope some one will examine Mr. Hodgson's specimens in the British museum, and let us know what Goat-suckers he obtained in the valley.

This Night Jar was only noticed in the Residency grounds (Valley), where both my specimens were shot. I did not observe anything worthy of note in regard to its habits.

117.—Merops viridis, *Lin.*

Female.—Length, 7·2 ; wing, 3·55 ; tail (to outer feathers) 2·8 ; tarsus, 0·37 ; bill from gape, 1·25 ; bill at front, 1·0 ; closed wings short of outer tail feathers, 1·3.

This specimen was shot in my garden in the valley of Nepal on the 23rd March, and it was the only example of a Bee-Eater ever seen in the valley in two years. The species was common about Hetoura, in the Dun, and in the plains of Nepal near the Tarai, in winter.

123.—Coracias indica, *Lin.*

Three males.—Length, 12·9 to 14 ; expanse, 25 to 26·25 ; wing, 7·8 to 7·9 ; tail, 5·6 to 5·75 ; tarsus, 0·95 to 1·1 ; bill from gape, 1·73 to 1·95 ; bill at front, 1·07 to 1·3 ; closed wings short of tail, 1·85 to 2·5.

Three females.—Length, 13 to 14 ; expanse, 24·6 to 26·1 ; wing, 7·3 to 7·85 ; tail, 5·4 to 5·75 ; tarsus, 0·8 to 1·05 ; bill from gape, 1·7 to 1·8 ; bill at front, 1·15 to 1·23 ; closed wings short of tail, 2·2 to 2·5.

Bill black, brownish horny at base of lower mandible ; orbital skin yellowish or orange ; feet dull greenish yellow ; claws black. In immature birds the iris is brownish grey.

These specimens were obtained in the Nepal Valley, the Nawakot district, and the plains of Nepal ; all are typical *indica*, not showing any leaning towards *affinis*.

The Indian Roller is very common in the Nawakot district, and in the plains and Tarai of Nepal throughout the year. To the valley of Nepal it is merely a straggler, a few birds being seen there at long and irregular intervals. It was noticed in the valley in February, May, and September.

129.—Halcyon smyrnensis, *Lin.*

Five males.—Length, 10·1 to 11·35; expanse, 16·6 to 17·6; wing, 4·65 to 4·9; tail, 3·2 to 3·65; tarsus, 0·54 to 0·6; bill at front, 2·02 to 2·25; bill from gape, 2·52 to 2·8; closed wings short of tail, 1·9 to 2·1; weight, 2·75 to 3·5ozs.

Two females.—Length, 10·5 to 11·5; expanse, 16·5 to 17·7; wing, 4·8; tail, 3·4 to 3·5; tarsus, 0·6 to 0·65; bill from gape, 2·35 to 2·65; bill at front, 1·9 to 2·25; closed wings short of tail, 1·9 to 2·3; weight, 2·7 to 3·5ozs.

Bill dark red, brighter at base of lower mandible, and the tip orange to brownish; irides dark brown; feet dusky reddish, the posterior aspect of the tarsus and the soles deep red; claws brownish black, in immature birds pale horny at the tips.

The Smyrna Kingfisher is common in the valley of Nepal, where it frequents the skirts of all the woods in the central part of the valley, and the neighbourhood of brooks, tanks, and rice fields. I can hardly doubt that it is a permanent resident in the valley, but I certainly never once noticed it during the months of April, May, and June (its breeding season), whereas it is always very prominent during the other nine months of the year. It was tolerably common in the Nawakot district in November. This Kingfisher seems to prefer the lower branches of small trees for a perch, but it may be often seen high up on a pine or blue gum tree; its loud harsh scream is uttered when it takes wing, but it has another prolonged and almost musical note which it gives forth from its perch.

134.—Alcedo bengalensis, *Gm.*

Nine specimens.—Length, 5·85 to 6·8; expanse, 10 to 10·6; wing, 2·76 to 3; tail, 1·4 to 1·63; tarsus, 0·3 to 0·35; bill from gape, 1·8 to 2·05; bill at front, 1·35 to 1·6; closed wings short of tail, 0·4 to 1·0.

Bill black; a small space at base of lower mandible brown or reddish brown; irides dark brown; gape orange red; feet coral red, tinged dusky in front,—in young birds the tarsus and toes dusky in front; claws black.

This Kingfisher is common in the valley of Nepal, the Nawakot district, and the Markhu Valley. It is usually found along the course of the streams.

136.—Ceryle rudis, *Lin.*

The Pied Kingfisher was only noticed once in the Nawakot district in November, hovering over a stream.

147.—Palæornis nipalensis, *Hodgs.*

Two males, Sâl forest, December.—Length, 21·8 to 22; expanse, 26 to 26·5; wing, 9 to 9·05; tail, 12·45 to 13·5; tarsus, 0·7 to 0·8; bill from gape, 1·05 to 1·1; from anterior margin of cere to point of bill, straight, 1·4 to 1·45; nostril to point of bill, 1·35; depth of closed bill at anterior margin of cere, 1·6; height of upper mandible at base, 0·85 to 0·88; length of cere on culmen, 0·08; closed wings short of tail, 8·4 to 9.

Bill coral red, the colour of the upper mandible deeper than that of the lower, and the tips of both mandibles horny yellow; cere and margins of eyelids fleshy yellow; irides pale yellow; feet sullied whitish fleshy; claws dusky horny, paler at their bases.

Female, Bichiakoh, December.—Length, 20·5; expanse, 24; wing, 8·25; tail, 11·2; tarsus, 0·79; bill from gape, 1·03; from anterior margin of cere to point of bill, 1·33; nostril to point of bill, 1·3; depth of closed bill at anterior margin of cere, 1·34; height of upper mandible at base, 0·8; length of cere on culmen, 0·09; closed wings short of tail, 7·3.

Bill coral red, the lower mandible much paler than the upper, and the tips of both mandibles horny yellow; cere and margins of eyelids yellowish fleshy; irides pale yellow; feet dirty whitish fleshy; claws dusky horny, pale at their bases.

These birds were shot in the Sâl forest at Bichiakoh in December, when the sexual organs were well developed, shewing that the species was near its breeding time; the birds were clearly adult.

The *male* has broad black mandibular stripe, a half collar on the back of the neck of bright rose pink, surmounted by a very distinct glaucous blue band; the cheeks suffused with glaucous blue, and the base of the throat below the mandibular stripes dingy yellowish.

The *female* has no glaucous blue about the head, no black mandibular stripes, and no rose demi-collar.

Both sexes have the dark red wing spot large, about two inches long and nearly one inch broad.

My birds are clearly referable to Hodgson's *Palæornis nipalensis*, "Asiatic Researches," 1836, Vol XIX, p. 177, from the "Tarai and Lower Hills of Nepal." The figure of this Paroquet in Mr. Hodgson's drawings must be either unfinished or taken from a young male, as no blue shade is shown on the cheeks; but he expressly states on the back of this plate that his bird was obtained from the "Sâl forest," where, in fact, the species I got swarms on the highway between Segowli and Kathmandu

so often traversed by Mr. Hodgson and his shikaris. But my specimens also correspond in the most minute particulars with the so-called *P. sivalensis*, Hutton. This I have ascertained comparison of specimens in Mr. Hume's museum; so that there can be no doubt that *sivalensis* must be relegated to the limbo of synonyms.*

No doubt opinions will vary greatly as to whether *nipalensis* and some other forms are specifically distinct from *eupatrius*, Linn. The subject is too large to be entered on here, but I will merely note (1) that Captain Legge demurs to the statement that *eupatrius* of Ceylon *is* so very much smaller than the other forms, (2) that a specimen from Mount Aboo is said to be *nearer* the Singhalese than the Sub-Himalayan form, (3) that Sikim examples are not identical with either *sivalensis* or any other named race, and (4) that an adult male of so-called *magnirostris* from Burma in Mr. Hume's collection has the bill no larger (in fact a little smaller, I think) than in a specimen from Ceylon. When the whole evidence is carefully collated I believe that *P. eupatrius* will stand with two sub-species, *viz.* *P. magnirostris*, Ball, and *P. nipalensis*, Hodgs. To follow Mr. Seebohm's ingenious classification of ornithologists, the "lumpers" will admit *eupatrius* only, the "splitters" will recognize *eupatrius*, and about four other closely-allied species. I hope that my attempt to introduce myself among those "who aim at hitting the happy medium" will be duly remembered to my credit.

This fine Paroquet is common in the Sâl forest of Nepal from Semrabasa, where the forest begins, to Hetoura in the Dun. The bird is most numerous about Bichiakoh, less so at Semrabasa, where it meets *P. torquatus*, and at Hetoura where it meets *P. purpureus*. I did not observe it in the plains, nor above Hetoura in winter. It is never seen in the valley of Nepal except as a cage bird. This species frequents the depths of the Sâl forest in pairs or small parties of six to eight. Its note is rich deep and not unpleasant, and its flight is rather slow but strong.

148.—Palæornis torquatus, *Bodd.*

Three males:—Length, 17 to 18·5; expanse, 20 to 21·5: wing, 6·8 to 7·3; tail, 10 to 10·85; tarsus, 0·6; bill from gape, 0·76 to 0·8; from anterior margin of cere to point, straight, 0·96 to 1·0; cere on culmen, 0·08 to 0·1; depth of closed bill, 0·85 to 0·93; closed wings short of tail, 6·9 to 7·5.

* This has been already pointed out, S. F. VII., 458, where the whole question is fully discussed.—Ed., S. F.

Bill dark red; the lower mandible darker than the upper, and dusky at the tip; cere yellowish fleshy; margins of eyelids orange; irides pale yellow, with an inner grey ring; feet sullied yellowish grey; claws plumbeous at base, dusky at tips.

Three females.—Length, 16 to 16·5; expanse, 19·8 to 20·3; wing, 6·53 to 6·8; tail, 8·7 to 9·4; tarsus, 0·6; bill from gape, 0·73 to 0·75; anterior margin of cere to point of bill, straight, 0·85 to 0·9; cere on culmen, 0·1 to 0·15; depth of closed bill, 0·8 to 0·84; closed wings short of tail, 5·75 to 6·35.

Bill, upper mandible dark red, lower reddish dusky; edges of eyelids orange; irides pale yellow with a pupillary ring of grey; feet pale fleshy grey; claws dusky at tips, grey horny at their bases.

All these specimens were shot towards the end of December and were most satisfactorily sexed, the birds being apparently quite adult and the sexual organs prominent. The *males* had a rose demi-collar, much the same colour as in *nipalensis*, but paler and narrower; black stripes from the base of the lower mandible meeting at the chin, and a fine black streak from nostril to eye. The blue on the head varied from a band above the rose ring to a washing extending to the crown, and was continued round in front to the junction of the black stripes. The *females* had a narrow emerald green ring round the neck; but had no blue on the head, no rose collar, and no black band in front. Neither sex showed any trace of a red shoulder spot.

The Rose-ringed Paroquet is found in great numbers in the plains of Nepal near the Tarai, and a few birds stray into the lower part of the Sâl forest; but it is not found in the lower hills, the great valley, or the Nawakot district at any season of the year. In winter it swarms in thousands in the plains of Nepal, going about in parties or large flocks, and constantly uttering its harsh screaming cry. It frequents hedges, bamboo clumps, mangoe topes, stubble fields and haystacks.

On the 20th December I was encamped in a large tope at Parwanipur, which was evidently a favourite roosting place of this Paroquet; for, notwithstanding all the noise and bustle of a large camp, the birds flew into the trees about dusk in hundreds, and the fearful din they made in settling down could only be compared in its violence to a storm at sea.

149.—Palæornis purpureus, *P. L. S. Müll.*

Three males, Nawakot district, 29th November.—Length, 14 to 15·1; expanse, 16·9 to 17·2; wing, 5·8 to 6·0; tail, 8 to 9·5; tarsus, 0·48 to 0·5; bill from gape, 0·65 to 0·66; from anterior margin of cere to point of bill, 0·67 to 0·7; closed wings short of tail, 5·4 to 6·8.

Bill with the upper mandible orange yellow, the lower black; irides white, whitish, or hoary; feet pale dingy greenish; claws grey horny, in one specimen dusky horny; head rich peach-bloom red, shaded with delicate blue on the occiput, nape, and cheeks; black mandibular stripes continued as a narrow collar round back of neck; wing spot dark red; wing-coverts and axillaries verditer blue, contrasting with the colour of the breast.

Young bird, Hetoura, 25th December.—Length, 10·2; expanse, 15·8; wing, 5·4; tail, 4·4; tarsus, 0·4; bill from gape, 0·57; from anterior margin of cere to point of bill, 0·65; depth of closed bill at cere, 0·68; cere on culmen, 0·15; closed wings short of tail, 1·95.

Bill horny yellow, dusky at tip; the upper mandible darker than the lower, and slightly mottled dusky; irides very pale yellow; feet greenish; forehead, lores and cheeks bluish grey; the forehead tinged brown; top and back of head green like the back; a yellow collar most prominent at sides of neck and faint on the nape; tip of middle tail feathers blue; no trace of a wing spot; under wing-coverts the same colour as in the adults noted above.

This beautiful species is very common in the Nawakot district and in the Dun about Hetoura. It does not occur in the valley except possibly as a mere straggler. It is usually seen in large flocks, flies most swiftly, and has a very pleasant call; the note of the bird when perched is sometimes most musical. On several occasions I have had reason to be astonished at the way in which this Paroquet can conceal itself in a tree: a large flock will fly into a tree in full foliage, and at once become invisible to the keenest scrutiny.

Two Paroquets of this species were purchased in Nepal, in February. The birds were alike, and had the head plum blue, a yellow collar and no black ring round the neck; they were supposed to be either adult females, or else young birds. About the middle of March I was surprised to see them *in coitu*; on the 20th March one of the birds laid an egg in the cage; a second egg was laid on the 25th, and a third on the 30th. The eggs were pure white and of normal shape and size for the species.

In "STRAY FEATHERS," I., p. 343, foot-note, and again in "Nests and Eggs," p. 117, Mr. Hume says that *P. cyanocephalus (bengalensis)* is found in Nepal; if so this must refer to the extreme east of the State, on the borders of Sikim.

150.—Palæornis schisticeps, *Hodgs.*

Male, December.—Length, 14·2; expanse, 18·4; wing, 6·25; tail, 7·8; tarsus, 0·6; bill from gape, 0·7; anterior margin of

cere to point of bill, 0·8; depth of closed bill at cere, 0·78; cere on culmen, 0·2; closed wings short of tail, 5·0.

Bill horny yellow; base of upper mandible coral red; cere orange; irides light straw; feet pale greenish; claws horny grey. An adult bird, with the head dark slaty, bordered by a narrow black band which meets at the chin; below the black ring a half collar, on back of neck bright green; a small maroon-red wing spot; end of tail saffron yellow.

Three young males, January.—Length, 12 to 12·3; expanse, 18·5 to 18·75; wing, 6·4 to 6·6; tail, 5·5 to 6·25; tarsus, 0·5 to 0·55; bill from gape, 0·65 to 0·72; anterior margin of cere to point of bill, 0·75 to 0·84; nostril to point of bill, 0·8 to 0·82; depth of closed bill at cere, 0·78 to 0·82; cere on culmen, 0·2 to 0·22; closed wings short of tail, 2·9 to 3·5; weight, 4ozs. to 4·75ozs.

Bill horny yellow, livid at tip; base of upper mandible reddish brown; irides yellowish white; feet grey, or yellowish fleshy; forehead and cheeks dingy greyish green; top and back of head dark green; a pale and rather bright green ring round neck; no black mandibular stripe, and no wing spot.

Female, young, January.—Length, 12·5; expanse, 18·7; wing, 6·5; tail, 6·0; tarsus, 0·6; bill from gape, 0·7; anterior margin of cere to point of bill, 0·34; nostril to point, 0·85; depth of closed bill at cere, 0·83; cere on culmen, 0·2; closed wings short of tail, 3·0; weight, 4·25 ozs. Colors of soft parts and plumage as in the young males described above.

The Slaty-headed Paroquet is tolerably common in the valley of Nepal in winter, and is usually seen there in flocks of various sizes from December to April. In December it was found in great numbers about the Sisagarhi Ridge, and in January in the Residency grounds. Curiously enough, all the birds noticed about the Residency appeared to be young; these were comparatively fearless and easily approached. This species seems to be very capricious in its movements and wanders about a good deal; it is a favourite cage bird in Nepal.

152.—Palæornis fasciatus, *P. L. S. Müll.*

Male, young, Valley of Nepal, 30th August.—Length, 10; expanse, 18; wing, 5·8; tail, 3·5; tarsus, 0·6; bill from gape, 0·8; bill at front, 1·0; depth of closed bill at cere, 0·94; cere on culmen, 0·15; closed wings short of tail, 1·6; weight, 5ozs.

Bill horny black; base of lower mandible and tip of upper brownish; irides creamy white; cere grey plumbeous; feet pale green; claws dusky or livid. A dusky band, 0·2 in width, across forehead extending to the eyes; above this on the fore-

head a narrowish fulvous band, tinged vinaceous, continued backwards as a supercilium to the ear-coverts; a broad fulvous patch on each side of the head embracing lores, cheeks and ears; the ear-coverts tinged greenish; a dusky band, 0·5 broad, and 1·1 long on each side of the throat, from the lower mandible; vertex, occiput, and nape bright green; whole upper parts dark green, the feathers black shafted; secondary coverts tinged yellow, and the inner webs of the primaries blackish, edged with yellow internally; chin yellowish fulvous; rest of under surface pale green; under surface of tail feathers pale yellowish olive.

This species was not common in the valley of Nepal, and was only observed there in August, September and October. It was usually seen in flocks of about twenty birds, frequenting small trees on the confines of forests. As this is the last species of the genus *Palæornis* to be noticed, I may here give my impression of the general vertical distribution of the various species in that part of Nepal which is known to me. *P. schisticeps* is found at greater elevations than any of the others, ranging up to 7,000 feet or over in summer; next in order comes *fasciatus*, then *purpureus* at elevations of from 1,500 to 3,000 feet; then *nipalensis* in the Sâl forest; and lastly *torquatus* in the Tarai and plains.

155.—Picus majoroides, *Hodgs.*

Five males, May.—Length, 9·2 to 9·9; expanse, 15·9 to 16·3; wing, 5·0 to 5·3; tail, 3·35 to 3·85; tarsus, 0·85 to 1·0; bill from gape, 1·45 to 1·6; bill at front, 1·22 to 1·4; closed wings short of tail, 1·0 to 1·5.

Upper mandible dusky or slaty black; lower pale grey horny; orbital skin leaden or slaty; irides brownish red to deep crimson; feet dingy green; the soles dull yellow; claws livid horny.

Female, May.—Length, 9·2; expanse, 15·5; wing, 5·02; tail, 3·4; tarsus, 0·8; bill from gape, 1·45; bill at front, 1·2; closed wings short of tail, 1·3.

Upper mandible slaty black; lower grey horny; orbital skin plumbeous; irides reddish brown; feet dingy green; claws slaty.

It will be observed from the above measurements, carefully taken from specimens in the flesh, that this Woodpecker, which is doubtless Hodgson's *majoroides*, is much larger than stated by Gray and Jerdon. The former author described the species in the B. M. Catalogue of Mr. Hodgson's Collection, 1846, App. p. 156, and the dimensions there given are:—"Length, 8 in.; bill 1 in. 5 lin.; wing 4 in. 9 lin.; tarsi 7 lin." Dr. Jerdon's mea-

surements can be easily referred to, and as his description of *majoroides* does not quite fit the above six birds, I may note the following points about them: There is no white spot on the outer web of the first primary; the three outer tail feathers are banded with yellowish, not *pure*, white; a narrow stripe on the forehead, the lores, round the eye, and the ear-coverts are whitish tawny; the patch on the side of neck beginning behind the ear-coverts and continued narrowly across back of neck to the opposite side is silky golden yellow; the lower breast, abdomen, and flanks are markedly tinged with yellow. The crimson band on the hind head of the male is about half an inch broad on the occiput. The female differs from the male in having the head black, without any crimson band, and the yellow patch on the side of the head is duller.

Male, young, May.—Length, 8·6; expanse, 15·0; wing, 4·8; tail, 3·1; tarsus, 0·9; bill from gape, 1·2; bill at front, 0·93; closed wing short of tail, 1·05.

Bill leaden grey horny, darker above; irides brown; feet greenish plumbeous. The bill short and *soft*; colours much as in *majoroides* female, but less intense; the lower tail-coverts very pale crimson, and the whole top of head dull crimson, with the black bases of the feathers showing through as small spots. This specimen is very interesting; it has the head colored as in *himalayanus* male; but the underparts are boldly striped as in *majoroides* and not uniform, unstreaked as appears to be constantly the case in the former species. I refer the specimen to *majoroides* principally, because it has the breast and abdomen streaked with black, and because it was obtained at the same time and place as that species, while no adult specimen of *himalayanus* was obtained in Nepal. The young of both sexes of *majoroides*, might have been expected to resemble the mature female.

This Woodpecker is common on the hills surrounding the valley of Nepal, wherever large tree forests occur. I found it common in the Sheopuri forest in May, at an elevation of about 7,000 feet, frequenting the moss-covered oaks. It was usually seen high up on the trees, singly or in pairs. The birds hammered very vigorously at the bark of the trees and were not easily alarmed.

157.—Picus macei, *Vieill.*

Female, Bichiakoh, December.—Length, 8·1; expanse, 13·8; wing, 4·35; tail, 3·15; tarsus, 0·65; bill from gape, 1·13; bill at front, 0·9; closed wings short of tail, 1·1.

Bill plumbeous dusky, grey horny at base; feet greenish plumbeous; the two outer tail feathers on each side are barred

with white; the third lateral tail feather on each side has two white spots on the outer web, and a terminal white spot at the tip. With reference to Mr. Blanford's remarks on this species in J. A. S., B., Vol. XLI, of 1872, Part II, p. 155, I note that my bird has the lower parts deep buff, with well-marked dusky stripes. This example agrees well with specimens from Mussoorie in Mr. Hume's museum.

This species was noticed in the Nawakot district in November, and about Bichiakoh in December. At the latter place it was found in a clump of Acacia trees associated with *Yungipicus pygmæus*.

159 *bis*.—Picus incognitus, *Sp. Nov.*

Female, Valley of Nepal, 2nd March.—Length, 7·6; expanse, 13·5; wing, 4·3; tail, 3·1; tarsus, 0·7; bill from gape, 1·06; bill at front, 0·84; closed wings short of tail, 1·15.

Bill plumbeous, pale greyish horny at base of lower mandible; eyelid leaden; irides crimson; feet dingy greenish leaden; claws plumbeous horny.

Forehead brown; vertex and occiput bright gamboge yellow; rest of upper plumage black with white bars; tail with the centre feathers black, faintly rayed; the two outer feathers on each side banded with yellowish white, and the third lateral tail feather on each side with two yellowish white spots on the outer web near the tip; lores and ear-coverts whity brown; a white patch on the side of the neck, prolonged narrowly below the ear-coverts; a brown mandibular stripe on each side of the neck of much the same tint as the forehead; beneath the plumage sullied white; the breast and abdomen tinged yellow, and with longitudinal blackish streaks; vent and under tail-coverts pale crimson.

I have compared this specimen with twenty-two fine skins of *Picus brunnifrons* from the Western Himalayas in Mr. Hume's museum, and I cannot avoid the conclusion that the Nepal bird is distinct. It is closely allied to *brunnifrons*, but differs in the following particulars:—It is considerably smaller; the bill is much longer, more pointed, not so deep at the base, and the culmen is decidedly not so straight; the hind head is bright gamboge yellow instead of rather dull golden (I refer to females); and these pale yellow feathers are much longer and come down on the nape in a sort of crest.

There can be no doubt as to which is the true *brunnifrons* of Vigors, for it is the western species that is so well figured in Gould's Century of Himalayan Birds; and the figure in Malherbe's monograph also faithfully represents the same species. I should have hesitated to describe my single speci-

men as now, had I not seen Mr. Hodgson's drawings of the male and female of the species he called *P. brunnifrons*; his plate undoubtedly represents the species to which I have ventured to give a new name, and shows that the male bird has a crimson occipital band, as in the allied form so common in the Himalayas further to the west. On the back of his plate Mr. Hodgson notes that he obtained his specimens in the valley, and the measurements he gives, from several examples in the flesh, show the size did not exceed that of my bird.

This species was only once noticed in the valley of Nepal. On the 2nd March a bird was heard in the Residency grounds uttering a peculiar, rather shrill and long cry, at short intervals; the note reminded one somewhat of the alarm cry of *Halcyon smyrnensis* in winter, and proceeded from this Woodpecker, then perched in a pine tree. In a minute or two the cry stopped, and then the situation of the bird was betrayed by the flakes of bark which fell from the branch it was exploring. I fancy I saw this Woodpecker in the Nawakot district in winter, but this is not certain.

163.—Yungipicus pygmæus, *Vig.*

Male, Bichiakoh, December.—Length, 5·6; expanse, 10·7; wing, 3·4; tail, 2·25; tarsus, 0·54; bill from gape, 0·67; bill at front, 0·55; closed wings short of tail, 0·55.

Bill horny grey; irides dark red; feet dingy green. Two small crimson sincipital tufts, upper tail-coverts and four central tail feathers unspotted black.

Two females, Dun and Bichiakoh, December.—Length, 5·1 and 5·8; expanse, 10·1 and 10·5; wing, 3·4 and 3·45; tarsus, 0·55 and 0·6; bill from gape, 0·75; bill at front, 0·58 and 0·6; closed wing short of tail, 0·6.

Bill grey horny; irides dark reddish; feet dingy green; no crimson about head; central tail feathers and upper tail-coverts black.

This little Woodpecker was tolerably common in December throughout the Sâl forest from Hetoura to Semrabasa. It frequented the depths of the forest trees growing about cleared spaces, isolated clumps of Acacias, &c., and was constantly heard tapping as one walked along the forest paths. I noticed it often on quite young trees, clinging to the horizontal branches and hammering away as if its life depended on its exertion. It seemed to be very bold, and when disturbed would usually fly no further than to the next tree.

171.—Gecinus striolatus, *Bly.*

Male, Sâl forest, between Bichiakoh and Semrabasa, December.—Length, 11; expanse, 17; wing, 5·4; tail, 4·1; tarsus, 1·05;

bill from gape, 1·5; bill at front, 1·25; closed wings short of tail, 2·1.

Bill plumbeous dusky; the basal three-fourths of the lower mandible yellowish green horny; irides carmine red; feet dingy plumbeous. There is a black line across the forehead which is not "whitish" as given by Jerdon.

I found this Woodpecker very common in the Sâl forest from Bichiakoh to Semrabasa in December. It was almost invariably found feeding on the ground, in rather long grass. As one walked through the forest and flushed them, the birds rose noiselessly and flew to the lower branches of the trees. Occasionally a bird would fly away over the grass for twenty or thirty yards, and then settle on the trunk or horizontal branch of a tree. I did not believe I had Woodpeckers before me until I shot one.

172.—Gecinus occipitalis, *Vig.*

Male, Hetoura, December.—Length, 12·45; expanse, 19·2; wing, 6·1; tail, 4·7; tarsus, 1·0; bill from gape, 1·65; bill at front, 1·45; closed wings short of tail, 2·4.

Bill dull horny black; orbital skin plumbeous; irides dark crimson; feet plumbeous; claws slaty.

Male, young, Pharphing (near Valley) 13th July.—Length, 10·6; expanse, 17·5; wing, 5·5; tail, 3·9; tarsus, 1·1; bill from gape, 1·45; bill at front, 1·15; closed wings short of tail, 2·0.

Bill slaty, whitish horny at tip; irides brown; feet pale plumbeous.

Female, Valley of Nepal, August.—Length, 12·6; expanse, 19·2; wing, 5·9; tail, 4·55; tarsus, 1·15; bill from gape, 1·6; bill at front, 1·5; closed wings short of tail, 3·0; weight, 6ozs.

Bill horny black; orbital skin plumbeous grey; irides crimson; feet plumbeous; claws slaty.

These specimens do not agree very well with Jerdon's description, but are identical with examples from Simla, Dehra, &c. I note the following points for comparison with Jerdon's account:

The male has the forehead and top of head red; the occiput and nape black; a black mandibular stripe on each side of the throat, extending to below the ear-coverts, where it turns slightly upwards and ends abruptly; point of chin ashy.

The young male has the red of the forehead extending to the mid line of the crown, *i.e.*, the red colour does not extend so far back on the head as in the adult.

The female has no red on the head, which is black, streaked with slaty or grey, and the nape is black.

The young male has the rump bright greenish yellow, and this colour extends high up on the back to the interscapulary region. The adult male has the rump only as bright as in the young bird, but this tint does not extend at all to the back. The female has the rump tinged with yellowish, this part being less bright than in the male.

The Black-naped Green Woodpecker is not uncommon in the forests surrounding the valley of Nepal, where it also breeds. I found it fairly common about Hetoura, in December.

174.—Chrysophlegma chlorolophus, *Vieill.*

Male, Sâl forest, December.—Length, 10·5; expanse, 17·1; wing, 5·5; tail, 4·5; tarsus, 0·9; bill from gape, 1·25; bill at front, 1·03; closed wings short of tail, 1·9.

Bill greenish yellow horny; culmen and tip dark plumbeous; gape and orbital skin plumbeous; irides carmine red. The tail is faintly cross barred.

Two males, not mature, Valley, August and September.—Length, 9·9 and 10·5; expanse, 16·6; wing, 5 and 5·2; tail, 3·6 and 3·8; tarsus, 0·8 and 0·9; bill from gape, 1·16 and 1·2; bill at front, 1·0; closed wings short of tail, 1·8 and 2·0.

Bill greenish horny, dusky above and at tip; orbital skin slaty plumbeous; irides crimson; feet and claws plumbeous greenish.

Female, Nimboatar, December.—Length, 11·1; expanse, 17·3; wing, 5·7; tail, 4·55; tarsus, 0·85; bill from gape, 1·2; bill at front, 1·05; closed wings short of tail, 2·0.

Bill yellowish green horny; culmen and tip dark plumbeous; irides carmine red; orbital skin bluish plumbeous; tarsi dingy green; toes greenish leaden; claws grey horny.

The Lesser Yellow-naped Woodpecker is tolerably common in the Valley, where it breeds. It is usually found in tree forests about the lower parts of the surrounding hills, but occasionally visits the wooded knolls in the central part of the valley. It was not uncommon in the lower hills, Dun and Sâl forest in winter.

178.—Micropternus phaioceps, *Bly.*

Female, Valley, September.—Length, 10·1; expanse, 17; wing, 5·3; tail, 3·3; tarsus, 0·85; bill from gape, 1·2; bill at front, 1·0; nostril to tip of bill, 0·75; breadth of bill at gape, 0·5; length of foot, 2·2; closed wings short of tail, 2·0; weight, 4 ozs.

Bill black, the basal two-thirds of the lower mandible grey horny; orbital skin dark plumbeous; irides brown; feet dingy leaden; claws dusky plumbeous.

This Rufous Woodpecker seemed to be rather rare in the valley of Nepal. The only specimen secured was shot in the Residency grounds.

186.—Vivia innominata, *Burt.*

Male, June.—Length, 4·05; expanse, 7·25; wing, 2·3; tail, 1·3; tarsus, 0·5; bill from gape, 0·5; bill at front, 0·45; closed wings short of tail, 0·65.

Bill plumbeous black; irides brown; feet darkish plumbeous.

Two females, May and June.—Length, 3·9 to 4; wing, 2·3 to 2·35; tail, 1·3 to 1·35; tarsus, 0·45 to 0·5; bill from gape, 0·5 to 0·52; bill at front, 0·4; closed wings short of tail, 0·65.

Bill plumbeous, or dusky plumbeous, lighter below; irides brown; feet plumbeous; claws dusky.

The fifth primary is longest, the sixth nearly equal to it, and the fourth shorter than the sixth. The tongue can be protruded over an inch beyond the tip of the bill. The male has the forehead green, and above this there is a rufous brown bar which is spotted with black; the female has no chestnut on the head.

The Speckled Piculet is fairly common in woods in the central part of the valley of Nepal, and in some parts of the forests at the foot of the hills. I found it quite a tree bird, and never noticed it in tangled brushwood, &c., as mentioned by Jerdon.

191.—Megalæma marshallorum, *Swinh.*

Male, December.—Length, 12; expanse, 18; wing, 5·7; tail, 3·9; tarsus, 1·25; bill from gape, 2·1; bill at front, 1·5; closed wings short of tail, 2·8.

Bill yellow horny, greenish towards the tip; culmen from nares bluish black, darkest at tip; irides dark brown; feet dingy horny green; claws black.

Three females, December and May.—Length, 12·3 to 13·4; expanse, 18 to 19; wing, 5·45 to 5·53; tail, 3·85 to 4·2; tarsus, 1·2 to 1·3; bill from gape, 2·05 to 2·13; bill at front, 1·53 to 1·63; closed wing short of tail, 3 to 3·4.

Bill greenish yellow horny; the culmen from nostrils to tip black or dusky; irides deep brown; feet dingy pale green; claws slaty black.

In both sexes the head and nape are dark violet blue; the hind neck with the feathers conspicuously striated with pale yellow, forming a sort of half collar; the primaries are not blue-green as stated by Jerdon in his description: the first and

second primaries are wholly black; the rest are black, margined on the outer web with blue-green.

This fine Barbet is common in the valley of Nepal throughout the year. It inhabits the forest-clad hills that surround the valley, descending in winter to the foot of the hills, and ranging in summer to an elevation of over 7,000 feet. It was never found in the woods of the central part of the valley. Although it generally affects high trees, I have, on several occasions, found and shot it in low thick jungle, perched on bushes or bush trees. Its fine, plaintive call—*till-low, till-low, till-low, &c.*,—uttered by flocks in chorus, may be heard from a great distance, and is both striking and pleasant.

192.—Megalæma hodgsoni, *Bp.*

Two males, Hetoura, December.—Length, 11·3 to 11·35; expanse, 17·4 to 17·8; wing, 5·2; tail, 3·6 to 3·7; tarsus, 1·15 to 1·2; bill from gape, 1·73 to 1·75; bill at front, 1·25 to 1·32; closed wings short of tail, 2·5 to 2·7.

Two females, Hetoura, December.—Length, 11·6 to 11·7; expanse, 18·2 to 18·3; wing, 5·5; tail, 3·65 to 3·8; tarsus, 1·2 to 1·3; bill from gape, 1·75 to 1·8; bill at front, 1·3 to 1·35; closed wings short of tail, 2·5 to 2·6.

Bill horny yellow; orbits deep yellow; irides brown, deep brown, and reddish brown; feet fleshy yellow; claws dusky, brown at bases.

The bill is very large and powerful, and the birds generally of large size and robust form. In both sexes the chin and throat are rather dark earthy brown, with a slight coppery tinge on the chin; forehead brown; feathers of hind head, sides of neck, breast, and upper abdomen, pale yellowish fulvous, with well-defined dark brown edgings.

I have carefully compared these four specimens with the fine series of green Barbets in Mr. Hume's museum, and they certainly do not agree with the species he calls *hodgsoni*, or any other in his collection. My birds are distinct from the species figured in Marshall's monograph under the name of *hodgsoni*. A specimen from Kaladungi, labelled *hodgsoni*, in Mr. Hume's museum, agrees exactly with the figure in the monograph of the Barbets in having the throat white, and the forehead whitish; and certainly, the Nepal birds differ as greatly from that specimen as *M. inornata* does from *caniceps*. My specimens, I believe, represent the true *hodgsoni*, as Bonaparte's type seems to have come from Nepal. In the Consp. Gen. Av., I., p. 144, I find the following:—"19, *Megalaimus hodgsoni*, Bp. Mus. Lugd. ex Nepal. Similis sequentis et valde major;" the species which follow this being *caniceps, viridis, &c.*, as far as

I remember. If my surmise be correct, then the western form, which has hitherto been called *hodgsoni*, will require a new name, and it is to be hoped that some one will examine Bonaparte's type and settle the question.

Hodgson's Barbet is common in the Dun, about Hetoura, and in parts of the Sâl forest; but it does not ascend the hills to any great height, nor is it ever found in the valley of Nepal. I found it very common at Hetoura in December, flitting about the edge of the forest, but more especially haunting the huge Semal trees (*Bombax, ?heptapylla*). There the Barbet was busy feeding out of the flowers of these Silk-cotton trees, going about from blossom to blossom in the most deliberate and attentive manner. Half a dozen shots fired from the road below, hardly sufficed to divert its attention for a moment from its pressing occupation; or at most, when a bird fell to my shot, the others would fly off quietly to the jungle, and return again to their favourite tree in about five minutes. The birds were at such a height that no shot smaller than No. 3 had the slightest effect on them, and I had to bring one down with a wire cartridge.

195.—Megalæma asiatica, *Lath.*

Dimensions of sixteen fresh specimens.—Length, 8·5 to 9·75; expanse, 13 to 14·2; wing, 4 to 4·4; tail, 2·8 to 3·3; tarsus, 0·85 to 1·1; bill from gape, 1·2 to 1·5; bill at front, 0·93 to 1·04; closed wings short of tail, 1·3 to 2·7.

Bill greenish yellow horny, black above; margins of eyelids orange; irides hazel brown, brown, and reddish brown; feet dingy green; claws horny black.

The red rictal spot is always distinct in fresh specimens. A nestling, obtained in the valley on the 20th June, had the wing 3·45, bill at front 0·7, and the bar across the top of the head dark blue. A male, shot on the 13th September, with the wing 4·4, had also the band on the top of the head dark blue, and there was just the faintest trace of the red rictal spot.

The Blue-throated Barbet is exceedingly common in the valley of Nepal throughout the year, frequenting the tree-covered hill slopes up to an elevation of not more than about 6,000 feet, and in all the woods of the central part of the valley. It was common in the Nawakot district in November, and was heard or obtained at Chitlang, Nimboatar, Hetoura, Bichiakoh and in the plains. Its call and habits are very well known.

196.—Megalæma franklini, *Bly.*

Male, Valley, June.—Length, 9·3; expanse, 13·8; wing, 4·15; tail, 3·2; tarsus, 1·0; bill from gape, 1·3; bill at front, 0·85; closed wings short of tail, 2·5.

Bill black, grey horny at base; irides brown; feet green; claws dusky.

Female? Valley, June.—Length, 9·2; expanse, 13·2; wing, 3·9; tail, 3; tarsus, 0·9; bill from gape, 1·3; bill at front, 0·95; closed wings short of tail, 2·5.

Bill blackish horny, plumbeous at base; irides brown; feet dirty greenish; claws dusky plumbeous.

In both these specimens the first and second quills are entirely black; third, fourth, fifth, and sixth edged with blue externally. A narrow blue band fringes the black and crimson on the nape; the ear-coverts are not 'pale brown,' &c., but with the patch on side of neck and front of throat silvery white.

This Barbet does not appear to be common in the valley of Nepal. It was found there in forests on the hills surrounding the valley, at elevations of from 5,000 to nearly 8,000 feet; usually on large trees, but occasionally in dense bushes near the forest paths, feeding on berries. It was never observed in any of the woods in the middle of the valley.

197.—Xantholæma hæmacephala, *Müll.*

Male, November.—Length, 6·0; tail, 2·0; tarsus, 0·75; bill from gape, 0·95; bill at front, 0·65.

Bill horny black, slaty at base; orbital skin purple; feet coral red; claws black.

Female, June.—Length, 6·1; expanse, 10·5; wing, 3·15; tail, 1·6; tarsus, 0·7; bill from gape, 1·0; bill at front, 0·7; closed wings short of tail, 0·9.

Bill black; base of lower mandible grey horny; irides brown; orbital skin dull crimson; feet coral red; claws black.

Two young birds, 19th June.—Length, 5·2 and 6·0; expanse, 10·2 and 10·4; wing, 3; tail, 1·5 and 1·8; tarsus, 0·75; bill from gape, 0·82 and 0·9; bill at front, 0·6 and 0·63; closed wings short of tail, 0·9 and 1·0.

Bill black, pale grey at base; orbital skin dark grey; irides dark brown; feet pale red fleshy; claws black.

These four specimens were obtained in the valley. The male is much more brightly colored than the female; the young birds have the colours much duller than in adults, and want the crimson of the head and breast as well as the black band across the head.

The Crimson-breasted Barbet is not common in the valley of Nepal, and is found there only in the central woods, where it breeds.

199.—Cuculus canorus, *Lin.*

Two males in adult plumage, July and September.—Length, 13·5; expanse, 24 and 24·6; wing, 8·3 and 9·0; tail 7·1 and

7·4; tarsus, 0·8; bill from gape, 1·25 and 1·3; bill at front, 0·8 and 0·9; closed wings short of tail, 2·3.

Bill black above and at tip; middle of lower mandible green horny; base of lower mandible yellow; gape and margins of eyelids bright yellow; irides golden yellow; eyelids pale grey; feet yellow; claws brown and fleshy yellow.

Eight young males, July, August and September.—Length, 12·6 to 14; expanse, 22·1 to 24·4; wing, 7·8 to 8·8; tail, 6·8 to 7·4; tarsus, 0·7 to 0·9; bill from gape, 1·15 to 1·3; bill at front, 0·76 to 0·87; closed wings short of tail, 2 to 2·5.

Bill dusky above, black at tip, and base of lower mandible greenish horny; gape orange or yellow; lower eyelid plumbeous or grey; margin of eyelids greenish yellow; irides light greyish, and yellowish-brown, or creamy buff; feet pale yellow to buff yellow; claws horny yellow.

Six females in adult plumage, April, May, and August.—Length, 12·4 to 13·2; expanse, 22·1 to 24; wing, 8·05 to 8·6; tail, 6·8 to 7·3; tarsus, 0·8 to 0·9; bill from gape, 1·15 to 1·25; bill at front, 0·78 to 0·9; closed wings short of end of tail, 1·5 to 2·1.

Bill black above and at tip; middle of lower mandible greenish horny; base of lower mandible yellow horny; gape and margins of eyelids yellow; irides yellow or brownish yellow; feet buffy yellow, dusky, and yellowish horny.

Five young females, July, August, and September.—Length, 11·75 to 13·1; expanse, 20·6 to 23·2; wing, 7·4 to 8·2; tail, 6·2 to 7·2; tarsus, 0·8 to 0·9; bill from gape, 1·14 to 1·24; bill at front, 0·76 to 0·9; closed wings short of tail, 1·4 to 2·6.

Interior of mouth bright orange; irides yellowish brown and creamy buff. Colours of soft parts generally as in the young male.

The Common Cuckoo is found in great numbers in the Valley of Nepal (where all the above specimens were obtained) during six months of the year, from April to October. The earliest date on which it was noticed was the 31st March, and the latest about the first week in October. It frequents the central woods, and the forests on the hill sides up to 6,000 feet, rarely ascending to about 7,000 feet. It lays in May and June, generally selecting the nests of *Pratincola indica* and *P. ferrea*, and occasionally I think that of *Pomatorhinus erythrogenys*.

200.—Cuculus striatus, *Drap.*

Male, Adult, Valley, September.—Length, 11·9; expanse, 20·4; wing, 7·1; tail, 6·3; tarsus, 0·7; bill from gape, 1·15; bill at front, 0·86; closed wings short of tail, 2·1.

Irides light brown.

Female in hepatic phase of plumage, Valley, August.—Length, 11·2; expanse, 18·5; wing, 6·7; tail, 6·0; tarsus, 0·7; bill from gape, 1·15; bill at front, 0·77; closed wings short of tail, 2·25.

Upper mandible black; lower mandible greenish horny, yellowish at base; mouth and gape bright orange; margins of eyelids deep yellow; irides brownish golden; feet ochre yellow.

Female, in a very dark stage of plumage representing Hodgson's saturatus, *Valley, July.*—Length, 11·7; expanse, 19·3; wing, 6·9; tail, 6·3; tarsus, 0·76; bill from gape, 1·15; bill at front, 0·74; closed wings short of tail, 2·5.

Upper mandible black, lower green horny, dusky at tip; gape orange; edge of eyelids green; irides greyish brown; feet pale waxy yellow; claws brownish yellow, horny.

The Himalayan Cuckoo is fairly common in the valley from May to September, but is found in far fewer numbers than the common species. I do not know whether it resides there permanently or not, but my impression is, that it migrates to lower levels in the cold season. In May and June it is found in tree forests, at elevations of over 7,000 feet, frequenting the tops of high trees and continually uttering its peculiar call, which the Parbatias render as "Kaifal pakyo" (the Kaiphal fruit is ripe)—a very good imitation of the cry. In August and September the birds (principally young ones) are found in the woods of the central part of the valley.

205.—Hierococcyx varius, *Vahl.*

Male, Adult, Bhawanipur (Plains), December.—Length, 13·5; expanse, 23·1; wing, 8; tail, 7·7; tarsus, 0·9; bill from gape, 1·2; bill at front, 0·85; closed wings short of tail, 3·3.

Irides golden yellow; feet pale yellow; claws yellowish horny.

Female, Adult, Valley, February.—Length, 13; expanse, 22·5; wing, 7·65; tail, 7·2; tarsus, 1·0; bill from gape, 1·25; bill at front, 0·85; closed wings short of tail, 2·9; weight, 4 ozs.

Bill green horny; culmen and anterior part of upper mandible black; margin of eyelids gamboge yellow; irides orange; feet yellow; claws yellowish horny.

Male, Young, Valley, April.—Length, 14; expanse, 23·5; wing, 8; tail, 7·9; tarsus, 1; bill from gape, 1·3; bill at front, 0·95; closed wings short of tail, 3·3.

Bill black on culmen and at tip, the rest green; iris brown yellow; feet yellow.

In this specimen the whole upper parts, including the outer webs of the primaries and secondaries, are barred with rufous,

the bars being faint on the interscapulary region; but some new quills, not fully grown, are unbanded pure grey on the outer webs, as in the adult.

This Hawk-Cuckoo is found in small numbers in the valley of Nepal, where it breeds. In May it was often heard in the Sheopuri forest at an elevation of about 7,000 feet, and it was observed on several occasions, in the central woods, before and after the breeding season. It seems to come into the valley earlier than the other Cuckoos, as I shot a specimen in the Residency grounds on the 3rd of February. It was common in the plains of Nepal, in topes, during December. Its call and habits are well known.

207.—Hierococcyx sparveroides, *Vig.*

Female, Young, Valley, August.—Length, 14·3; expanse, 23·6; wing, 8·3; tail, 7·5; tarsus, 1; bill from gape, 1·4; bill at front, 0·96; closed wings short of tail, 3·1.

Bill black above, green horny below; gape and margin of eyelids yellow; irides brown; feet and claws yellow; the bill is very large and powerful, above dark brown, banded with rufous; large longitudinal drops of black on the throat and breast, and arrow-head bars on the flanks and abdomen.

Male, Young, Valley, August.—Length, 14·3; expanse, 24; wing, 8·65; tail, 8·2; tarsus, 1·0; bill from gape, 1·25; bill at front, 0·85; closed wings short of tail, 3·2.

Upper mandible black, lower greenish; gape and eyelids greenish yellow; iris brown; feet yellow. Above dark, bronzed brown, inconspicuously banded with rufous; tail crossed with five dark-brown bars, the interspaces rufous; below, the longitudinal dark drops on the neck and breast are narrower than in the first specimen, and the flanks and abdomen are transversely barred with dusky; the bill is very small for this species, so much smaller than in the first bird, which was of much the same age, as to make one doubt whether this specimen is really *sparverioides*. I do not know what else it can be; the large size, general style of colouration, and the very broad bars on the tail preclude the possibility of referring it to *varius*, and *à fortiori* it cannot be *nisicolor*.

The Large Hawk-Cuckoo is a seasonal visitant to the valley of Nepal, arriving about the beginning of April and descending to the plains and low warm valleys in September. It frequents the forests on the hills round the valley during its breeding season, and in August the young birds are found in the central woods in small numbers.

213.—Coccystes coromandus, *Lin.*

Male, Valley, May.—Length, 16; expanse, 19; wing, 6·4; tail, 10; tarsus, 1·1; bill from gape, 1·4; bill at front, 1·05; closed wings short of tail, 6·9; crest, 1·7.

Bill black; feet bluish plumbeous; the soles yellow; claws dusky; the head is darker than the rest of the upper parts, the forehead alone being without gloss; the tail feathers, except the uropygials, are narrowly margined with whitish at the tips; chin and throat fulvous; flanks pale ferruginous, and the thigh-coverts smoky; lower tail-coverts dull black, with whitish margins to the tips of the tail feathers.

The Red-winged Crested Cuckoo appears to be rare in the valley of Nepal, but breeds there, I believe. The only specimen obtained was shot at Godaveri, at the foot of the hills bounding the valley to the south.

214.—Eudynamys honorata, *Lin.*

Three adult males, Valley, May.—Length, 14·8 to 15·8; expanse, 23·3 to 23·7; wing, 7·7; tail, 7·4 to 8·25; tarsus, 1·2 to 1·3; bill from gape, 1·4 to 1·5; bill at front, 1·05 to 1·2; nostril to tip of upper mandible, 0·78 to 0·8; closed wings short of tail, 3·7 to 4·3.

Bill pale greenish horny, blackish about the nostrils, and base of lower mandible plumbeous; gape and orbital skin pinkish; irides bright scarlet and crimson; feet bluish plumbeous, the soles yellow; claws dusky horny or blackish.

Two adult females, Valley, May.—Length 15 and 15·5; expanse, 22·4 and 23·6; wing, 7·2 and 7·6; tail, 7·3 and 7·9; tarsus, 1·2 and 1·25; bill from gape, 1·4; bill at front, 1·0; nostril to tip of upper mandible, 0·73 and 0·75; closed wings short of tail, 4·1 and 4·3.

Bill greenish horny, dark at the nostrils, and plumbeous at base below; gape pinkish; irides crimson; feet bluish or greenish plumbeous; the soles dirty yellowish; claws dusky horny.

Female, immature, Valley, July.—Length, 13·6; expanse, 21·5; wing, 6·8; tail, 6·5; tarsus, 1·25; bill from gape, 1·35; bill at front, 0·98; nostril to tip of upper mandible, 0·65; closed wings short of tail 3·8.

Bill black; the tip of the lower mandible light horny; irides dark brown; feet light bluish plumbeous; claws dusky; the bars on the wings, tail, and abdomen are rufescent, on the other parts they are white; the hind head darker than the rest of the upper surface.

The males have the tail faintly, but regularly, barred. A pair of nestlings, taken from a nest of *Corvus splendens* in July,

differed in plumage nearly as much as the adult male does from the adult female. One of these little birds had the upper surface dark bottle-green, and measured length, 7; wing, 3·4; the other was dark brown above, barred with rufous. It appears, therefore, that in this species the sexes differ in colour *ab initio*.

I have carefully compared my five adult Koils with a large series of *malayana* and *honorata*, and they unquestionably belong to the latter species. This might be gathered from the dimensions alone, but I may add that in the Nepal birds the bill is much smaller than in specimens of *malayana*, being equal in size to the bills of examples from Deesa, and actually smaller than in some specimens from Etawah and the Laccadives.

I mention this because Nepal has lately often been given as a habitat for *malayana*; that species may occur in some part of the Nepal territories, but certainly the Koil of the Nepal Valley is *honorata*.

The Indian Koil is a seasonal visitor to the valley, arriving about the end of March or beginning of April, and departing in September. It frequents the woods of the central part of the valley, gardens, groves, and trees, near houses and villages; in April, May, and June its well-known cry may be constantly heard. The eggs are laid in the nest of the common crow (*C. splendens*), as in the plains of India.

215.—Rhopodytes tristis, *Less.*

Three females, Valley, May, July, and August.—Length, 20·2 to 23·4; expanse, 18·5 to 19·2; tail, 13 to 16·5; tarsus, 1·5 to 1·6; bill from gape, 1·5 to 1·6; bill at front, 1·2 to 1·25; closed wings short of tail, 10·2 to 13·5; wing, 6·3 to 6·8.

Bill horny green, darker towards the base; orbital skin dark red; irides dark or brownish red; feet greenish plumbeous; claws horny black.

I found this species in the valley of Nepal, in small numbers, from April to September. It frequented tree bushes in thickish jungle at the foot of the hills.

221.—Taccocua infuscata, *Bly.*

Nawakot District, November.—Length, 17·7; expanse, 18·6; wing, 6·4; tail, 10·35; tarsus, 1·75; bill from gape, 1·4; bill at front, 1·05; closed wings short of tail, 7·0.

Bill cherry red; tip yellow; margin of maxilla black at middle; gape and orbits dusky purplish; mouth black; irides dark brown; feet slaty; claws brown-black. This specimen agrees well with Jerdon's description.

This species was tolerably common in the Trisul Valley, Nawakot district, in November. It was usually observed feeding on the ground, in the midst of bushes near the path, and when alarmed it flew up into the nearest tree. It does not occur in the Nepal Valley.

229.—Æthopyga nipalensis, *Hodgs.*

Eighteen males, February, May, June.—Length, 5·3 to 5·9; expanse, 6·1 to 6·65; wing, 2·0 to 2·2; tail, 2·6 to 3·0; tarsus, 0·6 to 0·65; bill from gape, 0·78 to 0·9; bill at front, 0·6 to 0·8; closed wings short of tail, 1·7 to 2·05.

Bill black; gape fleshy or yellowish fleshy; irides dark brown; feet dark brown horny to brownish black; claws brownish black.

Three females, February and June.—Length, 4·1 to 4·7; expanse, 5·9 to 6·1; wing, 1·9 to 1·97; tail, 1·7 to 1·73; tarsus, 0·6; bill from gape, 0·7 to 0·8; bill at front, 0·66 to 0·68; closed wings short of tail, 0·95 to 1·0.

Bill black; gape orange; irides dark brown; feet dark horny brown; claws dusky.

This beautiful Honey-Sucker is common in the forest-covered hills round the valley of Nepal throughout the year. In summer it is only found in tree forests, at elevations of from 7,000 to 8,000 feet, but in winter it descends occasionally to the foot of the hills, though it never visits the central part of the valley. All my specimens were shot in the Sheopuri forest, and there the Honey-Sucker was always plentiful in the rather open parts of the forest, hunting about actively in small trees, by the side of the path, constantly moving, and sometimes hovering over a bush or between the leaves.

234.—Cinnyris asiatica, *Lath.*

Two males, Valley, June.—Length, 4·4 and 4·5; expanse, 7 and 7·1; wing, 2·25; tail, 1·45 and 1·5; tarsus, 0·5 and 0·57; bill from gape, 0·75 and 0·76; bill at front, 0·65 and 0·7; closed wings short of tail, 0·5 and 0·6.

Bill, feet and claws black; irides dark brown and reddish dark brown. Breeding plumage: no trace of white tips to tail feathers; gloss on upper parts more green than purple.

Male, Valley, August.—Length, 4·3; expanse, 6·9; wing, 2·2; tail, 1·6; tarsus, 0·6; bill from gape, 0·78; bill at front, 0·68; closed wings short of tail, 0·5.

Bill black, brownish at base of lower mandible; gape buff fleshy; irides blackish brown; eyelid plumbeous; feet and claws black. In the *curucaria* stage, with a glossy stripe from chin to vent, and glossy patches on the upper surface of the

wings and partly on the tail, but not on the head or elsewhere; tail feathers narrowly margined with white at the tip.

Four females, Valley, June to August.—Length, 4 to 4·4; expanse, 6·7 to 6·8; wing, 2·1 to 2·2; tail, 1·3 to 1·45; tarsus, 0·54 to 0·6; bill from gape, 0·7 to 0·78; bill at front, 0·6 to 0·65; closed wings short of tail, 0·45 to 0·7.

Bill black, brownish at base below; gape orange or buff fleshy; irides dark brown; feet and claws black; a white spot on the tip of the outer tail feather, the white extending a little up the outer web. A young bird, obtained on the 12th June, was earthy brown above, yellowish fulvous beneath.

This Honey-Sucker is a summer visitant to the valley, and is fairly common there from May to September, frequenting gardens, hedges, and cultivated ground fringed with bushes or small trees. On the 26th May, a nest of this species was found in a Hibiscus bush in the Residency Garden. The nest was a beautiful fairy-like structure, composed chiefly of soft grass, flowers and bits of leaves; it was pear-shaped, with an oval entrance at the side, and had a cup-shaped roof which formed a portico over the mouth of the nest. In this two eggs were found, slightly incubated, which measured 0·65 by 0·47 and 0·64 by 0·45. The ground colour was greenish white, with a few irregular spots of reddish brown at the large end of the eggs, the small end and greater portion of the surface being free from markings.

240.—Piprisoma agile, *Tick.*

Two males, Valley, July and August.—Length, 4; expanse, 7·5 and 7·85; wing, 2·45 and 2·51; tail, 1·34 and 1·4; tarsus, 0·52 and 0·55; bill from gape, 0·40 and 0·43; bill at front, 0·29 and 0·3; closed wing short of tail, 0·5 and 0·55.

Bill bluish plumbeous, dusky at tip; irides brownish red and scarlet; feet dark plumbeous; claws blackish.

This interesting little bird was not uncommon in the central part of the Nepal Valley, from May to September. I can confirm Jerdon's statement that it frequents high branches of trees in parties or small flocks; such were its habits about the end of July. Mr. Hodgson did not obtain this species in Nepal; at least it is not entered in either edition of the B. M. Catalogue or his collection, and there is no figure of it amongst his drawings. This is the more remarkable as I shot both my specimens in the Residency grounds. There can be no doubt as to the identification, for although I named the specimens at first merely from Jerdon's description, I have since compared them with numerous examples in Mr. Hume's collection.

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241.—Myzanthe ignipectus, *Hodgs.*

Three adult males, July and August.—Length, 3·2 to 3·3; expanse, 5·7 to 6·2; wing, 1·8 to 1·9; tail, 0·9 to 1·03; tarsus, 0·5 to 0·55; bill from gape, 0·4 to 0·42; bill at front, 0·3 to 0·32; closed wings short of end of tail, 0·45 to 0·5.

Bill black; irides brown or blackish brown; feet and claws dull or brownish black; the black stripe down the middle of the abdomen is very well marked; the wings do not reach to the end of the tail, as stated by Jerdon.

Female, February.—Length, 2·9; expanse, 5·1; wing, 1·8; tail, 0·95; tarsus, 0·43; bill at front, 0·3; closed wings short of tail, 0·35.

Bill black; base of lower mandible plumbeous; feet and claws blackish; above olive green, brightest on the rump and the head greyish; chin whitish; lower surface a faintly buff yellow, greenish on the sides; axillaries and lower wing-coverts pure white.

Male, immature, 6th August.—Length, 3·2; wing, 1·9; tail, 0·95; tarsus, 0·49; bill from gape, 0·42; bill at front, 0·33; closed wings short of tail, 0·35.

Bill horny black; base of lower mandible greyish; irides dark; feet and claws dull black; glossy dark green on mid-back and shoulders; a small red spot appearing on the breast; otherwise as in the female.

Male, young, 1st August.—Length, 3·3; expanse, 6·2; wing, 1·9; tail, 1·0; tarsus, 0·5; bill from gape, 0·4; bill at front, 0·3; closed wings short of tail, 0·4.

Bill black, grey at base of lower mandible; gape orange; irides blackish; feet and claws dull slaty; the head partially glossy dark green; breast pale orange; otherwise as in the female.

Male, 3rd July, Valley.—Length, 3·1; expanse, 5 5; wing, 1·8; tail, 0·9; tarsus, 0·5; closed wings short of tail, 0·55.

Bill plumbeous dusky; tarsi plumbeous; toes blackish plumbeous; claws black. I am very doubtful about the identification of this specimen. It closely resembles *Myzanthe ignipectus, female*, but I sexed the bird myself, and found the testes so large as to show that it was breeding. The bill is imperfect, but the base, which remains, is dusky leaden. I failed to identify it with any species of *Dicæum* in Mr. Hume's collection.

The Fire-breasted Flower-pecker is tolerably common in the valley of Nepal, and apparently is a permanent resident. It frequents gardens, groves, and tree bushes on the hill sides, and is social in winter.

247.—Tichodroma muraria, *Lin.*

Male.—Length, 6·3; expanse, 11·8; wing, 4; tail, 2·3; tarsus, 0·87; bill from gape, 1·2; bill at front, 0·93; closed wings short of tail, 0·45. Spots on the primaries pure white.

Female.—Length, 6·7; expanse, 12; wing, 4·1; tail, 2·3; tarsus, 0·9; bill from gape, 1·3; bill at front, 1·0; closed wing short of tail, 0·4.

Bill and claws black; feet black, tinged with brown; irides dark brown. The sixth and seventh primaries have the spot on the inner webs golden yellow. Mr. Hodgson gives a figure of this species in which the yellow spots on the wings are prominently shown, but he says :—"Golden drops of alars often wanting."

The Wall-Creeper was found in winter only, in the Nawakot district, the valley of Nepal, and the Markhu Valley, but not in any great numbers. It frequented the rocky sides of streams, and boulders along their course.

248.—Sitta himalayensis, *Jard. and Selb.*

Three males, May, June and August.—Length, 4·55 to 4·75; expanse, 8·6 to 9·1; wing, 2·8 to 2·9; tail, 1·4 to 1·5; tarsus, 0·65 to 0·7; bill from gape, 0·65 to 0·74; bill at front, 0·5 to 0·53; closed wings short of tail, 0·2 to 0·3; foot, length, 1·35 to 1·4, breadth, 0·95; mid-toe and claw, 0·85.

Bill black above and at tip; lower mandible and base of upper bluish grey horny; irides dark brown; feet dingy greenish brown; the soles yellowish green; claws dusky.

Three females, February, May and June.—Length, 4·6 to 4·85; expanse, 8·7 to 9·0; wing, 2·77 to 2·9; tail, 1·45 to 1·5; tarsus, 0·6 to 0·73; bill from gape, 0·65 to 0·7; bill at front, 0·49 to 0·52; closed wings short of tail, 0·1 to 0·35.

Bill bluish black horny; base of culmen and of lower mandible grey horny; irides dark brown; feet dingy brownish, the soles greenish yellow.

Three young birds, May and June.—Length, 4·15 to 4·5; wing, 2·5 to 2·6; bill from gape, 0·6; bill at front, 0·4.

Upper mandible dusky; lower mandible and gape horny yellow; irides blackish; feet dingy fleshy, paler rufescent below, but otherwise not differing from adult female.

The White-tailed Nuthatch is common on the hills round the Nepal Valley, from 5,000 to 9,000 feet, throughout the year, but never seems to stray into the central woods. In summer it was abundant in the forest on the Sheopuri Ridge; it was usually seen in parties on small, rather young trees, and was very bold and active.

251.—Sitta cinnamomeiventris, *Bly.*

Two males, September and October.—Length, 5·8 and 6·1; expanse, 9·6 and 10·5; wing, 3·3 and 3·35; tail, 1·8; tarsus, 0·66 and 0·7; bill from gape, 1·0; bill at front, 0·76; closed wings short of tail, 0·5 and 0·6.

Bill black; base of lower mandible and of culmen bluish grey horny; irides hazel brown; feet dingy plumbeous.

Female, July.—Length, 5·3; expanse, 10·9; wing, 3·4; tail, 1·8; tarsus, 0·7; bill from gape, 0·9; bill at front, 0·75; closed wings short of tail, 0·6.

Bill horny black; base of culmen and basal two-thirds of lower mandible horny white; irides brown; gape yellow; feet greenish plumbeous, the soles greenish yellow; claws plumbeous horny.

Two young birds, June and August.—Length, 5·1 and 5·6; expanse, 9·5 and 10; wing, 3·2 and 3·3; tail, 1·8; tarsus, 0·7; bill from gape, 0·9 and 0·95; bill at front, 0·74 and 0·75; closed wings short of tail, 0·4 and 0·5.

One of these specimens has the whole upper surface undulated with rusty and blackish.

This Nuthatch is common in the central woods of the Valley, and is usually seen in small parties running up and down the trunks of bare trees. It is more shy in its habits than *S. himalayensis.*

254.—Upupa epops, *Lin.*

Two males, Valley, April.—Length, 12 and 12·5; expanse, 18 and 18 2; wing, 5·9 and 6·0; tail, 4· 5 and 4·3; tarsus, 0·8 and 0·9; bill from gape, 2·4 and 2·5; bill at front, 2·25 and 2·3; nostril to point of bill, 1·9 and 2·0; closed wings short of tail, 1·9 and 2·0.

Two females, Valley, September.—Length, 11·4 and 11·6; expanse, 17·4 and 18; wing, 5·75; tail, 3·9 and 4·1; tarsus, 0·8 and 0·85; bill from gape, 2·3 and 2·4; bill at front, 2·05; nostril to tip of bill, 1·83 and 1·88; weight, 2 ozs.

Bill horny black; base of upper mandible livid, and base of lower mandible greyish horny; gape whitish fleshy; eyelid plumbeous; irides dark brown; feet dusky; claws blackish horny.

The European Hoopoe is a rare bird in the valley of Nepal, a few pairs only being, now and then, seen there in winter. About the beginning of April it passes through the valley, probably to its breeding places further north, and returns about the beginning of September on its way to the plains. It was found fairly common, in December, at Bichiakoh, and in the Tarai, and plains.

258.—Lanius tephronotus, *Vig.*

Female, Chitlang, December.—Length, 9·6; expanse, 13·1; wing, 4·25; tail, 5·05; tarsus, 1·15; bill from gape, 1·03; bill at front, 0·65; closed wings short of tail, 3·1.

Bill black; base of lower mandible yellowish horny; irides dark brown; feet and claws black; above dark bluish grey; the rump, tail-coverts, flanks and lower abdomen ferruginous; a narrow black band across the forehead, passing through the eyes and expanding on the ears to form a large patch on sides of neck.

Four immature birds, of which two are males, Valley, February, March, and October.—Length, 8·8 to 10; expanse, 12 to 13; wing, 3·8 to 4·2; tail, 4·3 to 5·2; tarsus, 1·1 to 1·15; bill from gape, 0·93 to 1·0; bill at front, 0·6 to 0·65; closed wings short of tail, 3·9 to 4·1; weight, 1·5 to 1·7 ozs.

Bill black; base of lower mandible pale grey horny; irides very dark brown; feet dusky plumbeous or blackish; claws horny black. All washed with brown above, the tail brownish, and the lower surface, from the neck downwards, more or less strongly undulated; in one specimen the upper tail-coverts are also faintly barred; and in another (10th October), with undulations on the hind head, nape, scapulars, rump and upper tail-coverts, as well as on the lower surface.

The Grey-backed Shrike is common in the Valley of Nepal from about the end of September to the middle of March; it is the only Shrike found in the Valley during the winter season, but it migrates further north to breed. In December it was fairly common about Chitlang, which is higher than Kathmandu, but seemed to be entirely replaced in the Hetoura Dun by *L. nigriceps*. It frequents gardens, groves, and cultivated ground, perching on bushes and hedges, and small bare trees. It has a very harsh chattering note, louder than that of *nigriceps*, and appears to be most noisy towards sunset, when its cry would often lead one to suppose that the bird was being strangled in the clutches of a raptor.

259.—Lanius nigriceps, *Frankl.*

Three males, July and September (Valley), December (Hetoura).—Length, 8·8 to 9·9; expanse, 11·2 to 12; wing, 3·75 to 3·9; tail, 4·2 to 5·2; tarsus, 1·0 to 1·1; bill from gape, 0·9 to 0·95; bill at front, 0·63 to 0·67; closed wings short of tail, 3 to 3·8.

Bill, feet and claws black; irides deep brown.

Three females, Valley, March, June and August.—Length, 9·4 to 9·5; expanse, 11·5 to 11·7; wing, 3·55 to 3·65; tail,

4·6 to 4·9; tarsus, 1·1 to 1·15; bill from gape, 0·9 to 0·95; bill at front, 0·58 to 0·67; closed wings short of tail, 3·1 to 3·4.

Bill black; base of lower mandible slaty horny; irides dark brown; feet leaden black.

Three young males, Valley, July, August and September.—Length, 8·6 to 9·4; expanse, 11·3 to 11·8; wing, 3·55 to 3·65; tail, 4·3 to 4·6; tarsus, 1·0 to 1·1; bill from gape, 0·9 to 0·93; bill at front, 0·57 to 0·65; closed wings short of tail, 3·1 to 3·2.

Upper mandible brownish black; the lower dusky at tip, dark grey in centre, and livid fleshy at base; gape white or yellow fleshy; irides blackish brown; lower eyelid bluish grey; feet and claws black.

The parts which in the adults are pure, are in these young birds dull and brownish, and the colours generally are paler and less well marked; the head above is spotted and barred, and there are a few bars on the back and upper tail-coverts, but the whole lower surface is, in all cases, without undulations. All the specimens, both adult and young, show a prominent white bar on the wing.

The Black-headed Shrike is common in the Nepal Valley from the beginning of March to the end of September, and migrates to the Dun, Tarai, and plains in winter. In December it is common about Hetoura and Bichiakoh. It frequents scrub jungle, euphorbia and other hedges near hamlets, and small trees on the borders of woods. It has the usual habits of the tribe, perching on the tops of bushes and trees, and uttering a harsh chattering cry. It breeds on the hill sides of the valley, usually in places where there is no tree forest, and not uncommonly in the neighbourhood of hamlets. Several nests were obtained in May and June; these were large cup-shaped structures, composed of grass roots, fibres, and fine seed down intermixed. The egg cavity was circular, lined with fine grass stems, about four inches in diameter, and two inches deep in the middle. The usual number of eggs is five; the ground colour pale greenish white, boldly blotched and spotted with olive marks in an irregular zone round the large end. A clutch of five eggs taken on the 14th June gave the following dimensions:—0·94 to 0·97 in length, and 0·65 to 0·7 in breadth.

265.—Tephrodornis pondicerianus, *Gm.*

Male, December.—Length, 7·1; expanse, 11; wing, 3·55; tail, 2·9; tarsus, 0·7; bill from gape, 1·03; bill at front, 0·7; closed wings short of tail, 1·5.

Bill dusky; the lower mandible brownish at base; irides brown; gape whitish fleshy.

I found this species tolerably common in the Sâl forest between Bichiakoh and Semrabasa in December. It frequented bush trees by the road-side, was gregarious, and had a rather pleasant note.

? 267*bis*.—Hemipus capitalis, *McClell.*

Bhimphedi, December.—Length, 5·5; expanse, 7·7; wing, 2·5; tail, 2·6; tarsus, 0·5; bill from gape, 0·72; bill at front, 0·45; closed wings short of tail, 1·5.

Bill black; the head is black, glossed green, and very sharply and distinctly marked off from the brown back.

I found this species only once in Nepal, a little below Bhimphedi, in December. It was gregarious, and frequented bushes growing near the road. Unfortunately only one specimen of this species was secured, and it could not be sexed.

269.—Volvocivora melaschista, *Hodgs.*

(1.) *Female, Immature, May.*—Length, 9·5; expanse, 14·6; wing, 4·8; tail, 4·9; tarsus, 0·8; bill from gape, 1·0; bill at front, 0·65; closed wings short of tail, 2·2.

Bill, feet and claws black. Wings dusky, with a faint greenish gloss on the outer webs of the feathers; a long white spot on the inner webs of the third, fourth, fifth and sixth quills; uropygials greyish dusky, blackish towards the tips; next pair of rectrices blackish throughout, with a faint greenish gloss on the outer webs; the rest of the tail feathers tipped with white; lower breast, abdomen, flanks and thighs with faint blackish spots on the feathers, giving the appearance of regular transverse bars; lower tail-coverts greyish white, strongly barred with black.

(2.) *Male, young, July.*—Length, 9·3; expanse, 14·2; wing, 4·65; tail, 4·6; tarsus, 0·85; bill from gape, 0·95; bill at front, 0·65; closed wings short of tail, 2·65.

Bill black; irides hazel; feet dull plumbeous black; claws black. Darker above than (1); the quills with conspicuous pale fringes; white and black bars on the top of the head and slightly on the back; chin, throat, breast and under wing-coverts barred with white; no white spot on the quills; lateral tail feathers white tipped.

(3.) *Male, Adult, August.*—Wings and tail imperfect as the bird was moulting; the wings glossed green like a Drongo, and no pale fringes to the quills; the lateral tail feathers with a white terminal spot.

(4.) *Female, Immature, August.*—Length, 9·5; tail, 4·7; tarsus, 0·82; bill from gape, 1·0; bill at front, 0·6.

Bill horny black; irides lake red; lower eyelid plumbeous grey; feet dull plumbeous, the soles yellowish; claws dusky. Upper surface uniform, the underparts faintly barred; a circle of white feathers round the eye; the white spots nearly worn off the lateral tail feathers; new growing quills without any white spots, but the third and fourth primaries, which are old feathers not yet shed, have a large white spot on the inner webs.

(5.) *Male, Young, August.*—Length, 8·8; expanse, 13·7; wing, 4·55; tail, 4·3; tarsus, 0·85; bill from gape, 0·97; bill at front, 0·59; closed wings short of tail, 2·3.

Bill horny black; tip and base of lower mandible pale; irides brown; interior of mouth yellow; feet dull plumbeous; claws dusky. A pure white ring round the eye; profusely spotted and barred on the upper surface, including the wing-coverts, and the quills margined with white; whole lower surface conspicuously cross barred; white spots on the quills, and on the ends of the lateral tail feathers.

(6.) *Female, Immature, September.*—Length, 9·5; expanse, 14·4; wing, 4·7; tail, 4·5; tarsus, 0·9; bill from gape, 1·0; bill at front, 0·65; closed wings short of tail, 2·2.

Irides reddish brown; plumage very similar in all respects to (1); outer tail feathers 1·2 shorter than the uropygials.

The Dark-grey Cuckoo Shrike is tolerably common in the valley of Nepal from April to about the end of September. It frequents the central woods of the Valley, and ascends the surrounding hills to an elevation of about 6,000 feet. It is generally seen in pairs, in large trees, hopping about actively from branch to branch, and often uttering a pleasant note; it is not at all shy, and its flight seems to be rather slow and short.

270.—Graucalus macii, *Less.*

(1.) *Female, Nepal Valley, November.*—Length, 12·6; expanse, 21·75; wing, 7·15; tail, 6·2; tarsus, 1·05; bill from gape, 1·45; bill at front, 1·0; closed wings short of end of tail, 2·9; weight, 4 ozs.

Bill blackish; irides brownish red; feet blackish plumbeous; claws black. Chin to abdomen transversely barred; a few rust-coloured smears on the chin, throat, and breast, and also faintly on the crown, back and upper tail-coverts; a faint dusky lorial streak.

(2.) *Male, Nawakot, November.*—Length, 12·8; expanse, 20·5; wing, 7·15; tail, 6·0; tarsus, 1·0; bill from gape, 1·53; bill at front, 0·98; closed wings short of tail, 2·5.

Bill black; gape yellowish; irides reddish brown; feet dingy plumbeous. Chin, throat, and upper breast almost unbarred; no

rusty smears on any part; darker above than (1), the pale rump contrasting more, and the lorial streak more marked.

(3.) *Male, Bichiakoh, December.*—Length, 12·8; expanse, 22·1; wing, 7·35; tail, 6·0; tarsus, 1·0; bill from gape, 1·5; bill at front, 0·93; closed wings short of tail, 2·25.

Bill black; irides red-brown; feet and claws dusky. Rather darker above than (2); no bars whatever on lower surface, except some faint ones on the under tail-coverts; chin, throat, and abdomen uniform grey, paling on the middle of the belly, and vent white; nostrils and lores black; the tail faintly barred, a character hardly indicated in (1) and (2).

The Large Cuckoo Shrike is common in winter in the Nawakot District, and about Hetoura and Bichiakoh. To the Nepal Valley it appears to be a mere straggler, as it was only observed there from about the end of October to the middle of November, and those birds were, I imagine, taking a short cut from the Nawakot district to the plains, instead of following the course of the Trisul Ganga River. Jerdon's account of its habits is very accurate; but the only notes I heard it utter were sweet and musical.

271.—Pericrocotus speciosus, *Lath.*

Three young males, Valley, August and November.—Length, 8·3 to 8·6; expanse, 11·6 to 12·3; wing, 4; tail, 4·15 to 4·35; tarsus, 0·65 to 0·8; bill from gape, 0·97 to 1·0; bill at front, 0·56 to 0·6; closed wings short of tail, 2·2 to 2·95; weight 1 to 1·25 ozs.

Bill, feet, and claws black; irides dark brown. All in female garb, but the lateral tail feathers are distinctly flame coloured; in two specimens (August) the head is undulated—each feather having a narrow dark subterminal bar followed by a whitish fringe.

Two females, August and November.—Length, 8·5 and 8·6; expanse, 11·65 and 12·2; wing, 3·8 and 4·0; tail, 4·2 and 4·3; tarsus, 0·7 and 0·76; bill from gape, 1·0; bill at front, 0·5 and 0·6; closed wings short of tail, 2·4 and 2·6.

Bill, feet and claws black; irides dark brown. In all these five specimens there is no yellow on the outer web of the three first primaries.

The Large Minivet is not common in the Valley of Nepal, but certainly breeds there. It was found in the central woods in flocks, and frequented high trees. I also obtained it on the hills round the Nawakot district, high up in November.

273.—Pericrocotus brevirostris, *Vig.*

Ten adult males.—Length, 7·1 to 8·1; expanse, 10·2 to 11; wing, 3·4 to 3·75; tail, 3·9 to 4·65; tarsus, 0·55 to 0·65; bill

from gape, 0·7 to 0·77; bill at front, 0·38 to 0·47; closed wings short of tail, 2·1 to 2·8. In all these specimens there is a narrow reddish line on the margin of the outer web of the first primary at its base, and a more or less pronounced short red line on the margin of the outer web of the fourth primary at the bulge.

Nine adult females.—Length, 7·3 to 7·6; expanse, 10 to 10·6; wing, 3·35 to 3·6; tail, 3·6 to 4·35; tarsus, 0·6 to 0·65; bill from gape, 0·7 to 0·72; bill at front, 0·4 to 0·47; closed wings short of tail, 2·3 to 2·65.

All these have a yellowish white line on the outer margin of the first primary at the base, and either no, or only a faint trace of a similarly coloured hair line on the outer margin of the fourth primary at the bulge.

Male, Valley, June.—Length, 7·8; expanse, 10·5; wing, 3·4; tail, 4·35; tarsus, 0·6; bill from gape, 0·72; closed wings short of tail, 2·75.

This example is in the plumage of the adult female, but has a faint tinge of red on the throat, lower breast and upper part of the abdomen, a scarlet spot on the rump, and a rosy red spot on both webs of the eighth and ninth quills.

Two immature males, Valley, August and September.—Length, 7·7 to 7·85; expanse, 10·4 and 10·3; wing, 3·55 and 3·6; tail, 4·4; tarsus, 0·6; bill from gape, 0·7 and 0·72; bill at front, 0·45; closed wings short of tail, 2·8 and 2·9.

Plumage as in adult female.

Three young males, Valley, July.—Length, 7·5 to 7·9; expanse, 10 to 10·8; wing, 3·4 to 3·65; tail, 4·2 to 4·5; tarsus, 0·6; bill from gape, 0·7 to 0·75; bill at front, 0·43 to 0·5; closed wings short of tail, 2·6 to 3·0; weight, 0·75 ozs.

Bill black, brownish at base below; lower eyelid grey, its margin with a line of white feathers; irides very dark brown; feet and claws black. Upper surface brownish grey, with a slight greenish tinge, each feather having a dark subterminal bar, and below this a white fringe, thus giving the upper surface a strongly undulated appearance; the upper tail-coverts olive yellow, most of the feathers also barred; elsewhere coloured as in the adult female.

The Short-billed Minivet is very common in the valley of Nepal throughout the year, and is also abundant, in winter, in the Nawakot district and from Bhimphedi to Hetoura. In the valley it is usually seen in the central woods, in parties or flocks, on high trees; it is very erratic in its movements, and is sometimes found in great numbers, for a day or two, in a place where it will not afterwards be seen for weeks. When flocks of this species frequent Pine trees (*P. longifolia*) it is a pretty sight to watch their bright plumage glowing in the sun as they

move about in the dark green trees. During the breeding season (May and June) this Minivet is found in forests on the hills up to an elevation of 7,500 feet. A nest was found in the Sheopuri forest on the 17th June, which contained two very young birds, and one egg.

278.—Buchanga atra, *Herm.*

Six males.—Length, 11·7 to 12·6; expanse, 17 to 18·6; wing, 5·9 to 6·2; tail, 6·3 to 7·1; tarsus, 0·85 to 0·9; bill from gape, 1·05 to 1·13; bill at front, 0·75 to 0·8; closed wings short of tail, 3·7 to 4·1; weight, 2·25 ozs.

Bill, feet and claws black; irides brown and deep red.

Three females.—Length, 11·7 to 12; expanse, 16 to 17·5; wing, 5·5 to 6·0; tail, 6·3 to 7·0; tarsus 0·85 to 0·9; bill from gape, 1·05 to 1·1; bill at front, 0·8; closed wings short of tail, 3·25 to 3·9.

In all these specimens the white rictal marks are very prominent, and measure in length from 0·1 to 0·2.

The Common Kingcrow abounds in the Nepal Valley during the whole year, and is common in winter in the Nawakot district, the lower hills, and the plains. In the valley it is very tame and familiar, frequents the skirts of woods, gardens, hedges and fields, and often perches on the backs of cattle. It not only descends to the ground to capture its prey, but very commonly stands on the ground, both in fields and on banks. During the winter, when the fields are mostly bare, it certainly passes the greater part of the day, when not on the wing, standing on some bank or little mound; and from thence sallies along every now and then to seize an insect, and again takes up a position on a clod of earth. In "Nests and Eggs" Mr. Hume doubts whether this species ever breeds at any elevation exceeding 2,000 feet: in Nepal it certainly breeds freely at elevations of from 4,000 to 5,000 feet. Three nests were taken in the Valley in May and June; these contained each three or four pure white eggs.

280.—Buchanga longicaudata, *A. Hay.*

Four males, April and September.—Length, 11·3 to 11·9; expanse, 16 to 16·6; wing, 5·55 to 5·6; tail, 6·5 to 6·8; tarsus, 0·65 to 0·75; bill from gape, 1·1 to 1·16; bill at front, 0·9; closed wings short of tail, 3·4 to 4·1.

Two females, April.—Length, 11·2 and 11·3; expanse, 15·8 and 16; wing, 5·4 and 5·5; tail, 6·4; tarsus, 0·73 and 0·76; bill from gape, 1·1 and 1·15; bill at front, 0·9; closed wings short of tail, 4.

Bill, feet and claws black; irides brownish red, blood red and crimson.

These specimens belong to typical *longicaudata*, and do not at all approach *pyrrhops*. Setting aside all other differences, this species may be distinguished at a glance from *atra* (*albiricta*, Hodgs.) by its much more feeble feet; the tarsi and toes are shorter and markedly more slender; the claws much smaller, and the hind claw decidedly more curved.

Three young females, July and August.—Length, 9·0 to 10; expanse, 15 to 15·5; wing, 4·7 to 5; tail, 3·8 to 4·2; tarsus, 0·65 to 0·7; bill from gape, 1·0; bill at front, 0·8 to 0·83; closed wings short of tail, 1·2 to 2·0.

Bill black, grey horny at extreme tip; gape pale yellow fleshy; irides blackish to blood red; feet dusky; claws black.

Male, Sheopuri Ridge, 20th May.—Length, 11·5; wing, 5·5; outer tail feathers, 6·35; middle tail feathers, 3·73; tarsus, 0·7.

This example differs from all the others by having more gloss on the breast, by its slender form, and by the smaller feet—the tarsi being more slender and the hind claw markedly smaller; in other respects it closely resembles *longicaudata* and not *pyrrhops*. It may possibly fall under *B. himalayana*, Tytler.

The Long-tailed Drongo is a migratory species in the Nepal Valley, arriving about the middle of March and retiring to lower and warmer regions towards the end of September; the earliest date on which it was observed in the valley was on the 10th March. It frequents the central woods, perching high up on the trees, and never descends to the ground. It is especially active towards dusk, when the bats begin hunting; obviously, I think, because their food is, generally speaking, the same, and that many insects are then flying about. This species lays in the valley in May and June, the nest being placed high up in trees, often in *Pinus longifolia*. The eggs are usually four in number, fairly glossy, in shape moderate ovals, smaller at one end. The ground colour is pinkish white, with a tinge of buff, sparingly spotted and blotched with brownish red, chiefly at the large end, where the marks tend to coalesce, so as to form an irregular incomplete ring. Four eggs taken on the 28th May measured, 1·09 to 1·12 in length, and 0·75 to 0·76 in breadth. The race which I identify with *himalayana* was found, in very small numbers, on the summit of Sheopuri, at an elevation of about 7,500 feet, and was breeding at the time I shot my specimen, *viz.*, the 20th May.

281.—Buchanga cœrulescens, *Lin.*

Male—Hetoura, December.—Length, 10·5; expanse, 16·5; wing, 5·4; tail, 5·35; tarsus, 0·75; bill from gape, 1·1; bill at front, 0·75; closed wings short of tail, 2·5.

Bill, feet and claws black; irides fine red.

The White-bellied Drongo is common in the Dun about Hetoura, in winter, but is not found in the Nepal Valley. It frequents open forest and clearings, and catches its prey on the wing, always returning to perch on a tree after it has seized an insect. This species is not entered in either of the B. M. Catalogue of Mr. Hodgson's collections, but he figures it, I believe, in his drawings.

282.—Chaptia ænea, *Vieill.*

Male, Nimboatar (Lower Hills), December.—Length, 9·1; expanse, 14·6; wing, 4·93; tail, 4·85; tarsus, 0·6; bill from gape, 1·0; bill at front, 0·65; closed wings short of tail, 2·25.

Bill, feet and claws black; irides deep slightly reddish brown.

Two females, Nimboatar, December.—Length, 9·0 and 9·1; expanse, 13·7 and 13·8; wing, 4·6 and 4·7; tail, 4·55 and 4·65; tarsus, 0·6; bill from gape, 0·96 and 1·0; bill at front, 0·65; closed wings short of tail, 2·15 and 2·3.

Bill, feet and claws black; irides reddish brown. The fourth quill is longest; the third 0·15 to 0·2 shorter; the fifth 0·05 longer than the third and 0·3 longer than the sixth.

The Bronzed Drongo is common, in winter, from Bhimphedi to Hetoura, in the tree forests. It frequents high trees, captures its prey on the wing, and its note is more subdued and pleasanter than that of *Buchanga*. It was never observed in the valley of Nepal, but Mr. Hodgson seems to have obtained it there in summer.

284.—Dissemurus grandis, *Gould.*

This species does not occur in the valley of Nepal. I had a specimen in confinement, captured in the lower hills, which was very tame and most amusing. It imitated the notes of many birds and mammals, and was altogether such a pet, that I could never persuade myself to convert it into an ornithological specimen, and take its measurements.

286.—Chibia hottentotta, *Lin.*

Two males, Nimboatar, December.—Length, 12·6 and 12·8; expanse, 20·3 and 20·7; wing, 6·73 and 6·9; tail, 6·0 and 6·1; tarsus, 1·0; bill from gape, 1·64 and 1·7; bill at front, 1·4; closed wings short of tail, 2·5 and 2·6.

Three females, Nimboatar and Hetoura, December.—Length, 12·15 to 12·7; expanse, 19·5 to 20; wing, 6·45 to 6·67; tail, 5·6 to 5·9; tarsus, 0·95 to 1·0; bill from gape, 1·55 to 1·7; bill at front, 1·23 to 1·27; closed wings short of tail, 2·35 to 2·6.

Bill horny black; gape fleshy; irides lightish brown, dark brown and reddish brown; feet and claws black.

This fine species is common in winter from Bhimphedi to Semrabasa, associating in small parties and constantly uttering a creaking sort of note. In December it abounded on the Semal (*Bombax sp.*) trees, which were then in full flower, and it was a curious sight to see such a bird playing the part of a Honey-sucker. As the birds flitted about, from flower to flower, they uttered their subdued metallic clanging note; and whenever a *Chaptia ænea* settled on the silk-cotton tree, to share in the feast, a *Chibia* would at once fly to the spot and drive off the small intruder; more respect was, however, shown to *Megalæma hodgsoni*, which was commonly seen on the same tree. The Hair-crested Drongo was never seen in the Nepal Valley.

288.—Muscipeta paradisi, *Lin.*

Eight males, Valley, April, May and June.—Length, 18 to 20·5; expanse, 10·3 to 11·5; wing, 3·55 to 3·8; tail, 13·6 to 16·2; tarsus, 0·62 to 0·75; bill from gape, 1·05 to 1·1; bill at front, 0·68 to 0·7; length of crest, 1·1 to 1·3; length of terminal white portion of shafts of uropygials, 5·0 to 8·4.

Bill, gape and margin of eyelids, cobalt blue, the tip of the bill darker; irides dark brown; feet plumbeous blue; claws dusky. The outer web of the primaries is not wholly white, but is margined more or less broadly with white, and a portion next the shaft is black. In seven specimens there is no trace of a black margin to the edges of the uropygials; in one specimen there is a hair line of black on the edges of the basal half of the central tail feathers.

In one bird, shot on the 5th April, the rump and upper tail-coverts are sullied with chestnut. These eight males are all long-tailed white birds.

Male, Valley, 22nd June.—Length, 9·1; expanse, 11·2; wing, 3·65; tail, 4·75; tarsus, 0·64; bill from gape, 1·05; bill at front, 0·63; closed wings short of tail, 3·2.

This is a short-tailed white male bird; it was noticed almost daily for nearly a month tending its young, and had then very long white central tail feathers. It was shot as soon as it dropped its long uropygials.

Male, Immature, Valley, 16th May.—Length, 8·5; expanse, 10·8; wing, 3·5; tail, 4·1; tarsus, 0·7; bill from gape, 1·1; bill at front, 0·7; closed wings short of tail, 2·75.

A chestnut short-tailed bird, resembling the females presently to be noted, but having the nape darker, a metallic black band at the base of the foreneck, and well marked black shafts to the tertiaries.

Six females, Valley, April and May.—Length, 8·0 to 8·5; expanse, 10·2 to 10·9; wing, 3·5 to 3·6; tail, 4·1 to 4·5; tar-

sus, 0·65 to 0·7; bill from gape, 1·0 to 1·1; bill at front, 0·6 to 0·65; closed wings short of tail, 2·5 to 2·7.

Bill, gape and margin of eyelids cobalt blue, the tip of the bill dusky; irides dark brown; feet plumbeous blue, with a slight greenish tinge.

All adult specimens, in chestnut plumage, and of course, short-tailed birds; in all the inner webs of the quills are dusky, and the tertiaries are not black shafted.

Two young birds, Valley, July.—Length, 7·3 and 7·4; expanse, 10·2 and 10·4; wing, 3·3 and 3·4; tail, 3·7 and 3·8; tarsus, 0·6 and 0·65; bill from gape, 0·95; bill at front, 0·58; closed wings short of tail, 2·1 and 2·3.

Bill blackish or leaden; the base of the lower mandible brownish grey; irides dark, or blackish brown; gape yellowish fleshy; feet bluish plumbeous; claws dusky. Chestnut short-tailed birds, differing from the adult female only in having the shafts of the tertiaries black and a merely rudimentary crest.

The above eighteen specimens are typical *paradisi;* I would draw special attention to this point, as Jerdon states that *affinis* replaces *paradisi* "in the sub-Himalayan regions of Nepal," &c. In both additions of the B. M. Catalogue of Mr. Hodgson's collections, the specimens of Paradise Flycatcher obtained by that naturalist in Nepal are correctly referred to *paradisi*.

The Paradise Flycatcher is very common in the Nepal Valley from the beginning of April to about the end of September; in the latter month, nearly all the birds to be seen are young ones.

It frequents the central woods, gardens, and hedges, but does not ascend the hills. In its habits it is very restless, continually flitting about, from tree to tree, or along hedges, and it occasionally descends to the ground to seize its prey. I once shot a long-tailed white bird while it was on the ground, in the Nil Barahi wood. During the breeding season the male bird has a very pleasing melodious whistle, but the note of alarm is a short sharp chirp frequently repeated. In the valley it breeds in May and June, both sexes sharing in the incubation and feeding of the young. Many nests of this species were seen and taken in woods and gardens, but the account given in "Nests and Eggs" is so complete, that I need not take up space here by entering into long descriptions; I must note however, that although the usual number of eggs laid is four, I have twice met with five eggs in a nest. As to the interesting question of the plumage of the breeding birds I must say a few words. This Flycatcher was so abundant in the valley, breeding close to my house, where it could be observed from day to day, that I can confidently state that the male is a long-

tailed white bird, and the female a short-tailed chestnut one. I met with no exception to this rule, but some most competent observers have found long-tailed chestnut males breeding in other parts of India. Taking all the evidence, the following conclusions seem to be fairly justified:—(1) The young of both sexes are short-tailed chestnut birds with very slight crests. (2) The adult female is a short-tailed chestnut bird. (3) The young male of the second year is a long-tailed chestnut bird, and often breeds in that garb, and possibly even breeds before it has acquired the long uropygials. (4) The change of colour is always from chestnut to white, and a male having once acquired white plumage never again changes to chestnut. (5) The fully adult breeding male is a long-tailed white bird. (6) The long uropygials, in the white bird at least, are certainly seasonal, being shed when the breeding season is over.

294.—Chelidorhynx hypoxantha, *Bly.*

Male, Valley, March.—Length, 4·8; expanse, 6·5; wing, 2·23; tail, 2·4; tarsus, 0·65; bill from gape, 0·45; bill at front, 0·3; closed wings short of tail, 1·1.

Bill black above; the lower mandible entirely yellow; irides brown.

Three females, Nawakot district, November.—Length, 4·55 to 4·65; expanse, 6·4 to 6·5; wing, 2·1 to 2·14; tail, 2·13 to 2·23; tarsus, 0·56 to 0·6; bill from gape, 0·4; bill at front, 0·25; closed wings short of tail, 1·25.

Upper mandible black, lower yellowish horny; irides blackish brown; gape orange; feet brownish.

The Yellow-bellied Fantail is common throughout the Nawakot district in winter, frequenting orchards and trees by the roadside. In the Nepal Valley it was only obtained in March, when it was found about the thorny hedges round the Residency grounds.

295.—Culicicapa ceylonensis, *Sws.*

Twelve specimens, Valley and Nawakot district, February to December.—Length, 4·4 to 5·3; expanse, 7 to 7·8; wing, 2·25 to 2·6; tail, 2·1 to 2·4; tarsus, 0·5 to 0·55; bill from gape, 0·48 to 0·55; bill at front, 0·3 to 0·42; closed wings short of tail, 1·0 to 1·25.

Bill dusky or black above, below horny brown, and the base of lower mandible yellowish; irides dark brown; feet orange or dingy reddish.

This Flycatcher is exceedingly common in the central woods of the Nepal Valley throughout the year; and is abundant in

the Nawakot district, and the woods of the lower hills in winter.

297.—Alseonax latirostris, *Raffl.* (A. terricolor, *Hodgs.*)

(1). *Eight specimens, Valley, April to August.*—Length, 4·75 to 5·4; expanse, 8·5 to 8·8; wings, 2·75 to 2·9; tail, 2 to 2·3; tarsus, 0·55 to 0·6; bill from gape, 0·65 to 0·7; bill at front, 0·4 to 0·5; closed wings short of tail, 0·8 to 1·1.

Upper mandible black; lower yellowish horny at base, faintly greenish about the middle and dusky at tip; gape fleshy yellow; irides dark brown; feet dusky or brownish black; claws black; the margins of the eyelids are satiny white. The colour of the plumage is precisely the same as in specimens from Travancore and Madras, but the examples from Southern India seem to have the bill shorter and broader at the base than my specimens and others from the Himalayas, *e.g.*, Dharmsala.

(2.) *An immature bird, Valley, 1st August.*—Length, 5·2; expanse, 8·7; wing, 2·8; tail, 2·2; tarsus, 0·6; bill from gape, 0·67; bill at front, 0·41; closed wings short of tail, 1·1.

Bill dusky brown, the base of lower mandible yellowish horny; gape yellow; irides brownish black; feet plumbeous black. The wing-coverts and secondaries have conspicuous pale rufescent margins, and the tail feathers and secondaries are also tipped with the same colour; numerous pale spots on the nape and head; the lower surface not spotted.

(3.) *Two young birds, Valley, 23rd July.*—Length, 4·4; expanse, 8 and 8·1; wing, 2·45 and 2·6; tail, 1·65 and 1·7; tarsus, 0·56 and 0·57; bill from gape, 0·6 and 0·63; bill at front, 0·38 and 0·4; closed wings short of tail, 0·8 and 0·9.

Bill dusky, the basal part of lower mandible yellowish horny; gape fleshy yellowish; irides black; feet plumbeous, the soles yellowish fleshy; claws brown horny, pale at the tips. Profusely spotted, except on the chin and flanks, with tawny or pale rufescent; the head streaked; the coverts and secondaries broadly margined with pale rufous, and the quills and tail feathers tipped with the same colour; the chin white and the flanks greyish white; the lineated head recalls the parallel stage of *Pratincola ferrea* and *P. indica*. These two birds had left the nest, but were unable to fly.

This Flycatcher is common in the central woods of the Nepal Valley from the middle of April to September, but migrates to lower levels in winter. It is social, except during the breeding season; frequents the lower branches of trees very commonly, and darts out every now and then to seize an insect, according to the manner of its tribe; occasionally one bird may

be seen pursuing another from place to place, apparently in the course of altercation. Its cry consists of a single plaintive sort of note, slowly repeated, and the alarm note is a short sharp sound, something like "*tchick, tchick,*" &c. It certainly breeds in the valley, and probably lays in June, but I did not secure any nests.

301.—Glaucomyias melanops, *Vig.*

Six adult birds, Valley, May, August and September.—Length, 6·0 to 6·6 ; expanse, 10 to 10·4 ; wing, 3·2 to 3·45 ; tail, 2·8 to 3·2 ; tarsus, 0·65 to 0·7 ; bill from gape, 0·64 to 0·73 ; bill at front, 0·35 to 0·45 ; closed wings short of tail, 1·4 to 1·6.

Bill, feet and claws black ; irides very dark brown.

Four young birds, Valley, August.—Length, 5·8 to 6·2 ; expanse, 9·6 to 10 ; wing, 3·15 to 3·2 ; tail, 2·6 to 2·9 ; tarsus, 0·6 to 0·65 ; bill from gape, 0·63 to 0·65 ; bill at front, 0·34 to 0·37 ; closed wings short of tail, 1·2 to 1·4.

Bill horny black, the base of lower mandible brown ; gape yellow ; irides blackish brown ; feet dusky leaden ; claws horny black. In one specimen the sides of head and whole lower surface, except the wing lining and axillaries, are profusely spotted with fulvous, the spots on the throat and breast inclining to golden colour ; in another there are whitish spots on the nape and mid-back, the lower surface being spotted with fulvous ; in the third example the breast and abdomen are unspotted ; and the fourth has only the neck, breast, and a line down the abdomen thickly covered with white spots.

The Verditer Flycatcher is tolerably common in the valley of Nepal, generally frequenting the forests at the foot of the hills, but straying into the central woods from time to time. It ascends the hill to nearly 8,000 feet in the breeding season. It was not observed in the valley in winter.

304.—Cyornis rubeculoides, *Vig.*

Three males, Valley, May and June.—Length, 5·4 to 5·9 ; expanse, 8·5 to 9·2 ; wing, 2·8 to 2·9 ; tail, 2·15 to 2·4 ; tarsus, 0·7 ; bill from gape, 0·7 ; bill at front, 0·47 to 0·5 ; closed wings short of tail, 1·0 to 1·25.

Bill black ; irides dark brown ; feet brown or dusky. Identical with specimens from Sikim, with which I have compared them.

The Blue-throated Redbreast is a seasonal visitant to the Nepal Valley, where it breeds. It was only noticed in the central woods and was not at all common.

315.—Niltava macgrigoriæ, *Burt.*

Male, Valley, 15th February.—Length, 5·0; expanse, 7·85; wing, 2·6; tail, 2·2; tarsus, 0·7; bill from gape, 0·6; bill at front, 0·28; closed wings short of tail, 1·0.

Bill black; irides dark brown; feet and claws dusky.

Male, Nimboatar (Lower Hills), December.—Length, 4·7; expanse, 8·0; wing, 2·6; tail, 2; tarsus, 0·7; closed wings short of tail, 1·0.

Bill black; irides deep brown; feet dusky.

I give a short description of these specimens, as Dr. Jerdon's account does not seem quite satisfactory:—Lores and a band across forehead jet black; front of head, neck spot, rump, and upper tail-coverts brilliant ultramarine or cobalt; rest of upper surface, including both webs of the uropygials and the outer webs of the rest of the tail feathers, rich dark purple blue; wings and inner webs of the tail feathers (except the centrals) blackish or dusky; the wing feathers more or less edged externally with a duller blue than the colour of the upper parts; chin, foreneck, and upper breast dark violet blue; abdomen fuliginous ashy, paling to white towards the vent; wing lining and lower tail-coverts pure white.

This lovely species appears to be rare in the valley of Nepal, but more common in the glen of the Rapti, about Nimboatar, in winter. It was generally seen in rather dense jungle close to rivers, or about thick bushes fringing streams at the foot of the hills, and it was solitary in winter.

319.—Siphia strophiata, *Hodgs.*

Three males, Valley, March and May.—Length, 5·2 to 5·4; expanse, 8·8 to 9; wing, 2·8 to 3·05; tail, 2·3 to 2·35; tarsus, 0·8 to 0·85; bill from gape, 0·62 to 0·65; bill at front, 0·33 to 0·36; closed wings short of tail, 0·9.

Bill black; irides dark brown; feet dark horny brown; claws black.

Female, Valley, May.—Length, 5·0; expanse, 8·25; wing, 2·7; tail, 2·2; bill from gape, 0·65; bill at front, 0·35; closed wings short of tail, 0·95.

Bill black; gape fleshy whitish; irides dark brown; feet dingy brownish. This specimen differs from the males in being browner above, with the frontal band narrower; and the colours of the under surface are less intense.

The Orange-gorgeted Flycatcher is not common in the Nepal Valley. I obtained it in March, in the thorny rose-hedges, about the Residency grounds; and towards the end of May it was found on the Sheopuri Ridge, at about 7,000 feet, solitary

or in pairs, in thick small-tree forest where the ground was very damp.

319 *bis.*—Siphia rufigularis, *Sp. Nov.*

Female, Sheopuri Ridge, 21st May.—Length, 4·8; expanse, 8·3; wing, 2·65; tail, 2·0; bill from gape, 0·65; bill at front, 0·35; closed wings short of tail, 0·8.

Bill black; irides dark brown; feet livid fleshy; the soles yellow; claws livid horny.

A narrow band across the forehead; the lores, cheeks, and sides of neck pure bluish grey; upper surface rich olive; the head darker and tinged with brown, and the rump more bright and slightly washed with rufous; quills rufous brown on the outer webs, the inner webs black, narrowly margined with fulvous; tail with the uropygials black, the rest of the tail feathers white at the base for about half their length (increasing in extent from the outermost feathers), black at the terminal ends, the black tips measuring from 0·7 to 1·0; the chin, throat, and upper breast, uniform bright orange rufous; the lower breast and flanks dingy olivaceous; middle of belly, vent and lower tail-coverts, albescent.

In this interesting specimen the bill, in size, shape and colour, is precisely the same as in *Siphia strophiata;* the upper surface (excepting the frontal band) and wings exactly resemble the same parts in *S. strophiata* female; the tail would do for either *Siphia* or *Erythrosterna;* the lower parts and sides of the head and neck are absolutely the same as in *Erythrosterna albicilla* in breeding plumage. The bird is a true *Siphia,* distinguishable at a glance from *strophiata* by the absence of the black chin and throat, and by having the lores and cheeks ashy grey instead of black; and it is certainly no stage of *S. erythaca.* Mr. Hume tells me that he has seen at least a hundred specimens of *S. strophiata* in all stages, but that he never met with a specimen at all like the one under consideration; but yet he considers that my bird is only an abnormal example of *strophiata,* principally, as I understand, because in the colour of the upper parts it so closely resembles that species, which normally exhibits a decided affinity for *Erythrosterna.* With all due deference for an opinion from such high authority, I must dissent from this view. The coloration of the under surface in my specimen is so well marked and sharply defined, that no countenance is given to the hypothesis of a *lusus naturæ;* while the fact that the colour of the upper parts is like that of *Siphia strophiata* cannot certainly be considered a proof that it is the same species, seeing that it differs so very materially in other respects.

I thought at one time that the bird under consideration might be referable to *Siphia hodgsoni*, Verreaux; but Mr. Hume (S. F., V., p. 137), relying on the description, measurements, and figure of that species, identifies it with *Siphia erythaca*. On the whole, I think, I am fairly justified in considering that my bird represents a new species; and I propose for it the name of *Siphia rufigularis*.

The Rusty-throated Siphia was only met with in the Sheopuri forest, in May, at an elevation of about 7,500 feet. It frequented bushes, and was not common.

321.—Siphia superciliaris, *Bly.*

Two males, Sheopuri Forest, May.—Length, 3·9 and 4·05; expanse, 6·85 and 6·9; wing, 2·3; tail, 1·7; tarsus, 0·75; bill from gape, 0·55; bill at front, 0·3; closed wings short of tail, 0·6.

Bill black; irides dark brown; feet dusky or livid fleshy.

This species was only obtained in the Sheopuri Forest, in May, at an elevation of about 7,000 feet. It was found, in small numbers, inhabiting rather close damp forest, in pairs, and allowed one to approach quite close to it without showing any sign of alarm. It frequented the lower branches usually, and often made a dart down from its perch to catch an insect, in true Flycatcher fashion.

323.—Erythrosterna albicilla, *Pall.*

Three males, October and February.—Length, 4·8 to 5·1; expanse, 7·8 to 8·1; wing, 2·73 to 2·8; tail, 2·2; tarsus, 0·7; bill from gape, 0·5 to 0·6; bill at front, 0·36 to 0·38; closed wings short of tail, 0·95 to 1·0.

Bill dusky or horny black; base of lower mandible grey horny; irides deep brown; feet and claws black. In these specimens there is no trace of rufous on the chin or throat.

Two males, 4th April.—Length, 4·8 and 4·9; expanse, 8·4; wing, 2·7 and 2·8; tail, 2·15; tarsus, 0·68 and 0·7; bill from gape, 0·59 and 0·6; bill at front, 0·35 and 0·36; closed wings short of tail, 0·9.

Bill horny black; base of lower mandible greyish; irides dark brown; feet brownish black. The chin and throat bright rusty rufous.

Two females, 8th and 9th April.—Length, 4·75 and 4·9; expanse, 8; wing, 2·6; tarsus, 0·7; bill from gape, 0·6; closed wings short of tail, 0·9.

Colors of soft parts as in the male; no trace of rusty on chin or throat.

This species was tolerably common in the central woods of the Nepal Valley from October to about the middle of April; I lost sight of it in the latter half of April. In the Residency grounds it frequented hedges and the lower branches of the pine trees, was very lively and active, and was usually seen in pairs, or small parties of four or five.

343.—Myiophoneus temmincki, *Vig.*

Two males, Valley, February and August.—Length, 13·5 and 13·7; expanse, 21·5 and 22; wing, 7·1 and 7·3; tail, 5·5 and 5·65; tarsus, 2 and 2·05; bill from gape, 1·55 and 1·63; bill at front, 0·93 and 1·17; closed wings short of tail, 2 and 2·8; weight, 6·5 and 7ozs.

Bill dull yellow; nostrils and along culmen to tip dusky or blackish; irides rich brown; feet shining black; claws horny black.

Two females, Pharphing, July, and Valley, August.—Length, 13·1; expanse, 20·8; wing, 6·8; tail, 5·2 to 5·25; tarsus, 2; bill from gape, 1·5 to 1·6; bill at front, 0·95 to 1·13; closed wings short of tail, 2·3; weight, 6 and 6·5ozs.

Bill yellow; the culmen and base of upper mandible brownish black; irides brown; feet and claws black. These four specimens differ from examples shot by me in Kashmir in the following points:—They are darker and more dull colored; the white spots on the wing-coverts are more minute and scanty; and the bill is markedly deeper and more powerful than in the western birds.

The Yellow-billed Whistling Thrush is a permanent resident in the Nepal Valley and at Pharphing; it occurs in small numbers only, about the streams as they issue from the hills, but, of course, is never seen in the central part of the valley. I also found it on some of the hill streams in descending to the Nawakot district, and it was common along the course of the Rapti, between Bhimphedi and Nimboatar, in winter. Its habits are thoroughly well known.

347.—Cinclus asiaticus, *Sws.*

The Brown Water Ouzel was observed in the Nawakot district in November, in the Markhu Valley in December, and on several occasions near the head waters of the Bishnumati River in the valley of Nepal: it was not at all abundant, and was always very shy. It is solitary in winter, and is generally seen either perching on a rock in the bed of the stream, or spinning along very rapidly close to the surface of the water; and it frequently utters a sharp shrill whistling cry.

351.—Cyanocinclus cyanus, *Lin.*

Male, Valley, February.—Length, 8·9; expanse, 14·8; wing, 4·9; tail, 3·55; tarsus, 1·1; bill from gape, 1·25; bill at front, 0·8; closed wings short of tail, 1·45.

Bill horny black; gape yellow; irides deep brown; feet and claws black. No trace of ferruginous or chestnut on any part of the plumage.

Female, Valley, November.—Length, 8·9; expanse, 14·3; wing, 4·75; tail, 3·5; tarsus, 1·05; bill from gape, 1·25; bill at front, 0·83; closed wings short of tail, 1·4.

Bill dusky; irides dark brown; feet and claws black. All the feathers of the upper surface edged with whitish; the chin whitey brown, and the vent and lower tail-coverts rufescent; not the slightest tinge of blue on any part.

The Blue Rock-Thrush is a winter visitant to the valley of Nepal, arriving in October and retiring in the early part of March. It was found in very small numbers, always solitary, on rocks or boulders near the foot of the hills; and was never seen in the central part of the valley.

352.—Petrophila erythrogastra, *Vig.*

Two males, February and May.—Length, 9·3 and 9·5; expanse, 15 and 15·2; wing, 4·9 and 4·95; tail, 4·2 and 4·3; tarsus, 1·03 and 1·05; bill from gape, 1·22 and 1·25; bill at front, 0·72 and 0·75; closed wings short of tail, 1·75 and 1·8.

Bill black; gape yellow; irides dark brown; feet vinous brown or black; claws blackish. In one specimen the feathers of the interscapulary region are narrowly edged with brownish, in the other (May) the lores, cheeks, sides of neck and interscapulary region are black, the latter faintly tinged bluish.

Two females, June.—Length, 8·9 and 9·2; expanse, 13·7; wing, 4·6; tail, 3·5 and 3·9; tarsus, 1·1; bill from gape, 1·1 and 1·2; bill at front, 0·75; closed wings short of tail, 1·8 and 1·9.

Bill dusky; mouth and gape yellow; irides brown; tarsi dark brown; the toes blackish.

The Chestnut-bellied Thrush is tolerably common on the hills round the Nepal Valley, where it breeds. It is usually seen in open parts of the forest, from 6,000 to nearly 8,000 feet, single or in pairs; it perches on bushes or trees and often feeds on the ground on sloping grassy plots.

353.—Petrophila cinclorhyncha, *Vig.*

Male, Valley, July.—Length, 7·6; expanse, 12·5; wing, 4·7; tail, 2·8; tarsus, 0·9; bill from gape, 1·1; bill at front, 0·73; closed wings short of tail, 0·9.

Bill brownish black; the gape bright yellow; tarsi dusky slaty; the toes brownish black; claws blackish horny; the back quite black.

Young male, Valley, 19th July.—Length, 7·5; expanse, 12·1; wing, 4·1; tail, 2·8; tarsus, 0·9; bill from gape, 1·05; bill at front, 0·7; closed wings short of tail, 1·1.

Bill dusky; base of lower mandible grey horny; gape and edge of eyelids yellow; feet dusky slaty; claws dusky horny. Shoulders and margins of quills and rectrices tinged with blue; a white wing spot; the upper tail-coverts bright ferruginous, lunated with dusky; whole rest of upper surface brownish black, profusely and closely spotted with white; the spots on the wing-coverts yellowish; under surface fulvescent, crossed with dark bars, except the lower tail-coverts, which are not barred.

The Blue-headed Chat-Thrush is found in the valley of Nepal on the hill sides only, and seems to frequent by preference little dry nullahs overgrown with bushes and small trees. It breeds in the valley, and is often caged for the sake of its fine song.

355.—Geocichla citrina, *Lath.*

Male, Valley, July.—Length, 8·7; expanse, 14·5; wing, 4·7; tail, 3·15; tarsus, 1·25; bill from gape, 2·1; bill at front, 0·8; closed wings short of tail, 1·5.

Bill horny black; base of lower mandible grey horny; tarsi very pale fleshy; toes pinkish fleshy; claws pale pinkish horny; the tail feathers, with the exception of the central pair, are faintly and regularly barred with black, the bars being most distinct on the inner webs.

This fine Thrush was found, in summer, on the hills round the valley, at an elevation little exceeding 5,000 feet; but it was not observed in winter. It usually frequents nullahs containing a dense growth of bushes and small chestnut trees, and it is a favourite cage-bird with the Nepalese.

356.—Geocichla unicolor, *Tick.*

Female, Valley, June.—Length, 8·7; expanse, 14·3; wing, 4·6; tail, 3·1; tarsus, 1·15; bill from gape, 1·03; bill at front, 0·75; closed wings short of tail, 1·3.

Bill yellow, with a few dusky cloudings; irides brown; eyelid greenish yellow; feet vivid orange yellow; claws yellowish horny. Ashy on the rump: the breast and sides of flanks dull pale olivaceous brown; the upper tail-coverts reach to within 1·5 of the end of the tail.

The Dusky Ground Thrush was found in small numbers only, in the Nepal Valley, in summer, when it breeds. It was

always noticed about the skirts of the central woods, often alighting on the ground and running along pretty quickly, and feeding in damp spots. Mr. Hodgson gives a good figure of the species in his drawings.

358.—Geocichla dissimilis, *Bly.*

Female, Sheopuri Forest, 18th May.—Length, 8; expanse, 12·9; wing, 4·2; tail, 3·15; tarsus, 1·0; bill from gape, 1·0; bill at front, 0·7; closed wings short of tail, 1·5.

Bill yellowish dusky; gape yellow; irides deep brown; feet fleshy yellow; claws horny yellow. The upper tail-coverts reach to within 1·15 of the end of the tail; the rectrices and upper tail-coverts are faintly cross-barred with dusky, and there is a naked spot behind the eye; the sides of the breast and flanks are bright ferruginous, the upper breast being spotted with dark brown. This specimen differs from my Nepal example of *unicolor* (which is also a female) in being smaller and more brown above, in the orbits and supercilium being buffy, in wanting the ashy rump, in having the bill broader at the base and not so deep as in *unicolor*, but most markedly in having the sides of the breast and flanks ferruginous instead of dull olive brown. It unquestionably belongs to the species figured in the *Ibis*, 1871, Plate VII, and there called by Dr. Jerdon *Geocichla dissimilis*. Amongst Mr. Hodgson's drawings there is also a plate of this species very similar to the one given in the *Ibis* in illustration of Dr. Jerdon's Supplementary Notes to the Birds of India. Mr. Hume has a specimen from Nynee Tal, labelled *dissimilis*, which exactly resembles the figure in the *Ibis* above referred to; but an examination of a series of *unicolor* in his collection leads one to doubt whether the females of *dissimilis* and *unicolor* can always be satisfactorily discriminated. So many competent authorities have considered the two forms distinct that I dare not even suggest a doubt as to the correctness of their views; but I hope that Mr. Hume will, in an early number of "STRAY FEATHERS," give us a note on the specimens of *S. unicolor* and *dissimilis* in his museum, with reference to this point.*

This species was only noticed in the Sheopuri Forest, in May, at an elevation of about 7,500 feet. It was decidedly rare, and the only specimen obtained flew out of some bushes and perched on the branch of an oak tree, where it was shot.

* As I mentioned to Dr. Scully when he examined my pretty large series, I do not believe in the distinctness of the two forms. All Blyth's museum specimens are in my opinion unicolor.

361.—Merula boulboul, *Lath.*

Six males, May and June.—Length, 10·7 to 11·3; expanse, 17 to 18; wing, 5·5 to 5·85; tail, 4·2 to 5·0; tarsus, 1·2 to 1·35; bill from gape, 1·2 to 1·24; bill at front, 0·9 to 0·95; closed wings short of tail, 2·4 to 2·45.

Bill orange or orange yellow; gape and margin of eyelids yellow; irides brown; feet brownish yellow; the soles yellow.

Six females, December, February, May and June.—Length, 10·7 to 11·1; expanse, 15·3 to 17·5; wing, 5·25 to 5·65; tail, 4·1 to 4·5; tarsus, 1·25 to 1·35; bill from gape, 1·2 to 1·25; bill at front, 0·8 to 0·93; closed wings short of tail, 2·0 to 2·2.

Bill deep yellow or orange, dusky at nostrils; irides dark brown; mouth orange; margin of eyelids pale yellow; feet fleshy brown; the claws brown horny; above deep brown; with an olivaceous or slightly rufescent tinge; beneath paler; and somewhat ashy on the middle of the abdomen; an inconspicuous wing band, rufescent brown. Jerdon's description of the female of this species would hardly enable one to identify these Nepal specimens.

The Grey-winged Blackbird is common in the valley of Nepal throughout the year, always adhering closely to the forests on the surrounding hills. In the winter it descends to the foot of the hills, and it is then social, frequenting thick bush jungle and flying away quietly after the manner of *Trochalopteron*. In summer it is found in tree forests, at elevations of from 7,000 to 8,000 feet. In May and June it was very common in the Sheopuri Forest, keeping in pairs, and its fine song was constantly heard.

362.—Merula albocincta, *Royle.*

Three males, February.—Length, 10·75 to 11·1; expanse, 16·7 to 17·0; wing, 5·4 to 5·65; tail, 4·23 to 4·4; tarsus, 1·25 to 1·35; bill from gape, 1·25 to 1·32; bill at front, 0·82 to 0·86; closed wings short of tail, 1·95 to 2·2.

Bill yellow, dusky at extreme tip; irides dark brown; gape, mouth and margin of eyelids deep yellow; tarsi buffy yellow; the toes brownish yellow; claws horny brown. The lower tail-coverts have the feathers white shafted and with a narrow terminal fringe of dull white.

Female, February.—Length, 10·8; expanse, 16·5; wing, 5·35; tail, 4·3; tarsus, 1·3; bill from gape, 1·25; bill at front, 0·81; closed wings short of tail, 2·05.

Bill dark yellow, dusky at the tip and nostrils; irides deep brown; feet dingy yellow; claws dusky; head darker than the back; the feathers of the breast and abdomen fringed with a

paler shade of brown, thus giving an undulated appearance to those parts.

These four specimens are typical *albocincta* (*nivicollis*, Hodgson); I did not meet with any examples of *castanea*.

The White-collared Ouzel is only found about the Nepal Valley in winter, and even then at high elevations on the hills, never lower than 7,000 feet. I found this Ouzel common in the Sheopuri Forest in February; it was not social like *M. boulboul*, being always found single or in pairs. It frequented the moss-covered branches of the trees, or flew up from a bush to the nearest tree on being alarmed. It is rather a noisy bird, and its note, in winter, is harsh, something like that of *Planesticus atrigularis* when alarmed, but lower and more full.

365.—Planesticus atrogularis, *Tem.*

Five males, December, March and April.—Length, 9·7 to 10·4; expanse, 15·1 to 16·8; wing, 5·4 to 5·6; tail, 3·9 to 4·1; tarsus, 1·25 to 1·3; bill from gape, 1·1 to 1·2; bill at front, 0·68 to 0·74; closed wings short of tail, 1·3 to 1·8.

Eight females, December to April.—Length, 9·2 to 9·75; expanse, 15·1 to 15·9; wing, 5 to 5·3; tail, 3·7 to 4·1; tarsus, 1·15 to 1·3; bill from gape, 1·05 to 1·15; bill at front, 0·65 to 0·78; closed wings short of tail, 1·3 to 2·0.

This Thrush, the "Chachar" of the Nepalese, is a winter visitant to the Nepal Valley, arriving about the end of November and departing at the end of April. It is exceedingly common in the valley in winter, frequenting gardens, groves, and woods, and ascending the forests on the hill sides to about 6,000 feet. It is often found feeding on grassy slopes, pathways and even ploughed fields, and when alarmed seeks refuge in the nearest tree, uttering as it rises a shrill cry. It was tolerably common in the Markhu Valley in December.

371.—Oreocincla dauma, *Lath.*

Male, Valley, October.—Length, 10·6; expanse, 17·9; wing, 5·73; tail, 4·2; tarsus, 1·3; bill from gape, 1·23; bill at front, 0·85; closed wings short of tail, 1·9; weight, 3·5 ozs.

Upper mandible black; the lower dusky at tip, green horny at base; gape orange; irides dark brown; feet buffy yellow.

This beautiful Thrush is rare in the valley, probably only passing through on its way to and from the plains. The only specimen obtained was shot on the 27th October; it was feeding on a grassy plot, and on being alarmed flew into the nearest tree and perched on one of the lower branches.

382.—Grammatoptila striata, *Vig.*

Three males, July and August.—Length, 11·2 to 12; expanse, 16·7 to 17·2; wing, 5·63 to 5·7; tail, 5·2 to 5·75; tarsus, 1·65 to 1·75; bill from gape, 1·25 to 1·35; bill at front, 1 to 1·02; nostril to tip of bill, 0·66 to 0·67; closed wings short of tail, 2·7 to 3·6.

Two females, June and July.—Length, 11 and 12·1; expanse, 16·8 and 17; wing, 5·3 and 5·6; tail, 5·35 and 5·7; tarsus, 1·65 and 1·75; bill from gape, 1·16 and 1·2; bill at front, 0·93 and 0·95; closed wings short of tail, 2·4 and 3·75.

Bill horny black; the base of lower mandible plumbeous; irides deep red or crimson; feet grey plumbeous; claws brownish horny. Sexes alike; all the specimens darker than examples from the Himalayas further to the west; streaks on the body feathers above pure white, or slightly sullied white, but not yellowish.

The Striated Jay-Thrush is fairly common on the hills round the Nepal Valley, at elevations of from 5,000 to 6,000 feet. It frequents dense thickets in small parties, and has a loud marked call, something like *Chook, chuk, chuk.* In the breeding season it is, of course, found in pairs, and it lays about the end of July. In confinement it is very quiet and undemonstrative, but soon dies.

388.—Alcippe nipalensis, *Hodgs.*

Three specimens, Valley, February, July and August.—Length, 5·1 to 5·3; expanse, 7·0 to 7·4; wing, 2·2 to 2·4; tail, 2·3 to 2·4; tarsus, 0·8 to 0·85; bill from gape, 0·55 to 0·6; bill at front, 0·4 to 0·45; closed wings short of tail, 1·5 to 1·6.

Bill grey or livid horny, the base of the upper mandible and a line along the culmen black; irides hazel brown; feet livid fleshy; claws grey horny. The brownish black sincipital stripes, and the white ring round the eye, are well marked.

This species is found about the foot of the hills round the Nepal Valley all the year, but does not appear to be common. It is social in its habits, and frequents bushes and bushy trees in small parties.

400.—Pomatorhinus ruficollis, *Hodgs.*

Two males, Valley, June and August.—Length, 7·6; expanse, 8·7 and 9·8; wing, 2·9 and 3·3; tail, 3·5 and 3·7; tarsus, 1·1 and 1·2; bill from gape, 0·9 and 1·0; bill at front, 0·75 and 0·78; closed wings short of tail, 2·2 and 2·5.

Three females, Valley, February, June and July.—Length, 7·4 to 7·5; expanse, 9·0 to 9·2; wing, 2·95 to 3·1; tail, 3·3 to

3·4; tarsus, 1·1 to 1·2; bill from gape, 0·97 to 1·0; bill at front, 0·75 to 0·79; closed wings short of tail, 2·2 to 2·4.

Bill horny yellow, paler at the tip, and the base of the maxilla and basal three-fourths of culmen brownish black; the irides vary from pale red to crimson; eyelid plumbeous; feet grey or greenish plumbeous; claws brownish horny. In all the specimens the whole belly, flanks, vent and lower tail-coverts, are earthy brown; in one specimen there are rufous patches on the breast.

This species is tolerably common on the hills round the valley of Nepal, at elevations of from 5,000 to about 7,500 feet, and is a permanent resident. It is found in small parties or in pairs, rarely solitary, in dense bushes on the hill sides, and sometimes in thick low forest on the top of the hills.

? 401.—Pomatorhinus ferruginosus, *Bly.*

On the 28th November, in a forest a little below Nawakot, I saw a small party of *Pomatorhinus* which, I think, were probably of this species. My reason for saying this is, that I saw the bill of one of the birds, and it seemed to me bright red; but of course I may be wrong in my surmise, as I did not obtain a specimen.

402.—Pomatorhinus schisticeps, *Hodgs.*

Nimboatar, December.—Length, 9·9; expanse, 12·1; wing, 4·03; tail, 4·7; tarsus, 1·3; bill from gape, 1·2; bill at front, 1·05; closed wings short of tail, 2·9.

Bill horny yellow; the base of the upper mandible dusky; irides reddish cream colour; feet plumbeous, the soles yellowish; claws livid horny.

This Scimitar Babbler was only noticed near Nimboatar in the lower hills, in winter. It was found in thick jungle on the bank of the Rapti river, frequented dense bushes, and was social in its habits.

405.—Pomatorhinus erythrogenys, *Vig.*

Three males, June and August.—Length, 9·5 to 10·7; expanse, 11·5 to 11·75; wing, 3·5 to 3·8; tail, 3·9 to 4·1; tarsus, 1·4 to 1·5; bill from gape, 1·43 to 1·5; bill at front, 1·15 to 1·25; closed wings short of tail, 2·75 to 2·9.

Female, Valley, August.—Length, 10; expanse, 11·5; wing, 3·72; tail, 4·2; tarsus, 1·4; bill from gape, 1·4; bill at front, 1·2; closed wings short of tail, 2·9.

Bill dingy grey horny; the base of the maxilla blackish, and the base of the mandible greenish; irides yellowish white or hoary; feet brownish fleshy; claws brown horny.

In these four specimens the throat and breast are rather deep cinereous; all have a short blackish mandibular stripe, and in all the rusty colour tends to meet across the breast; the dark colour of the throat and breast is not due to age; it is quite as well marked in young birds as in adults.

This species is more common than *ruficollis* on the hills round the Nepal Valley. It frequents thick brush-wood on the slopes of the hills, but seems to avoid tree forest; occasionally it may be seen peeping about from the middle of a bush, and on being disturbed it quickly drops to the ground and hops off to other shelter. It is generally found in pairs, but is social in winter; the alarm note consists of a single loudish '*chuck*' repeated at short intervals, but the usual cry uttered is a compound one: one bird says '*quoick*' and its companion immediately adds, '*tchur, tchur, tchur, tchur,*' and so on *da capo*. It lays in May and June; two nests, taken on the 30th May and 6th June, were large loosely-made pads, not domed, and with the egg cavity saucer-shaped each nest contained three pure white eggs.

407.—Garrulax leucolophus, *Hardw.*

Male, Nimboatar, December.—Length, 12; expanse, 16·1; wing, 5·33; tail, 5·5; tarsus, 1·8; bill from gape, 1·35; bill at front, 1·1; closed wings short of tail, 3·5.

Bill horny black; irides red brown; orbital skin slaty; feet livid plumbeous; claws dusky grey; the tail is distinctly barred.

This Laughing Thrush is found in the Nepal Valley, in summer, in the forests at the foot of the hills, at an elevation not exceeding, I think, about 5,000 feet. It was never met with about the valley in winter, but was found at that season in the Nawakot district, and was exceedingly common in the lower hills, from below Sisagarhi to the Hetoura Dun. No one who has chanced to come across a flock of this species in the jungle will ever forget the startling shout of loud discordant laughter with which his approach is greeted by them; nor the peculiarly noiseless and rapid manner in which the birds flit away through the thicket, chattering and grumbling at the cause of their alarm.

411.—Garrulax albogularis, *Gould.*

Four males, May and June.—Length, 11·2 to 11·75; expanse, 15·4 to 15·7; wing, 5·1 to 5·2; tail, 5·25 to 5·5; tarsus, 1·6 to 1·65; bill from gape, 1·2 to 1·24; bill at front, 0·83 to 0·85; closed wings short of tail, 3·0 to 3·3.

Eight females, February, May and June.—Length, 10·7 to 11·7; expanse, 14·7 to 15·1; wing, 4·5 to 5·1; tail, 5·0 to 5·7; tarsus, 1·6 to 1·7; bill from gape, 1·15 to 1·25; bill at front, 0·8 to 0·85; closed wings short of tail, 2·9 to 4·0.

Bill horny black, brownish at the tip; gape and orbital skin plumbeous; irides bluish white; feet pale leaden grey; claws pale horny.

The White-throated Laughing Thrush is a permanent resident of the forest-clad hills round the valley of Nepal, at an elevation of from 6,000 to nearly 9,000 feet. It frequents dense bushes and small tree forest, feeding on the ground where it turns up the dead leaves; and it is gregarious, associating in large flocks, except during the breeding season, when only pairs and solitary birds are met with. The chorus uttered by a flock of these birds is more subdued and less harsh than that of *G. leucolophus;* and when alarmed the birds steal away in single file. It breeds in April and May, and by the middle of June, the birds are found in flocks again; a young bird seen on the 19th June was about the size of a quail. With reference to Jerdon's description, I note that my specimens all have the band on the forehead deep rusty, not fulvous; and that the breast is a little paler than the back.

415.—Trochalopterum erythrocephalum, *Vig.*

Two males, Chitlang, December.—Length, 10·1; expanse, 11·6 and 11·75; wing, 3·8 and 3·9; tail, 4·5 and 4·7; tarsus, 1·5; bill from gape, 1·14 and 1·15; bill at front, 0·75 and 0·8; closed wings short of tail, 3·3 and 3·55.

Two females, Valley (May) and Chitlang (December).—Length 9·5 and 9·9; expanse, 11 and 11·5; wing, 3·6 and 3·7; tail, 4·2 and 4·25; tarsus, 1·23 and 1·25; bill from gape, 1·05; bill at front, 0·75; closed wings short of tail, 3·25 and 3·35.

Bill horny black; irides greyish brown; feet brown fleshy; claws brownish grey horny.

These specimens are darker and more deeply coloured than examples from the Himalayas further west, the grey on the tertiaries especially being of a much darker shade; the feathers of the ear-coverts are very conspicuously margined with silvery, thus recalling *T. chrysopterum.*

This species, although it does not occur in any considerable numbers, is yet fairly common on the hills round the Nepal Valley. In winter it is found in parties, along the foot of the hills, where there is thick brush-wood; and in the Chitlang Valley it is common, in December, in similar localities. On the 21st May I shot a bird of this species on the Sheopuri Ridge, at an elevation of about 7,000 feet. It moves about

very rapidly and noiselessly amongst the bushes it frequents, and its note is subdued and not unmusical.

425.—Trochalopterum lineatum, *Vig.*

Two males, Valley, June and November.—Length, 8·2; expanse, 9·55 and 9·8; wing, 3·05 and 3·16; tail, 3·6 and 3·8; tarsus, 1·05 and 1·1; bill from gape, 0·85 and 0·9; bill at front, 0·55 and 0·65; closed wings short of tail, 2·3 and 3·0.

Three females, Valley, May, June and August.—Length, 7·7 to 8·1; expanse, 8·9 to 9·3; wing, 2·85 to 2·9; tail, 3·6 to 3·8; tarsus, 0·95 to 1·05; bill from gape, 0·8 to 0·85; bill at front, 0·54 to 0·62; closed wings short of tail, 2·5 to 2·9.

Bill dusky; the base of the lower mandible greyish or brownish horny; irides brown or reddish brown; feet fleshy brown; claws livid horny.

These birds differ from specimens shot in Kashmir in having the head darker and with more marked glistening blackish shafts to the feathers; the chin, throat, and breast are rufous, whereas Kashmir examples have the chin whitish, and the throat and breast tinged with grey. Compared with numerous specimens from Simla and Koteghur, in Mr. Hume's museum, the difference is not so marked, but still the Nepal birds are all more deeply coloured. Two specimens in Mr. Hume's collection, labelled *Trochalopteron imbricatum*, "Dolaka, Nepal, January 1875," are identical with my birds. Mr. Hodgson gives a figure of a bird, obtained in the Kachar of Nepal, which he calls *setafer*, and this is quite distinct from *lineatum*; but then he figures what is obviously the Nepal race of *lineatum*, and calls it also *setafer*. In "Nests and Eggs," p. 266, Mr. Hume enters "*Trochalopteron imbricatum*, Hodgson," and quotes Mr. Hodgson's notes to the effect that it breeds commonly in the central region of Nepal during April and May. Now *imbricatum* is, I apprehend, a title bestowed by Blyth and not by Hodgson; and the description of the nest and eggs quoted by Mr. Hume most probably refers to *lineatum* which breeds in the valley of Nepal. I conclude that my five specimens entered above, and the two specimens in Mr. Hume's museum from Dolaka, are simply a local deep-tinted race of *lineatum* quite unworthy of specific separation from the western form of that species; and that Mr. Hodgson, having confounded two very distinct species (judging only from his drawings) under the same name, it follows that, unless his published description of *setafer* agrees with his type specimen from the Kachar, or Upper Northern region of Nepal, that name cannot be retained. It is to be hoped that some one will examine the types of *setafer* and of *Garulax imbricatus*, Blyth, and clear

away the cloud which now seems to hang over Jerdon's No. 426.

The Streaked Laughing-Thrush is a permanent resident on the hills round the valley of Nepal, at elevations of from 5,000 to 7,000 feet. It is tolerably common, but does not occur in anything like the numbers seen in the hills further west. Its habits, nests, and eggs are thoroughly well known; here I need only mention that three nests were taken in the valley at an elevation of about 6,000 feet on the 5th, 6th and 14th June, and that each nest contained three unspotted greenish blue eggs.

428.—Actinodura nipalensis, *Hodgs.*

Three males, Valley, May and June.—Length, 7·9 to 8·2; expanse, 10·5 to 11·15; wing, 3·4 to 3·65; tail, 3·3 to 3·35; tarsus, 1·05 to 1·2; bill from gape, 0·85 to 0·9; bill at front, 0·6 to 0·65; closed wings short of tail, 2·0 to 2·3.

Bill dusky or brownish black; irides brown; eyelid dark bluish grey; feet brownish fleshy; claws brownish grey or livid. In his description of this species Jerdon says:—"Tail also castaneous with numerous black bands, except the two middle tail feathers;" but the central tail feathers are even more conspicuously barred than the rest.

This handsome Bar-Wing was only obtained in the Sheopuri Forest in May and June, at an elevation of about 7,000, and was not common. It was found in dense bushes on steeply sloping ground, and its habits seemed to be precisely those of *Trochalopteron*.

429.—Malacias capistratus, *Vig.*

Eight males.—Length, 8·6 to 9·4; expanse, 11 to 12; wing, 3·7 to 3·9; tail, 4 to 4·6; tarsus, 1·05 to 1·2; bill from gape, 0·94 to 1·1; bill at front, 0·65 to 0·74; closed wings short of tail, 2·45 to 3·0.

Ten females.—Length, 8·2 to 9; expanse, 10·6 to 11·4; wing, 3·5 to 3·65; tail, 3·8 to 4·1; tarsus, 0·95 to 1·15; bill from gape, 0·9 to 1·0; bill at front, 0·65 to 0·72; closed wings short of tail, 2·3 to 2·85.

Bill black; irides reddish brown; feet fleshy brown; claws brown horny. It appears from the above measurements, all carefully taken from fresh specimens, that the female in this species is constantly and appreciably smaller than the male, the average difference being, in length, ·4; in expanse, ·4 to ·6; in length of wing, ·1 to ·25; in length of tail, ·2 to ·5; in length of tarsus, ·05 to ·1; in length of bill from gape, ·04 to ·1; in length of bill at front, ·02; and

in the extent by which the closed wings fall short of the end of the tail, ·15. These specimens resemble examples from Darjeeling in being much darker in colour than the birds from the Western Himalayas, but there is no other difference. Specimens of this species from Murree, Simla, Nynee Tal, the Nepal Valley and Darjeeling show a regular gradation in tint, the western forms being pale and the eastern deep tinted.

The Black-headed Sibia is very common on the hills round the Nepal Valley, at elevations of from 6,000 to 8,000 feet, but is never seen in the central woods; in winter it is also common in the upper part of the Chitlang Valley. It principally affects large tree forest, but is often found in dense bushes on steeply sloping hill sides; it is fond of the moss-covered branches of the large trees, to which it occasionally clings head downwards. In winter it is social, very bold and noisy, its cry then resembling the scolding alarm note of *Pycnonotus pygæus*, but louder and more harsh. In the breeding season, May and June, only single birds or pairs are seen, and its note is a fine loud *titteree-titteree, tweeyo*, as noted by Captain Hutton; the *tweeyo* being uttered after a short pause and in a more subdued tone.

430.—Sibia picaoides, *Hodgs.*

Male, Nimboater, December.—Length, 13·5; expanse, 14·8; wing, 5·2; tail, 8·6; tarsus, 1·1; bill from gape, 1·18; bill at front, 0·8; closed wings short of tail, 5·9.

Female, Nimboatar, December.—Length, 13·4; expanse, 13·6; wing, 4·74; tail, 8·4; tarsus, 1·15; bill from gape, 1·1; bill at front, 0·78; closed wings short of tail, 6·1.

Bill horny black; irides scarlet; feet greyish dusky; claws horny black. Above dark slaty; wings black, with a large pure white patch; tail blackish, faintly but regularly barred darker, and tipped with grey; the throat slightly tinged with rufous.

This species was tolerably common about Nimboatar in winter, but was not observed elsewhere in Nepal. It frequented the silk-cotton trees singly or in pairs, feeding on the flowers like *Chibia hottentota*.

432.—Malacocercus terricolor, *Hodgs.*

The Bengal Babbler was fairly common in the Dun, about Hetoura, in winter.

444.—Hypsipetes psaroides, *Vig.*

Six males.—Length, 9·7 to 10·8; expanse, 14·5 to 15·3; wing, 4·8 to 5·1; tail, 4·35 to 4·9; tarsus, 0·7 to 0·8; bill

from gape, 1·2 to 1·25 ; bill at front, 0·95 to 1·0 ; closed wings short of tail, 2·4 to 2·8.

Four females.—Length, 9·3 to 10·5 ; expanse, 13·3 to 14 ; wing, 4·5 to 4·7 ; tail, 4·1 to 4·3 ; bill from gape, 1·2 to 1·25 ; bill at front, 0·96 to 1·02 ; closed wings short of tail, 2·0 to 2·4.

Bill and feet bright coral red ; irides dark brown ; claws horny brown.

This species is abundant in the valley of Nepal, and is a permanent resident there ; it is also common in winter in the Chitlang Valley and on the slopes of Sisagarhi. In the valley it frequents the central woods and the forests at the foot of the hills, never ascending higher than about 6,000 feet. It is social, except in the breeding season (May and June), fearless, and very noisy, having a variety of notes. It is chiefly found near the tops of trees, and is certainly more arboreal in its habits than *H. macclellandi*.

447.—Hypsipetes macclellandi, *Horsf.*

Six males.—Length, 9·25 to 10 ; expanse, 12·5 to 13·3 ; wing, 4·3 to 4·5 ; tail, 4·1 to 4·6 ; tarsus, 0·65 to 0·75 ; bill from gape, 1·1 to 1·25 ; bill at front, 0·8 to 0·9 ; closed wings short of tail, 2·2 to 2·6.

Five females.—Length, 9·0 to 9·8 ; expanse, 11·8 to 13·2 ; wing, 4·0 to 4·25 ; tail, 4·1 to 4·4 ; tarsus, 0·7 to 0·75 ; bill from gape, 1·05 to 1·2 ; bill at front, 0·79 to 0·85 ; closed wings short of tail, 2·2 to 2·6.

Bill blackish above, livid grey horny below ; irides brownish red or dark red ; feet fleshy brown ; claws brown horny. Head dark brown ; the nape paler, and all the feathers of these parts with light grey centres ; edge of wing buffy yellow ; inner webs of the quills dusky, with a pale margin on the basal two-thirds ; the shafts of the tail feathers black above, pale greenish yellow below.

This Bulbul is common throughout the year on the hills round the valley of Nepal, but never tenants the central woods. It is generally found in bushes and bushy trees, not in high tree forest ; and is commonly seen in pairs. The breeding season appears to be May and June. A nest was taken on the 6th June, which contained two fresh eggs. The nest was somewhat oval in shape, measuring 3·35 in length and 2·5 across ; the egg cavity was about 1 inch deep in the centre, and the bottom of the nest 1·25 thick. It was attached to a slender fork of a tree, and was composed externally of ferns, dry leaves, roots, grass, and a little moss, bound together with fine black hair-like fibres which were wound round the

prongs of the fork so as regularly to suspend the nest like an Oriole's; there was a regular lining, distinct from the body of the nest, composed of fine long yellowish grass stems, and a little cobweb was spread here and there over the branches of the fork and the outside of the nest. The eggs are rather long ovals, smaller at one end, and fairly glossy; they measure, 1·0 by 0·7, and 0·97 by 0·7. The ground colour is pure pinkish white, abundantly speckled and finely spotted with reddish purple; the spots closely crowded together at the large end, but not confluent, forming in one egg a broadish zone, and in the other a cap; in the latter egg there are a few faint underlying stains of purplish inky at the large end.

448.—Hemixus flavala, *Hodgs.*

Male, Bhimphedi, December.—Length, 8·5; expanse, 11·35; wing, 3·85; tail, 3·55; tarsus, 0·7; bill from gape, 0·95; bill at front, 0·67; closed wings short of tail, 2·1.

Bill black; irides dark reddish brown; feet dusky.

This species was only observed about Bhimphedi in winter; the birds were generally solitary and perched on the branches of small bare trees.

451.—Criniger flaveolus, *Gould.*

Two males, December.—Length, 8·8 and 9·1; expanse, 13·0; wing, 4·15 and 4·2; tail, 3·9 and 4·0; tarsus, 0·8 and 0·85; bill from gape, 0·95 and 1·0; bill at front, 0·65 and 0·7; closed wings short of tail, 2·25 and 2·4.

Bill greyish blue horny; gape whitish fleshy; irides red brown; feet livid fleshy.

This Bulbul was common in December from Nimboatar to Bichiakoh; it was gregarious, associating in parties, frequented bushes and trees, and had the usual habits of Bulbuls. As far as I observed it seemed, in winter, to occupy a station intermediate between that of *Hemixus flavala* and *Rubigula flaviventris*; the former having been found higher up near Bhimphedi, and the latter lower down in the Sâl forest, between Bichiakoh and Semrabasa.

456.—Rubigula flaviventris, *Tick.*

Male, December.—Length, 7·7; expanse, 11·3; wing, 3·6; tail, 3·5; tarsus, 0·6; bill from gape, 0·75; bill at front, 0·5, closed wings short of tail, 2·15.

Bill black; irides pale yellowish; feet brownish black.

I found this Bulbul fairly common in the Sâl forest below Bichiakoh in winter. It was as often observed in parties as

in pairs, and it frequented the bushes by the roadside, and had the usual sharp querulous chirp characteristic of the Bulbuls.

458.—Otocompsa leucogenys, *J. E. Gr.*

Nine males.—Length, 7·6 to 8·1; expanse, 10·8 to 11·3; wing, 3·4 to 3·7; tail, 3·3 to 3·7; tarsus, 0·76 to 0·85; bill from gape, 0·8 to 0·9; bill at front, 0·6 to 0·7; closed wings short of tail, 2·0 to 2·3.

Five females.—Length, 7·2 to 7·5; expanse, 10 to 10·7; wing, 3·1 to 3·3; tail, 3·2 to 3·5; tarsus, 0·76 to 0·83; bill from gape, 0·8 to 0·82; bill at front, 0·6 to 0·64; closed wings short of tail, 1·8 to 2·1.

Bill black; irides light brown, in young birds dark; feet plumbeous black.

The White-cheeked Crested Bulbul is very common in suitable localities, on all the hills round the Nepal Valley throughout the year; but it never enters the central part of the valley. It is also common in winter in the Nawakot district, the Chitlang and Markhu Valleys, and from Bhimphedi to Nimboatar. Bushes growing on the hill sides are its favourite, and indeed only, resort in Nepal, and in these it breeds, in May and June principally, at elevations of from 5,000 to 6,000 feet. Its nests were secured on the 2nd, 5th, 6th, 14th and 28th June; the usual number of eggs laid seems to be three, and the average measurement of six eggs is 0·832 in length and 0·618 in breadth. The nests and eggs of this species have been fully described in Mr. Hume's work.

460.—Otocompsa emeria, *Lin.*

The Red-whiskered Bulbul appears to be exclusively confined to the lower regions of Nepal. I did not myself observe it in the wild state, but a caged specimen was brought to me at Kathmandu, which I kept for several months.

461.—Molpastes pygæus, *Hodgs.*

Four males.—Length, 9 to 9·5; expanse, 12·6 to 12·9; wing, 4·15 to 4·3; tail, 4·1 to 4·4; tarsus, 1·0; bill from gape, 0·93 to 1·0; bill at front, 0·67 to 0·76; closed wings short of tail, 2·4 to 2·7.

Five females.—Length, 8·2 to 8·5; expanse, 11·6 to 12·2; wing, 3·8 to 3·9; tail, 3·8 to 4·15; tarsus, 0·9 to 0·97; bill from gape, 0·9 to 0·95; bill at front, 0·67 to 0·72; closed wings short of tail, 2·4 to 2·5.

Bill black; irides dark brown; feet dusky.

This Bulbul is exceedingly common in the Nepal Valley, from thence all along the main road from Kathmandu to the plains, and in the Nawakot district. In the valley it frequents the central woods, the vicinity of villages and hamlets, and cleared spaces on the hills up to an elevation of 6,000 feet. It breeds in May and June in the Residency grounds, the nests being very commonly placed in small pine trees (*P. longifolia*). Three is the usual number of eggs found, and a clutch taken on the 29th May, measured in length from 0·85 to 0·93, and in breadth from 0·64 to 0·65.

465.—Phyllornis aurifrons, *Tem.*

Male, Hetoura, December.—Length, 7·3 ; expanse, 11·65 ; wing, 3·75 ; tail, 2·65 ; tarsus, 0·7 ; bill from gape, 1·0 ; bill at front, 0·8 ; closed wings short of tail, 1·25.

Bill black ; irides deep brown ; feet bluish plumbeous.

I found this pretty Green Bulbul not uncommon in the Dun, about Hetoura, in December. It was usually solitary, and principally frequented small trees, moving about amongst the branches and leaves and uttering a rather pleasing note. It occasionally paid a visit to the flowering silk-cotton trees, but was quickly driven away by *Chibia hottentotta*, *Megalæma hodgsoni*, and such like powerful competitors.

466.—Phyllornis hardwickii, *Jard. and Selb.*

Three males, Nimboatar (December), and Pharphing (July).—Length, 7·5 to 7·7 ; expanse, 11·6 to 12 ; wing, 3·8 to 3·85 ; tail, 3·0 to 3·2 ; tarsus, 0·7 ; bill from gape, 0·95 to 0·97 ; bill at front, 0·73 to 0·75 ; closed wings short of tail, 1·5 to 1·6.

Bill black ; irides brown or dark brown ; feet plumbeous ; claws dusky or black.

This beautiful species is common in winter about Nimboatar and breeds in summer at Pharphing and on some of the hills round the Nepal Valley. It is usually seen in pairs, and its habits are very like those of *P. aurifrons* ; but in winter it seems to be a more silent bird.

470.—Oriolus kundoo, *Sykes.*

Six males, Valley, April, May and June.—Length, 9·4 to 9·7 ; expanse, 16·5 to 17·3 ; wing, 5·4 to 5·75 ; tail, 3·7 to 3·9 ; tarsus, 0·8 to 0·9 ; bill from gape, 1·25 to 1·4 ; bill at front, 1·05 to 1·2 ; closed wings short of tail, 1·1 to 1·5.

Three females.—Length, 9·4 to 9·5 ; expanse, 16·4 to 16·6 ; wing, 5·5 ; tail, 3·7 to 3·75 ; tarsus, 0·85 to 0·9 ; bill from gape, 1·35 to 1·4 ; bill at front, 1·1 to 1·2 ; closed wings short of tail, 1·4.

Bill brownish red; irides brownish red to crimson; feet bluish plumbeous.

Three immature birds, April, May and June.—Length, 9·3 to 9·5; expanse, 16·5 to 16·8; wing, 5·45 to 5·5; tail, 3·7 to 3·9; tarsus, 0·8 to 0·9; bill from gape, 1·25 to 1·4; bill at front, 1·06 to 1·2; closed wings short of tail, 1·2 to 1·4.

Bill reddish brown, in one specimen black; irides brick red; feet bluish plumbeous; claws black. These birds are streaked with black or dark brown on the lower surface.

The Indian Oriole is a seasonal visitant to the valley of Nepal, arriving about the 1st April and departing in August.

It frequents some of the central woods, gardens and groves, and breeds in May and June.

471 *ter.*—Oriolus tenuirostris, *Bly.*

Valley, 1st February.—Length, 9·9; expanse, 17·7; wing, 6·0; tail, 3·8; tarsus, 0·94; bill from gape, 1·45; bill at front, 1·25; closed wings short of tail, 0·9; weight, 3ozs.

Bill fleshy pink, paler at the base of the lower mandible; irides crimson; mouth fleshy; eyelids grey; feet deep bluish plumbeous; claws brownish horny. The black occipital band is 0·4 in width, the yellow wing spot, 0·75; the yellow on the tips of the pair of rectrices next the uropygials is 0·9 in length, and on the outer rectrices, 1·8.

Male, Valley, 19th February.—Length, 9·8; expanse, 17·3; wing, 5·7; tail, 3·7; tarsus, 0·9; bill from gape, 1·45; bill at front, 1·23; closed wings short of tail, 1·0; weight, 2·5ozs.

Bill dusky, reddish fleshy in front of nostrils, at base and along gonys; irides crimson; feet greyish plumbeous; claws dusky. The black band on the nape measures 0·4 in width; the yellow wing spot is 0·63 deep; yellow on tips of the tail feathers on each side of the central pair, 0·8; yellow on the tip of outer tail feathers, 1·55 along the inner web.

I have compared these two specimens with examples of *tenuirostris* from Tenasserim in Mr. Hume's museum, and after the most careful scrutiny I can detect no difference between the Nepal and Burmese birds.

This Oriole is a winter visitor to the central woods of the Nepal Valley, and is fairly common there from about the end of October to March. On the 19th and 21st May I heard, and just caught a glimpse of a Yellow Oriole, in dense forest on Mount Sheopuri, at an elevation of about 7,500 feet. It may possibly have been this species, and if so, it probably breeds in the immediate vicinity of the valley. In winter this species is found solitary or in pairs, frequenting the tops of high trees; and its flight is generally rather rapid and excited.

Its note greatly resembles that of *O. kundoo*, but is louder and less musical; it also occasionally utters a rather harsh cry, not Oriole-like, which is monotonously repeated.

The occurrence of this Oriole, hitherto, only recorded from the Burmese countries, in the valley of Nepal, is very interesting. It seems strange that such a bird should have escaped Mr. Hodgson's researches; and the fact that he never obtained it is all the more remarkable, inasmuch as both my specimens were shot in the Residency grounds where Mr. Hodgson dwelt for so many years.

472.—Oriolus melanocephalus, *Lin.*

Female, Sâl Forest between Bichiakoh and Semrabasa, December.—Length, 10; expanse, 16·3; wing, 5·45; tail, 3·9; tarsus, 0·97; bill from gape, 1·4; bill at front, 1·18; closed wings short of tail, 1·2.

Bill brownish red, paler at base; irides carmine; feet dark plumbeous; claws dusky.

A young male shot at Parwanipur, in the plains of Nepal, on the 20th December, agreed well with Jerdon's description of the young of this species.

The Bengal Black-headed Oriole was very common, in winter, from the Hetcura Dun to Parwanipur in the plains. It was common throughout the Sâl forest, solitary or rarely in pairs, and flew away before one from tree to tree. In the plains it principally frequented mangoe-topes and pipal trees. It never strays up to the valley of Nepal, I believe.

474.—Oriolus trailli, *Vig.*

Specimen shot at Nimboatar in December.—Length, 10·8; expanse, 17·1; wing, 5·95; tail, 4·3; tarsus, 1·0; bill from gape, 1·45; bill at front, 1·2; closed wings short of end of tail, 1·75.

Bill pale bluish grey; irides pale buffy yellow; feet plumbeous; claws blue at base, pale horny at tip. Identical with specimens from Darjeeling.

The Maroon Oriole was only found at Nimboatar, in winter. It frequented dense jungle on the bank of the Rapti, and only single birds were observed.

475.—Copsychus saularis, *Lin.*

Three males, March and April.—Wing, 3·9 to 4·1; tail, 3·7 to 3·8; tarsus, 1·13 to 1·2; bill from gape, 1·0; bill at front, 0·7; closed wings short of tail, 2·3.

The third lateral tail feather has some black on the inner web at the extreme base; in the fourth tail feather the black runs

down as a margin to the inner web to within about half an inch from the tip, and there is a black patch on the outer web of the feather at the base.

Four females, March, April and May.—Length, 7·8 to 8·3; wing, 3·6 to 4·0; tail, 3·4 to 3·5; tarsus, 1·1 to 1·2; bill from gape, 0·95 to 1·0; bill at front, 0·6 to 0·7; closed wings short of tail, 2·25.

These specimens are as dark on the breast and back as some female examples from Pakchan, Tenasserim, entered by Mr. Hume in S. F., VI., p. 333, as *C. musicus*, Raffles, and have faint dark striations on the under wing-coverts. The Nepal birds are, in fact, intermediate between *saularis* and *musicus*, but are much nearer in colour to the Pakchan specimens above alluded to than to birds from Sambhur, for instance; indeed the tint even resembles that of Singapore examples.

Male, Young, 15th August.—Length, 7·5; expanse, 11·2; wing, 3·6; tail, 3·1; tarsus, 1·2; bill from gape, 0·95; closed wings short of tail, 2·0.

Bill black; gape fleshy; mouth yellow; irides brownish black; feet livid blackish. This specimen is strikingly Thrush-like, and its spotted plumage recalls the parallel stage of *Petrophila cinclorhyncha*.

The Magpie-Robin is a permanent resident in the valley of Nepal, and is one of the commonest and most familiar birds there met with; it is also common in the Nawakot district and the plains of Nepal. In the valley it frequents gardens, groves, the skirts of the central woods and cleared spaces in them, and, generally, the vicinity of country houses and of hamlets; but it never ascends the hills. Its habits and fine song in the breeding season are well known, and have often been described. It breeds in May and June; half a dozen nests, found in those months, were placed in holes in walls and trees.

483.—Pratincola indica, *Bly.*

Fourteen males.—Length, 4·8 to 5·4; expanse, 8·1 to 9·1; wing, 2·5 to 3·0; tail, 1·9 to 2·35; tarsus, 0·8 to 0·96; bill from gape, 0·65 to 0·73; bill at front, 0·34 to 0·45; closed wings short of tail, 0·85 to 1·2.

Nine females.—Length, 4·85 to 5·5; expanse, 8·0 to 9·05; wing, 2·45 to 2·95; tail, 1·9 to 2·23; tarsus, 0·8 to 0·9; bill from gape, 0·63 to 0·7; bill at front, 0·34 to 0·43; closed wings short of tail, 0·9 to 1·2.

Bill, feet and claws black; irides dark brown.

Male, Young, Valley, 19th July.—Length, 5·2; expanse, 8·4; wing, 2·6; tail, 2·2; tarsus, 0·8; bill from gape, 0·65; bill

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at front, 0·4; closed wings short of tail, 1·0. This specimen is spotted and streaked above and on the breast.

I have followed Mr. Hume (cf. S. F., V., pp. 442—244) in entering the above twenty-four specimens under *P. indica*, but I am not sure that they all belong to one species. There are two distinct forms amongst my birds: one, a small dark race, which is a permanent resident in the valley and breeds there; the other a larger race with the lower surface rufous throughout, which only comes into the valley in winter. Six specimens of the latter race, obtained from November to March, have the following dimensions:—Four males, wing, 2·85 to 3·0; and bill from gape, 0·7 to 0·73; two females, wing, 2·9 to 2·95; and bill from gape, 0·7. It is clear that the two forms cannot be separated on the ground of size alone, for I find a regular gradation from birds with a wing 2·45 to those with a wing measuring 3·0; but perhaps the large form might be separated from *indica* on account of its colours, migratory habits, and generally larger size. Without an examination of the type it seems impossible to say whether it is identical with the race described as *P. robusta*, Tristram, or not.

There is yet another point to be noted about my *Pratincolas*. It has lately often been pointed out that *rubicola* differs from *indica* in having the upper tail-coverts and lower part of the rump with the feathers dark centred, whereas *indica* never has those parts striated. Now in six of my specimens the upper tail-coverts are longitudinally striated, though faintly; and in one of these, a female, shot on the 12th December, the lower rump and upper tail-coverts are centred with dusky along the shafts of the feathers, thus making a decided *approach* to some specimens of the same sex from London. Even in this specimen, however, the streaks are neither as dark nor nearly as strongly marked as in the European examples.

The Indian Bush Chat is a very common bird and a permanent resident in the valley of Nepal; and it is abundant, in winter, the whole way from the valley to the plains, and in the Nawakot district. Two nests of this species were found in the valley in June, placed on the ground and well sheltered by grass and wormwood bushes.

486.—Pratincola ferrea, *Hodgs.*

Three males.—Length, 5·75 to 5·8; expanse, 8·5 to 8·8; wing, 2·7 to 2·8; tail, 2·6 to 2·8; tarsus, 0·8 to 0·85; bill from gape, 0·62 to 0·68; bill at front, 0·38 to 0·43; closed wings short of tail, 1·6 to 1·65.

Three females.—Length, 5·5 to 5·7; expanse, 8·3 to 8·5; wing, 2·62 to 2·7; tail, 2·5 to 2·7; tarsus, 0·85 to 0·9; bill from gape, 0·53 to 0·65; bill at front, 0·35 to 0·42.

The Dark-grey Bush Chat is tolerably common in the valley of Nepal throughout the year. It is always found about the foot of the hills, and ascends to an elevation of about 6,000 feet, but it never seems to visit the central parts of the valley. A nest of this species, taken on the 14th June, contained three eggs, of which one undoubtedly belonged to a Cuckoo.

498.—Ruticilla hodgsoni, *Moore.*

Eight males, October to March.—Length, 6·1 to 6·35; expanse, 10 to 10·4; wing, 3·3 to 3·45; tail, 2·6 to 3·0; tarsus, 0·9 to 0·96; bill from gape, 0·7 to 0·75; bill at front, 0·38 to 0·48; closed wings short of tail, 1·0 to 1·3.

Five females, November to April.—Length, 5·9 to 6·2; expanse, 9·6 to 10·1; wing, 3·1 to 3·3; tail, 2·5 to 2·9; tarsus, 0·9; bill from gape, 0·7 to 0·75; bill at front, 0·4 to 0·45; closed wings short of tail, 1·0 to 1·3.

Bill black; gape fleshy yellow; irides dark brown; feet black or brownish black, soles yellow; claws black.

The female is earthy brown above, the outer webs of the wing feathers being brown and the inner webs dusky, except the tertiaries which have both webs brown; under surface dull greyish albescent, without any tinge of rufous; white on the lower part of the abdomen; the under tail-coverts are faintly tinged with rusty or pale rufous. In the male the upper surface is a moderately deep bluish grey.

Hodgson's Redstart is common, in winter, in the valley of Nepal, the Nawakot district, and the Chitlang and Markhu Valleys. In the Great Valley it appeared about the end of September and migrated northwards before the middle of April. It is generally found along the course of the streams, perching on stones or in bushes growing close to the water; occasionally about bushes at the foot of the hills in nearly dry nullahs, feeding on grassy plots; and very rarely in gardens in the central part of the valley. It has the habit, common to the genus, of quivering its tail when it perches.

503.—Ruticilla frontalis, *Vig.*

Two males, Sheopuri Ridge, February.—Length, 5·95 and 6·1; expanse, 10·3 and 10·6; wing, 3·4 and 3·5; tail, 2·7 and 2·8; tarsus, 0·9; bill from gape, 0·69 and 0·7; bill at front, 0·37 and 0·38; closed wings short of tail, 0·95 and 1·05.

Two females, ascent of Sheopuri, February.—Length, 5·6 and 6·0; expanse, 9·5 and 9·75; wing, 3·2 and 3·28; tail, 2·6

and 2·7; tarsus, 0·9 and 0·95; bill from gape, 0·65 and 0·7; bill at front, 0·35 and 0·37; closed wings short of tail, 1·0 and 1·23.

Bill black; gape yellowish fleshy; irides dark brown; feet and claws black.

The quills have faint brownish edgings, and the median coverts are edged pale. The female is olive brown above.

This fine Redstart is a winter visitant to the valley of Nepal, and is found only on the hills, at elevations of from 5,000 to nearly 8,000 feet. I found it fairly common in February on the slope of Sheopuri and at the top of the ridge, frequenting bushes, cleared ground and forest paths. It was always very shy, and on catching sight of one, it immediately dived into the nearest bush and there concealed itself; occasionally it perched on a stone, and now and then was seen on a spray at the top of a bush, quivering its tail after the manner of its tribe; but otherwise its habits differed greatly from those of *R. rufiventris* and *hodgsoni*. The only note it was heard to utter was a low but very distinct "*pirt, pirt.*"

505.—Rhyacornis fuliginosus, *Vig.*

Six males.—Length, 5·3 to 5·5; expanse, 9·1 to 9·8; wing, 2·9 to 3·1; tail, 2·05 to 2·35; tarsus, 0·8 to 0·93; bill from gape, 0·65 to 0·71; bill at front, 0·36 to 0·42; closed wings short of tail, 0·75 to 0·95.

Seven females.—Length, 4·85 to 5·25; expanse, 8·3 to 9·2; wing, 2·75 to 2·95; tail, 2 to 2·15; tarsus, 0·85 to 0·9; bill from gape, 0·6 to 0·66; bill at front, 0·34 to 0·37; closed wings short of tail, 0·65 to 0·9.

Bill black; gape fleshy white; irides dark brown; feet dark horny brown; claws black.

The plumbeous Water-Robin is only found in the valley of Nepal in winter; and at that season it is also common along the rivers in the Nawakot district, the Markhu Valley, and as low down as Hetoura. Its favourite resort is, of course, a mountain stream, but I have occasionally seen it on the edge of a tank, and in bushes near some river. In Nepal it is nearly always found in company with the next species.

506.—Chimarrornis leucocephalus, *Vig.*

Four males.—Length, 7·2 to 7·4; expanse, 11·5 to 12·1; wing, 3·8 to 4·0; tail, 3·0 to 4·0; tarsus, 1·2 to 1·25; bill from gape, 0·8 to 0·84; bill at front, 0·45 to 0·5; closed wings short of tail, 1·4 to 1·5.

Three females.—Length, 6·7 to 6·9; expanse, 10·5 to 11; wing, 3·45 to 3·6; tail, 2·9; tarsus, 1·1 to 1·14; bill from gape,

0·75 to 0·82; bill at front, 0·46 to 0·48; closed wings short of tail, 1·35 to 1·45.

Bill black; gape fleshy white; irides deep brown; feet blackish brown; claws black.

The White-capped Redstart is fairly common in winter in the Nepal Valley, the Nawakot district, and on the streams as far down as Bichiakoh, south of the Sandstone Range. Its habits are very well known, but I may here mention that it constantly moves its tail up and down, and often spreads it out pretty widely.

508.—Nemura cyanura, *Pall.*

Female, February.—Length, 5·5; expanse, 8·8; wing, 3·0; tail, 2·5; tarsus, 0·9; bill from gape, 0·65; bill at front, 0·36; closed wings short of tail, 1·0.

Bill black, brownish at the gape; irides dark brown; feet dark horny brown.

The colour above is rather olive than 'pale brown,' there is a faint bluish frontal band and supercilium, the chin is whitish, and the abdomen white.

This species was only found in the Nepal Valley in winter, even then appeared to be rare. The only specimen obtained was shot in the Sheopuri Forest at an elevation of about 7,500 feet; it was solitary, and perched on the stump of a tree close to the path.

513.—Calliope pectoralis, *Gould.*

Female, Valley, March.—Length, 6·0; expanse, 9·0; wing, 2·8; tail, 2·7; tarsus, 1·2; bill from gape, 0·75; bill at front, 0·45; closed wings short of tail, 1·4.

Bill black, brownish at tip and base of lower mandible; irides brown; feet brown; the tarsi rather livid; claws dusky. The supercilium is whitish, and the spots on the tail feathers are white.

The White-tailed Ruby Throat is a winter visitor to the valley of Nepal, but is not common there. It was only observed in the central part of the valley, frequenting thick bushes and thorny hedges; it came out to the open ground to feed, but darted to cover again on the slightest alarm. The only specimen preserved was shot in the Residency grounds.

514.—Cyanecula suecica, *Lin.*

Male, Valley, November.—Length, 5·7; expanse, 8·9; wing, 2·9; tail, 2·35; tarsus, 1·12; bill from gape, 0·75; bill at front, 0·48; closed wings short of tail, 1·15; weight, 0·75 ozs.

Bill horny black; base of lower mandible brownish; gape and mouth yellow; irides dark brown; feet blackish brown; claws horny black.

This species is a cold weather visitor to the Nepal Valley, and is only found there in small numbers.

530.—Orthotomus sutorius, *Penn.*

Five males, Valley, May to November.—Length, 4·5 to 5·6; expanse, 6·1 to 6·4; wing, 1·9 to 2·0; tail, 1·65 to 2·75; tarsus, 0·8 to 0·85; bill from gape, 0·65 to 0·7; bill at front, 0·5 to 0·56; closed wings short of tail, 1·2 to 2·1.

Four females, Valley, March to August.—Length, 4·2 to 5·0; expanse, 5·9 to 6·4; wing, 1·9 to 1·95; tail, 1·6 to 2·2; tarsus, 0·7 to 0·85; bill from gape, 0·64 to 0·69; bill at front, 0·47 to 0·52; closed wings short of tail, 1·0 to 1·8

Bill blackish brown above, pale fleshy beneath; irides yellow, golden buff, or orange; feet reddish fleshy; claws grey, or pale yellowish horny.

The Indian Tailor-Bird is very common in the Nepal Valley, where it is a permanent resident. It is spread all over the central part of the valley, and is also found at the foot of the hills, and in suitable localities ascends to an elevation of about 6,000 feet. It frequents gardens, hedgerows and bushes, and is very familiar in its habits. It breeds freely in the valley at an elevation of 4,500 feet. I took many of its nests in the Residency grounds, Rani Jangal, &c., in May, June and July.

547.—Suya crinigera, *Hodgs.*

Three males, Valley, July and August.—Length, 7·3 to 7·8; expanse, 7·3 to 7·5; wing, 2·3 to 2·35; tail, 4·2 to 4·75; tarsus, 0·9; bill from gape, 0·68 to 0·7; bill at front, 0·48 to 0·53; closed wings short of tail, 3·1 to 3·8.

Female, Valley, June.—Length, 7·1; expanse, 7·5; wing, 2·35; tail, 4·0; tarsus, 0·9; bill from gape, 0·65; bill at front, 0·5; closed wings short of tail, 3·0.

Bill black; irides straw yellow, yellow, and golden yellow; feet fleshy; claws brown and dusky.

I follow Mr. Hume (S. F., VII., pp. 1—3), in referring my specimens to *crinigera*; they are in the *fuliginosa* stage.

This species is tolerably common on the hills round the valley of Nepal, at elevations of from 5,000 to 6,000 feet. It frequents low bushes on the hill sides. The breeding season seems to last from May to quite the end of July.

A nest taken on the 29th June contained only two fresh eggs. The nest was of the shape of a mangoe, the small end being uppermost, and the entrance on one side, near the top; its

measurements, externally, were, in height 5·2; in breadth, 3·6 in one direction, and 2·65 in the other; the opening was nearly circular, 1·8 in diameter. The nest was rather flimsy in structure, composed of grass down, more or less felted together, and bound round externally with dry green grass blades; internally it was scantily lined with fine grass stems, which were used to strengthen the lower lip of the entrance hole. The eggs were fairly glossy, moderate or longish oval in shape, and measured 0·65 by 0·5 and 0·7 by 0·49; the ground color was pinkish white, the small end nearly free from markings, the middle portion of the eggs with faint streaks and tiny indistinct spots of brownish red, and the large end with a zone bright brownish red or a confluent cap of the same colour.

559.—Phylloscopus nitidus, *Lath.*

Two males, Valley, April.—Length, 4·6 and 4·65; expanse, 7·5 and 7·6; wing, 2·5 and 2·6; tail, 2 and 2·1; tarsus, 0·7 and 0·75; bill from gape, 0·6; bill at front, 0·35; closed wings short of tail, 0·8 and 0·9.

Female, Valley, April.—Length, 4·5; expanse, 7·4; wing, 2·4; tail, 1·95; tarsus, 0·75; bill from gape, 0·55; bill at front, 0·35; closed wings short of tail, 0·7.

Upper mandible dusky, the lower pale fleshy; tarsi livid brownish; the toes dingy greenish brown.

This Willow Warbler passes through the Nepal Valley on its way to and from its winter quarters in the plains. During the first-half of April it was fairly common in the Residency grounds; it seemed to frequent small green-leaved trees rather than the pines, and its movements were rather sedate and deliberate.

560.—Phylloscopus viridanus, *Bly.*

Male, Valley, April.—Length, 4·8; expanse, 7·5; wing, 2·45; tail, 2·5; bill from gape, 0·6; bill at front, 0·45; tarsus, 0·8; closed wings short of tail, 0·9.

This species is fairly common in the central woods of the Nepal Valley in winter. It does not migrate until about the beginning of May.

561.—Phylloscopus affinis, *Tick.*

Two males, Valley, March and April.—Length, 4·4 and 4·5; expanse, 6·7 and 6·8; wing, 2·3; tail, 1·9 and 2·0; tarsus, 0·75 and 0·8; bill from gape, 0·5 and 0·52; bill at front, 0·37 to 0·4.

Two females, Valley, May.—Length, 4·2 and 4·3; expanse, 6·3 and 6·5; wing, 2·1 and 2·2; tail, 1·7 and 1·75; tarsus, ·073; bill at front, 0·36 and 0·37; nostril to point of bill, 0·25.

Upper mandible dark brown, the lower horny yellow; tarsi fleshy, or greenish brown; toes dark brown; soles lemon yellow.

Tickell's Willow Warbler was obtained in the valley of Nepal in October, and from the middle of March to the middle of May. It was tolerably common in the pine trees of the Residency grounds.

564.—Reguloides trochiloides, *Sund.*

Two males, Valley, 19th and 21st May.—Length, 4·3 and 4·4; expanse, 6·7 and 7·2; wing, 2·23 and 2·4; tail, 1·8 and 1·85; tarsus, 0·7; bill from gape, 0·54; bill at front, 0·35; closed wings short of tail, 0·8.

Upper mandible brownish black, the lower deep yellow; irides dark brown; gape greenish yellow; feet livid brownish.

This species was only obtained in the Sheopuri Forest, in May, at an elevation of about 6,500 feet. It frequented tree bushes, and had the usual lively leaf-searching manners of its tribe. Although not actually observed there, it no doubt frequents the central woods of the valley for a short time on its migrations, like the other species of *Phylloscopus*.

565 *bis.*—Reguloides humii, *Brooks.*

Eleven males.—Length, 4·0 to 4·3; expanse, 6·5 to 7·0; wing, 2·2 to 2·34; tail, 1·6 to 1·92; tarsus, 0·75 to 0·8; bill from gape, 0·46 to 0·5; bill at front, 0·25 to 0·35; closed wings short of tail, 0·6 to 0·9.

Nine females.—Length, 3·7 to 4·1; expanse, 6·15 to 6·6; wing, 2·0 to 2·16; tail, 1·5 to 1·7; tarsus, 0·67 to 0·75; bill from gape, 0·45 to 0·5; bill at front, 0·25 to 0·34; closed wings short of tail, 0·6 to 0·8.

Bill dusky; the base of the lower mandible deep yellow, greenish, or brown; irides dark brown; feet dark brown, the soles greenish yellow; claws dusky horny; the gape pale yellow.

These twenty specimens were shot in the valley between the 30th October and the 18th April. All are clearly referable to the form described by Mr. Brooks (S. F., VII., p. 131) under the name of *Reguloides humii*. The fourth and fifth primaries are longest; the third slightly shorter than the fourth, and the second 0·25 shorter than the third; the top of the head is brown, sometimes tinged with olive; the supercilium is fulvous or pale buff; the coronal streak is only faintly shown in some specimens, in the majority it cannot be traced.

The fact that all these Nepal birds agree with the form called by Mr. Brooks *humii*, seems to strengthen his contention

that the difference on which he relies to separate *humii* from the true *superciliosus* is not due merely to the dryness or humidity of the localities in which the specimens were obtained. Mr. Hume very justly points out that the colours of many birds are much deeper in specimens from Sikim than in examples of the same species found in the dry North-West; and in the course of these notes I have often remarked on the darker hue of many species obtained in Nepal as compared with birds from the Western Himalayas. But then, when this difference in tint obtains, the Nepal birds quite resemble Sikim ones; whereas in the case of this *Phylloscopus* my specimens differ conspicuously from examples procured at Darjeeling. The meridian of the valley of Nepal is probably nearly the eastern limit of *R. humii*, as seems to be also the case with reference to *Palæornis nipalensis*, *Palæornis purpureus*, *Muscipeta paradisi*, *Eudynamis honorata*, &c., which are replaced in Sikim by allied forms.

But granting that, as a matter of convenience, the Brown-headed Willow Warbler should have a name to distinguish it from *superciliosus*. It seems still doubtful whether Mr. Brooks' name of *humii* will stand; it would be strange, considering the long list of synonyms of which *Phylloscopus superciliosus* can boast, if no author has previously managed to hit the brown-headed form. *Phyllopneuste reguloides* of Hodgson should certainly have grazed it, if not *inornatus* of Blyth.

This species is very common in the valley of Nepal in winter from October to nearly the end of April. It is by far the most abundant species of *Phylloscopus* found in the valley, and it frequents the central woods and the forests at the foot of the hills. It is generally found in pairs or small parties, on trees or sometimes in thorny rose hedges, and is very lively, active and noisy.

Reguloides humii, *Var.*

Male, Valley, 30th October.—Length, 4·0; expanse, 6·6; wing, 2·2; tail, 1·7; tarsus, 0·66; bill from gape, 0·5; bill at front, 0·33; closed wings short of tail, 0·7.

Bill brownish dusky, yellow horny at base of lower mandible; irides dark brown; feet dusky.

This specimen precisely resembles *R. humii*, Brooks, but has the outer tail feather on each side *pure white*; the fourth quill is longest, and the tarsus is rather shorter than in my specimens of *humii*. Mr. Hume has a specimen of *humii* which shows a good deal of white about the head, thus showing that a partial albinism is occasionally found in the species. My bird has the white symmetrical and recalling the coloration of the tail fea-

thers in *viridipennis, erochrous* and *maculipennis;* but as this may be a mere individual variation from the normal colouring, I do not propose a new name for the bird.

566.—Reguloides proregulus, *Pall.*

Two males, Valley, January and March.—Length, 3·55 and 3·6; expanse, 6·15 and 6·25; wing, 2·0 and 2·1; tail, 1·43 and 1·5; tarsus, 0·65 and 0·73; bill from gape, 0·43 and 0·44; bill at front, 0·29 and 0·3; closed wings short of tail, 0·5 and 0·55.

Female, Valley, March.—Length, 3·5; expanse, 6·0; wing, 1·9; tail, 1·4; tarsus, 0·65; bill from gape, 0·43; bill at front, 0·28; closed wings short of tail, 0·6.

Upper mandible black; the lower mandible dusky, yellowish at the base; irides dark brown; gape orange; feet dingy greenish brown; claws dusky; soles yellowish green.

This pretty species is tolerably common in the valley of Nepal in winter. I found it only in the Residency grounds, where it frequented the pine trees in small parties.

568.—Reguloides erochrous, *Hodgs.*

Male, Chitlang Valley, December.—Length, 4·15; expanse, 6·5; wing, 2·35; tail, 1·75; tarsus, 0·8; bill from gape, 0·49; bill at front, 0·34; closed wings short of tail, 0·45.

Male? Sheopuri Ridge, February.—Length, 4·3; expanse, 7·1; wing, 2·4; tail, 1·75; tarsus, 0·8; bill from gape, 0·5; bill at front, 0·33; closed wings short of tail, 0·65.

Bill black; base of lower mandible and gape yellow; irides dark brown; feet dusky greenish, the soles greenish yellow; claws dusky.

The Bar-winged Warbler is a winter visitor to the hills round the valley of Nepal and the Chitlang Valley. It was always found hunting about in the bushes at elevations of rom about 6,000 to 7,500 feet, but it was never abundant. It does not appear to frequent the central part of the Nepal Valley.

572.—Abrornis xanthoschistus, *Hodgs.*

Ten males.—Length, 4·1 to 4·35; expanse, 6·5 to 6·8; wing, 2·15 to 2·3; tail, 1·7 to 1·8; tarsus, 0·7 to 0·75; bill from gape, 0·53 to 0·55; bill at front, 0·3 to 0·4; closed wings short of tail, 0·5 to 0·75.

Seven females.—Length, 3·85 to 4·2; expanse, 6·0 to 6·65; wing, 2·0 to 2·1; tail, 1·55 to 1·7; tarsus, 0·7 to 0·74; bill from gape, 0·5 to 0·55; bill at front, 0·3 to 0·35; closed wings short of tail, 0·5 to 0·85.

Upper mandible brownish black; lower mandible horny yellow; irides blackish brown; tarsus plumbeous; toes brownish; soles yellow; claws dusky.

The Grey-headed Warbler is very common in the valley of Nepal, where it is a permanent resident. It frequents the central woods and the hills round the valley up to an elevation of about 7,000 feet. It is usually found singly or in pairs, in bushes and bush trees, and has a marked loud chirp. I may recall attention to the fact, long ago pointed out by Mr. Hume, that this species, the true *xanthoschistus* of Hodgson, is the one figured in "Lahore to Yarkand," Plate XX, under the name of *Abrornis albosuperciliaris*.

578.—Abrornis castaneiceps, *Hodgs.*

Two males, Valley, May and June.—Length, 3·9; expanse, 6·0 and 6·3; wing, 2·0 and 2·05; tail, 1·65 and 1·7; tarsus, 0·6 and 0·64; bill from gape, 0·45; bill at front, 0·25 and 3·0; closed wings short of tail, 0·75.

Upper mandible brownish black; lower mandible buff horny or orange; irides dark brown; feet dingy brownish, the soles greenish yellow; claws dusky. There are two distinct bars on the wing; chin to breast bluish white; a pure white band down the belly, 0·35 in breadth on the fresh bird.

This pretty species was only met with in the Sheopuri Forest, in May and June, at an elevation of 7,000 feet. It frequented tree-bushes, and was not at all common.

584.—Henicurus maculatus, *Vig.*

Male, December, Chitlang Valley.—Length, 9·3; expanse, 12·7; wing, 4·2; tail, 4·4; tarsus, 1·2; bill from gape, 1·0; bill at front, 0·7; closed wings short of tail, 2·7.

Male, Markhu Valley, December.—Length, 10·6; expanse, 12·9; wing, 4·15; tail, 5·8; tarsus, 1·2; bill from gape, 1·0; bill at front, 0·73; closed wings short of tail, 4·1.

Bill black; irides dark brown; feet and claws fleshy white. These two specimens must be referred to *maculatus*; the lower surface is exactly the same as in *maculatus* from the Western Himalayas, but in one bird the spots on the nape are round as in *guttatus*, while the white marks lower down are crescentic in shape.

This beautiful Forktail is fairly common in winter on the streams in the Chitlang and Markhu Valleys, and it occurs as low down as Hetoura. I cannot add anything to Dr. Jerdon's excellent description of its habits, except that I have on several occasions seen it fly into a bush and remain concealed for a few minutes.

584 *bis.*—Henicurus guttatus, *Gould.*

Two specimens (of which one was female), Valley, November and December.—Length, 9·4 and 9·6; expanse, 12·2 and 12·5; wing, 3·8 and 4·0; tail, 5·0 and 5·4; tarsus, 1·2; bill from gape, 0·97 and 0·98; bill at front, 0·7; closed wings short of tail, 3·9 and 4·0; weight, 1·25 ozs.

Bill black; irides dark brown; feet pale whitish fleshy. The black on the breast does not come so far down as in Sikim specimens of *guttatus;* the amount of white on the forehead is the same as in that species, *i.e.*, less than in *maculatus;* the interscapulary region is rather sparingly dotted with nearly round spots, but the black feathers lower down have regular crescent-shaped white marks.

The birds are clearly more allied to *guttatus* than to *maculatus*, and for this reason I have entered them here separately. But they are not typical, and I think that a large series of Forktails of this type, collected in the Nepal Valley, would prove that *guttatus* is not entitled to specific separation, unless indeed we suppose that the two species interbreed on the confines of their respective regions.

The Spotted Forktail is tolerably common in the valley of Nepal, adhering closely all the year to the streams descending from the hills; it never approaches the central part of the valley.

586.—Henicurus schistaceus, *Hodgs.*

? *Male, Valley, February.*—Length, 10; expanse, 12; wing, 4; tail, 5·5; tarsus, 1·1; bill from gape, 0·95; bill at front, 0·58; closed wings short of tail, 3·8.

Bill black; irides blackish brown; feet fleshy white; the tarsi livid in front; claws whitish.

This species is a permanent resident in the Nepal Valley, and occurs there in smaller numbers than the Spotted Forktail. It is more shy than the latter, I think, and when disturbed more frequently seeks shelter in a thicket. It was only noticed about the head waters of streams, where the banks were thickly covered with bushes.

587.—Henicurus scouleri, *Vig.*

Female, Valley, February.—Length, 5·0; expanse, 9·1; wing, 2·9; tail, 2·0; tarsus, 0·95; bill from gape, 0·6; bill at front, 0·35; closed wings short of tail, 0·45.

Bill black; irides dark brown; feet and claws pure fleshy white.

This pretty little *Henicurus* is fairly common in the Nepal Valley and the Nawakot district. In its habits it is much

more confiding than *maculatus*, *guttatus* and *schistaceus*, and affects lower and more open parts of the streams than those species. It is usually solitary, and often perches on boulders in company with *R. fuliginosus* and *Ch. leucocephalus*.

589 *bis*.—Motacilla hodgsoni, *G. R. Gr.*

Two males, November and December.—Length, 7·8; expanse, 11·3 and 11·35; wing, 3·7; tail, 3·7 and 3·8; tarsus, 0·9; bill from gape, 0·73 and 0·75; bill at front, 0·56; closed wings short of tail, 2·15 and 2·3.

The bill is large and strong; whole back and sides of neck black; the eye set in a diamond-shaped patch of white.

Two females, November.—Length, 7·5; expanse, 11 and 11·2; wing, 3·53 and 3·55; tail, 3·45 to 3·5; tarsus, 0·9; bill from gape, 0·74; bill at front, 0·52; closed wings short of tail, 2·2 and 2·25.

Nape, sides of neck and rump black; back blackish and dark grey.

A young bird, September.—Length, 8; expanse, 10·8; wing, 3·45; tail, 3·5; tarsus, 0·9; bill from gape, 0·72; bill at front, 0·5; closed wings short of tail, 2·0.

The vertex only blackish; chin white; throat, breast and sides of neck black.

Hodgson's Wagtail is common in the valley of Nepal and the Nawakot district, in winter. It arrives in the valley about the middle of September and leaves towards the end of April.

This species is clearly distinct from *leucopsis (luzoniensis)*, and seems to me to belong to a different section; it is more allied to *personata*, and only resembles *leucopsis* in size and in the assumption of a black back in summer. Observers in India, as a rule, meet with the Wagtails only in winter, and the statement that a certain species acquires a black back in summer, or has that part always grey, cannot aid them greatly in identifying specimens in winter plumage or immature birds. Excluding *maderaspatana*, which cannot be confounded with any of the other species found in India, there are three pairs of Wagtails, distinguished by *constant* characters, which may be arranged as follows:—

A. A white stripe down the sides of the neck, separating the black of the head from that of the breast.
   a. With a black streak across the ear-coverts, through the eye to the base of the bill.
      1. Back always grey; wing, 3·5 to 3·75; bill at front, 0·44 to ? ... ... *occularis*.
      2. Back black ... ... *amurensis*.*

* This (*amurensis*), as I have pointed out elsewhere, is *japonica* of Swinhoe. Whether his name should be allowed to stand is a matter of opinion.—Ed.

b. No black streak through the eye.

3. Back always grey; chin and throat black in summer only; small amount of white on wing; smaller; wing, 3·3 to 3·6; bill at front, 0·4 to 0·46 ... *alba.**

4. Back black in summer, often partly black in winter; chin and throat always white; considerable amount of white on wing; larger; wing, 3·55 to 3·75; bill at front, 0·5 to 3·53 ... ... *leucopsis.*

B. Black of head joined to black of breast, no white streak down sides of neck.

5. Back always grey; less white on wing; smaller; wing, 3·45 to 3·7; bill at front, 0·45 to 0·5 ... ... *personata.*

6. Back black in summer, often partly black in winter; larger amount of white on wing; larger; wing, 3·53 to 3·9; bill at front, 0·52 to 0·56 ... ... *hodgsoni.*

I have given the above table, not with the intention of instructing others, but rather to enable any one to judge whether I have correctly identified the species I obtained in Nepal.

Motacilla amurensis, I only know from the description and plate given by Mr. Seebohm (*Ibis*, 1878, pp. 345-346); it has not been found in India, and is merely included because it pairs so well with *ocularis* in the same way that *leucopsis* does with *alba*, and *hodgsoni* with *personata*. The dimensions of *amurensis* are not given; nor is it stated whether it has the back grey in winter; but this is probable, I imagine.

Winter examples, or young birds, of *hodgsoni* not showing any black on the back can only be distinguished from *personata* by the greater amount of white on the wing, by the conspicuously larger bill, and generally by the larger size.

590.—Motacilla leucopsis, *Gould.*

Three males, September, November, December.—Length, 7·8 to 8·1; expanse, 11·1 to 11·75; wing, 3·73 to 3·75; tail, 3·85 to 4·2; tarsus, 0·9 to 0·95; bill from gape, 0·7 to 0·73; bill at front, 0·5 to 0·53; closed wings short of tail, 2·3 to 2·4.

Crown to nape black; a broad black gorget; chin, throat, and an irregular band down sides of neck, pure white.

Two females, September and December.—Length, 7·4 and 7·7; expanse, 11 and 11·3; wing, 3·55 and 3·62; tail, 3·6 and

* Including *dukhunensis*. Whether this should be retained as distinct is again a matter of opinion.—Ed.

3·8; tarsus, 0·9; bill from gape, 0·7 and 0·75; bill at front, 0·5; closed wings short of tail, 2·05 to 2·2.

The black gorget is narrow; otherwise as in the males.

Two young birds, September.—Length, 7 and 7·3; expanse, 10·5 and 10·7; wing, 3·3 and 3·45; tail, 3·2 and 3·6; tarsus, 0·9; bill from gape, 0·69 and 0·7; bill at front, 0·45; closed wings short of tail, 1·95 and 2·0.

No black on head or nape; black gorget very narrow; otherwise as in adults.

The White-faced Wagtail is common in the valley of Nepal in winter, and the whole way down from the valley to the plains. It arrives in the valley in the beginning of September and departs towards the end of April.

It seems to be generally admitted that the title of *luzoniensis* cannot stand for this species, and, on the other hand, Gould's name of *leucopsis* is certainly applicable to it. Mr. Hodgson's name of *alboides* should not be used, I think, because it seems impossible to make out from his plates the exact species to which he applied that term; indeed, he probably did not distinguish the four distinct species of *Motacilla* which occur in the valley.

Mr. Brooks (S. F., VII., p. 140) doubts whether *leucopsis* would be found in the Nepal Valley in winter; but there can be no question as to the identification of my birds, and I submit that the fact of a species migrating "far south, even to the islands of the Indian seas," is no proof that some of its members do not winter in the Nepal Valley.

591 *bis*.—Motacilla alba, *Lin.*

Two males, November and February.—Length, 7·35 and 7·6; expanse, 10·9 and 11·1; wing, 3·5 and 3·6; tail, 3·75 and 3·8; tarsus, 0·9; bill from gape, 0·66; bill at front, 0·45 and 0·46; closed wings short of tail, 2·25.

In the specimen shot in November there is black gorget only; in the February bird the black spreads up the throat.

Five females, November, February, March and May.—Length, 7·4 to 7·6; expanse, 10·3 to 11; wing, 3·3 to 3·55; tail, 3·7 to 3·8; tarsus, 0·8 to 0·9; bill from gape, 0·63 to 0·65; bill at front, 0·4 to 0·45; closed wings short of tail, 2·25 to 2·45.

In all these specimens there is a white band down the sides of the neck. The bird obtained in November has a broadish black gorget; the February examples have the gorget crescent-shaped; the two horns of the black crescent spreading up the sides of the throat, but there is no black line below the eye, or so-called moustache. The March bird has the black higher up on the throat; and the specimen shot on the 7th May has the

whole throat and chin black, a small spot or two of white only being visible on the latter region.

Immature examples of *leucopsis* are not easily distinguished from birds of this species in winter garb; the only point that is then available for separating them is, as pointed out by Mr. Brooks, the superior amount of white on the wing of *leucopsis*.

I have called my birds *alba* and not *dukhunensis*, because the general opinion (Hume, Dresser, Blanford, Seebohm) seems to be that there is no specific difference between the two forms; moreover, my specimens exhibit very little white on the wing, and I have lately seen a young specimen, shot within Indian limits, with the forehead, sides of neck, and throat strongly tinged with pale yellow—a point considered by Mr. Brooks to be distinctive of *alba*.

This Wagtail is common in the valley of Nepal from October to nearly the middle of May.

591 *quat.*—Motacilla ocularis, *Swinh.*

? Female, Valley, 7th May.—Length, 7·6; expanse, 11; wing, 3·5; tail, 3·65; tarsus, 0·95; bill from gape, 0·67; bill at front, 0·44; closed wings short of tail, 2·25.

Back pure grey; a black patch on the hind head, and from the centre of this a black line passes across the ear-coverts through the eye to the base of the bill; a black patch on the throat and breast; the point of the chin white.

Only one specimen of this Wagtail was obtained in the valley of Nepal in May, when it was probably passing through on the way to its breeding haunts. I have compared it with specimens of *ocularis* in Mr. Hume's museum, and there can be no doubt that it must be referred to that species. As this is last of the *Motacillas* which I have to notice, I may mention that no Wagtail of any kind is ever seen in the Nepal Valley from the middle of May to the beginning of September.

592.—Calobates melanope, *Pall.*

Four males, October, November and December.—Length, 7·0 to 7·53; expanse, 10 to 10·3; wing, 3·23 to 3·35; tail, 3·73 to 3·9; tarsus, 0·75 to 0·85; bill from gape, 0·63 to 0·74; bill at front, 0·4 to 0·5; closed wings short of tail, 2·2 to 2·35.

Three females, September, November and May.—Length, 7·2 to 7·3; expanse, 9·6 to 9·8; wing, 3·1 to 3·15; tail, 3·6 to 3·9; tarsus, 0·75 to 0·8; bill from gape, 0·63 to 0·7; bill at front, 0·46 to 0·5; closed wings short of tail, 2·15 to 2·5.

Bill dusky; grey horny at base of lower mandible; irides brown or dark brown; feet fleshy brown.

A specimen shot in the valley on the 18th April had the head slaty grey; a narrow supercilium, and a conspicuous mandibular stripe pure white; chin and throat black; the feathers slightly margined with whitish; underparts full bright yellow.

This species is common in the valley of Nepal from the beginning of September to the end of April. It was also numerous in winter in the Nawakot district, and along the course of the Markhu river.

It is usually found about the skirts of forests, near tanks and marshy ground, and along the stony banks of the streams; it often perches on trees.

594.—Budytes calcaratus, *Hodgs.*

A Yellow-headed Wagtail was observed in the plains of Nepal, in winter, which was probably this species; but no specimen was obtained. I never saw the species in the valley, although I specially looked out for it; it doubtless occurs there, but it cannot be at all common.

596.—Pipastes maculatus, *Hodgs.*

Eleven specimens, October to April.—Length, 6·13 to 6·6; expanse, 10 to 10·8; wing, 3·2 to 3·5; tail, 2·45 to 2·8; tarsus, 0·75 to 0·85; bill from gape, 0·64 to 0·65; bill at front, 0·42 to 0·46; closed wings short of tail, 1·0 to 1·5.

Upper mandible black; the lower livid at tip, pale fleshy at base; irides dark brown; feet pale reddish fleshy.

The striations on the back vary a good deal in intensity, but all the specimens are typical *maculatus*, and cannot be mistaken for *trivialis*.

This species is very common in winter in the great valley, the Nawakot district, and the Chitlang and Markhu Valleys. It arrives in the Nepal Valley in October and migrates about the third week in April. There is little to be added to Dr. Jerdon's excellent account of its habits. It often runs very easily and gracefully along the horizontal branches of trees in which it has sought refuge, and it always moves its tail up and down when it first perches. The note of alarm is a somewhat flat "*pĭĭt, pĭĭt.*" I shot a solitary bird of this species on open stony ground in the Chitlang Valley.

599.—Corydalla richardi, *Vieill.*

Female, Valley, 3rd March.—Length, 7·5; expanse, 12·5; wing, 3·85; tail, 3·3; tarsus, 1·2; bill from gape, 0·85; bill at front, 0·6; hind toe, 0·5; hind claw, 0·6; closed wings short of tail, 1·8; weight, 1·25ozs.

Upper mandible black; lower mandible fleshy, its base and the gape yellow; irides dark brown; feet reddish fleshy; claws horny brown.

This large Pipit is found in the valley of Nepal only in winter, and even then is decidedly rare. It frequents bare ground and fields of growing corn, and is always wary and difficult of approach.

600.—Corydalla rufula, *Vieill.*

Fifteen males.—Length, 6·1 to 6·75; expanse, 10·1 to 11·1; wing, 3·1 to 3·45; tail, 2·35 to 2·75; tarsus, 0·9 to 1·1; bill from gape, 0·7 to 0·8; bill at front, 0·5 to 0·57; closed wings short of tail, 1·3 to 1·45; hind claw, 0·45 to 0·53.

Seven females.—Length, 6·1 to 6·25; expanse, 9·6 to 10·8; wing, 3·1 to 3·2; tail, 2·3 to 2·6; tarsus, 0·95 to 1·1; bill from gape, 0·67 to 0·75; bill at front, 0·49 to 0·56; closed wings short of tail, 1·3 to 1·45; hind claw, 0·4 to 0·46.

Bill blackish brown or dusky above and at tip; base of lower mandible fleshy or horny yellow; irides dark brown; feet brownish, yellowish or buffy fleshy; claws brown horny.

Winter examples have the feathers above more broadly edged with rufous buff; and specimens obtained in June are a good deal darker above and less fulvous underneath than birds obtained in other months.

The Indian Titlark is exceedingly common in the valley of Nepal throughout the year; it is also common in winter in the Nawakot district and the Markhu Valley. In the Nepal Valley the breeding season seems to extend from March to June. I obtained a fully-fledged nestling on the 4th June, and on the 5th of the same month I got a nest containing three hard-set eggs.

605 *bis.*—Anthus rosaceus, *Hodgs.*

Four specimens, December, February and March.—Length, 6·4 to 6·8; expanse, 10·6 to 11·1; wing, 3·4 to 3·6; tail, 2·6 to 2·85; tarsus, 0·83 to 0·9; bill from gape, 0·66 to 0·7; bill at front, 0·47 to 0·5; closed wings short of tail, 1·1 to 1·4; hind-toe and claw, 0·76 to 0·84.

Bill dusky, blackish on culmen, and fleshy brown at base of lower mandible; irides dark brown; feet brownish fleshy; claws dusky.

In these specimens the axillaries and the edge of the wing at the bend are bright yellow; the chin is unspotted; and the throat and breast show strong black longitudinal stripes.

This Pipit is fairly common in the Nepal and Chitlang Valleys, in winter; it arrives in October and leaves about the

end of March. It was found on grassy slopes, wet fields, and occasionally in fields of growing corn, and was always solitary.

606.—Heterura sylvana, *Hodgs.*

Four males.—Length, 7·05 to 7·4; expanse, 9·8 to 10·5; wing, 3·08 to 3·15; tail, 2·9 to 3·1; tarsus, 0·9 to 0·95; bill from gape, 0·78 to 0·8; bill at front, 0·53 to 0·55; closed wings short of tail, 1·75 to 2·1.

Four females.—Length, 6·9 to 7·1; expanse, 9·4 to 9·8; wing, 2·95 to 3·05; tail, 2·85 to 3·0; tarsus, 0·87 to 0·95; bill from gape, 0·7 to 0·8; bill at front, 0·52 to 0·56; closed wings short of tail, 1·85 to 1·95.

Bill horny black or dusky above and at tip; the middle of the lower mandible pinkish horny, and its base horny yellow; gape fleshy yellow; irides brown; feet pale fleshy; the toes darker; claws brown horny.

The Upland Pipit is a permanent resident on the hills round the valley of Nepal, but never seems to descend to the central part of the valley. It is usually found on grassy slopes at an elevation of about 6,000 feet.

609.—Pteruthius erythropterus, *Vig.*

Male, Valley, June.—Length, 6·7; expanse, 10·4; wing, 3·25; tail, 2·5; tarsus, 1·1; bill from gape, 0·85; bill at front, 0·53; closed wings short of tail, 1·35.

Upper mandible black; the basal half of its margin blue grey; lower mandible bluish grey at tip, leaden blue at base; irides greyish brown; feet pale pinkish fleshy; claws brown horny. The tertiaries are wholly chestnut red on both webs, and are not black tipped as stated by Jerdon.

There is a distinct pink tinge on the lower abdomen, and the breast is washed with grey.

This species was only found in the Sheopuri Forest, at an elevation of about 7,000 feet in June. It frequented the smaller barish branches of the oak trees, pretty high up, and associated in small parties.

615.—Mesia argentauris, *Hodgs.*

Two males, Nimboatar, December.—Length, 6·8 and 7·0; expanse, 9 and 9·1; wing, 2·97 and 3·03; tail, 2·85 and 2·9; tarsus, 0·95 and 1·0; bill from gape, 0·75 and 0·76; bill at front, 0·54 and 0·55; closed wings short of tail, 1·55 and 1·65.

Bill ochre yellow, slightly greenish at the base; irides dark or reddish brown; feet yellow fleshy; claws buff horny.

This Hill Tit was very plentiful in winter from Nimboatar to Hetoura. It frequented the bushes by the road side, in flocks,

and was very active and lively. The birds have a chattering note, and when disturbed they follow one another, in single file, from bush to bush.

616.—Siva strigula, *Hodgs.*

Seven males.—Length, 6·1 to 6·2; expanse, 8·3 to 8·4; wing, 2·7 to 2·75; tail, 2·8 to 2·95; tarsus, 0·95 to 1·0; bill from gape, 0·65 to 0·68; bill at front, 0·4 to 0·42; closed wings short of tail, 1·7 to 1·75.

Six females.—Length, 5·9 to 6·0; expanse, 7·65 to 8·1; wing, 2·55 to 2·65; tail, 2·6 to 2·8; tarsus, 0·9 to 1·0; bill from gape, 0·55 to 0·65; bill at front, 0·38 to 0·42; closed wings short of tail, 1·6 to 1·8.

Upper mandible dusky or blackish; lower mandible grey horny; irides brownish red; feet dull grey or greyish plumbeous; claws brown horny.

The chestnut on the base of the uropygials extends down to within 1·0 to 1·4 of the tips of the feathers. The female is smaller than the male, and has the colours rather more dull.

These specimens have the colors deeper and brighter than examples from Simla. I cannot understand why Dr. Jerdon considered that this species and the next had a "Parian bill" with the "tip entire;" *strigula* has the tip of the upper mandible distinctly notched, produced and bent over the tip of the lower.

This Hill-Tit is a permanent resident on the hills round the Nepal Valley, at elevations of from 6,000 to 7,500 feet. It is very common in the Sheopuri Forest, frequenting moderate-sized trees, and tree-bushes, in small parties. In winter it often feeds on berries.

617.—Siva cyanouroptera, *Hodgs.*

Male, Valley, July.—Length, 6·0; wing, 2·6; tail, 2·8; tarsus, 0·85; bill from gape, 0·7; bill at front, 0·55; closed wings short of tail, 2·0.

Bill grey horny; brownish about the nostrils, and the base of the lower mandible yellow; irides brown; feet fleshy; claws horny brown. The tip of the upper mandible is strongly notched. Winglet tipped white; upper parts tinged rusty; lower surface pale drab, albescent on the middle of the abdomen.

The Blue-winged Hill-Tit appears to be rare in the valley of Nepal. The only specimen secured was obtained on the hills bounding the valley to the north.

618.—Minla ignotincta, *Hodgs.*

Two males, Valley, May.—Length, 5·2 and 5·3; expanse, 2·35 and 2·6; tail, 2·3 and 2·4; tarsus, 0·7 and 0·8; bill from

gape, 0·55 and 0·62; bill at front, 0·36 and 0·43; closed wings short of tail, 1·25 to 1·6.

Upper mandible black; lower mandible bluish grey, yellowish at base; gape greenish yellow; irides pale yellow and yellowish white; feet dingy greenish yellow; claws yellow horny. The mantle is dull maroon; the primaries are margined with crimson on their basal thirds, the distal two-thirds being margined yellow, and they are not tipped with crimson; the chin and throat are white, the rest of the under parts being dull yellow.

These specimens are identical with Darjeeling examples in Mr. Hume's Museum.

This species is fairly common in the Sheopuri Forest in summer, at an elevation of about 6,500 feet; and it certainly breeds there.

619.—Minla castaneiceps, *Hodgs.*

Three males, May and June.—Length, 4·2 to 4·5; expanse, 6·9 to 7·1; wing, 2·2 to 2·4; tail, 1·7 to 1·9; tarsus, 0·75 to 0·8; bill from gape, 0·55 to 0·6; bill at front, 0·36 to 0·4; closed wings short of tail, 0·7 to 0·8.

Two females, May.—Length, 4·2 and 4·5; expanse, 6·7 and 7·1; wing, 2·2 and 2·34; tail, 1·65 and 1·8; tarsus, 0·75 and 0·8; bill from gape, 0·54 and 0·55; bill at front, 0·35; closed wings short of tail, 0·75 and 0·85.

Upper mandible dusky; the lower livid, yellow at base; irides crimson (in one bird dark brownish red); gape yellow; feet dingy greenish yellow; claws yellowish horny. The quills black, the first and second primaries narrowly margined on the outer web with white; chin and throat yellowish; the abdomen with an olivaceous tinge. Identical with Darjeeling specimens.

This pretty little bird is common in summer on the hills round the Nepal Valley at the same elevation as *ignotincta*. It was common in the Sheopuri Forest, frequenting tree-bushes in company with *M. ignotincta*, *Yuhina gularis*, *Sylviparus modestus*, &c. None of the Hill-Tits were ever noticed in the central part of the valley.

623.—Ixulus flavicollis, *Hodgs.*

Seven males.—Length, 5·1 to 5·4; expanse, 7·5 to 8·2; wing, 2·43 to 2·6; tail, 2 to 2·25; tarsus, 0·75 to 0·8; bill from gape, 0·56 to 0·62; bill at front, 0·38 to 0·45; closed wings short of tail, 1·0 to 1·3.

Four females.—Length, 4·8 to 5·2; expanse, 7·5 to 7·9; wing, 2·4 to 2·53; tail, 2 to 2·1; tarsus, 0·7 to 0·8; bill from

gape, 0·56 to 0·6; bill at front, 0·3 to 0·45; closed wings short of tail, 1·1 to 1·2.

Upper mandible brownish black; lower mandible fleshy brown, greyish horny at base; irides light to dark brown, sometimes reddish brown; feet fleshy buff; claws pale brown horny. The sexes hardly differ in colour. The upper surface is tinged with olive; the moustache is darker in the breeding season (being then nearly black) than in winter; the lores are dark brown; and there is a conspicuous ring of white feathers round the eye; the flanks are pale olivaceous streaked with white.

The Yellow-naped Flowerpecker is common, and a permanent resident, on the hills round the valley of Nepal; it is also tolerably common in the upper part of the Chitlang Valley in winter. It is found at an elevation of not more than 5,000 feet in winter, but in summer it is only met with at elevations of from 7,000 to 8,000 feet; it does not occur in the central part of the Great Valley.

626.—Yuhina gularis, *Hodgs.*

Five females.—Length, 5·65 to 6·15; expanse, 8·9 to 9; wing, 2·8 to 3·05; tail, 2·2 to 2·45; tarsus, 0·85 to 0·9; bill from gape, 0·73 to 0·78; bill at front, 0·5 to 0·55; closed wings short of tail, 1 to 1·3.

Seven females.—Length, 5·65 to 6·0; expanse, 8·2 to 8·8; wing, 2·7 to 2·9; tail, 2·2 to 2·4; bill from gape, 0·7 to 0·75; bill at front, 0·5 to 0·55; closed wings short of tail, 1·0 to 1·35.

Upper mandible black; lower mandible horny brown; irides brown or dark brown; feet deep buff or orange; claws dusky. The colour of the throat varies a good deal, but there is no appreciable difference in colour between the sexes.

This Flowerpecker is a permanent resident on the hills round the Nepal Valley at elevations of from 7,000 to 8,000 feet. It is very common in the Sheopuri Forest at all seasons, associating in flocks, and frequenting bushes and the lower branches of trees; it is not at all shy, keeps up a continual twitter as it moves about, and often clings to moss-covered branches. It feeds on berries in winter, and often associates with *Yuhina occipitalis*.

627.—Yuhina occipitalis, *Hodgs.*

Four males, February.—Length, 5·1 to 5·2; expanse, 7·7 to 7·8; wing, 2·5 to 2·54; tail, 2·0 to 2·25; tarsus, 0·7 to 0·75; bill from gape, 0·67 to 0·7; bill at front, 0·5 to 0·53; closed wings short of tail, 0·9 to 1·25.

Two females, February and June.—Length, 5·0 and 5·15; expanse, 7·3 and 7·5; wing, 2·4 and 2·45; tail, 1·95 and 2·0; tarsus, 0·7 and 0·8; bill from gape, 0·68 and 0·7; bill at front, 0·5 and 0·52; closed wings short of tail, 0·8 and 1·0.

Bill reddish brown; irides deep brown; feet orange buff; claws horny brown. There is a marked white ring round the eye, and the black mandibular stripe is always distinct.

The remarks made under the head of *Y. gularis* apply, *mutatis mutandis*, to this species; it occupies, however, a rather higher zone, and has a distinct and more pleasant note.

631.—Zosterops palpebrosa, *Tem.*

Sixteen specimens, Valley.—Length, 3·9 to 4·5; expanse, 6·3 to 7·0; wing, 2·0 to 2·2; tail, 1·4 to 1·75; tarsus, 0·56 to 0·65; bill from gape, 0·5 to 0·57; bill at front, 0·35 to 0·46; closed wings short of tail, 0·65 to 1·1.

Bill black, base of lower mandible bluish grey; irides yellowish hazel; feet dark plumbeous; claws brownish horny. All these specimens are typical *palpebrosa*; *Z. simplex*, Swinhoe, is a smaller bird, and more green on the upper parts. Mr. Blanford gives the following dimensions of examples of *simplex* from Sikim: Wing, 1·95; tail, 1·33 to 1·45; tarsus, 0·6 to 0·62; bill from forehead, 0·35 to 0·37.

The White-eyed Tit is exceedingly common in the valley of Nepal throughout the year. It is found in gardens, groves and all the central woods, but never ascends the hills. It breeds in the valley from April to June. I secured fully-fledged nestlings on the 3rd May, and took a nest containing two fresh eggs on the 28th of the same month.

632.—Sylviparus modestus, *Burt.*

Five specimens, February—June.—Length, 3·4 to 3·85; expanse, 6·4 to 7·5; wing, 2·15 to 2·4; tail, 1·3 to 1·5; tarsus, 0·6 to 0·67; bill from gape, 0·32 to 0·42; bill at front, 0·23 to 0·25; closed wings short of tail, 0·25 to 0·45.

Bill plumbeous, darker above and at tip; irides dark brown; feet dark plumbeous; claws leaden horny.

This Tit is fairly common on the hills round the valley at elevations of from 6,000 to 8,000 feet. In the Sheopuri Forest it is often seen in parties, hunting in tree bushes and small trees.

634.—Ægithaliscus erythrocephalus, *Vig.*

Male, May.—Length, 4·1; expanse, 6·1; wing, 2·03; tail, 2·0; tarsus, 0·7; bill from gape, 0·37; bill at front, 0·23; closed wings short of tail, 1·2.

Three females, May.—Length, 3·9 to 4; expanse, 6·0 to 6·1; wing, 1·95 to 1·98; tail, 1·8 to 2·05; tarsus, 0·65 to 0·66; bill from gape, 0·35 to 0·36; bill at front, 0·23 to 0·25; closed wings short of tail, 0·9 to 1·15.

Bill black; gape fleshy; irides pale yellow or yellowish creamy; feet buffy yellow; claws livid.

The Red-headed Tit was tolerably common in the Sheopuri Forest in May, at an elevation of about 7,000 feet. It was then found in pairs frequenting small trees and bushes. It does not occur in the central part of the Nepal Valley.

644.—Parus monticolus, *Vig.*

Eight males.—Length, 5 to 5·2; expanse, 8·25 to 8·6; wing, 2·6 to 2·73; tail, 2·3 to 2·4; tarsus, 0·7 to 0·75; bill from gape, 0·47 to 0·54; bill at front, 0·34 to 0·4; closed wings short of tail, 1 to 1·1.

Six females.—Length, 4·65 to 5·05; expanse, 7·9 to 8·2; wing, 2·5 to 2·6; tail, 2·1 to 2·3; tarsus, 0·65 to 0·74; bill from gape, 0·45 to 0·5; bill at front, 0·33 to 0·4; closed wings short of tail, 1 to 1·1.

Bill black; irides dark brown; feet plumbeous; claws dusky.

The rump is always grey, contrasting with the olive green back; the outer web of the outer tail feather is white on the distal two-thirds, black at the base.

This pretty Tit is very common on the hills round the Nepal Valley throughout the year, at elevations of from 5,000 to 8,000 feet; but it never enters the central part of the valley. It is also common in the upper part of the Chitlang Valley in winter.

645.—Parus nipalensis, *Hodgs.*

? Female, Devighat, Nawakot district, November.—Length, 5·5; expanse, 8·1; wing, 2·73; tail, 2·6; tarsus, 0·65; bill from gape, 0·45; bill at front, 0·4; closed wings short of tail, 1·45.

Bill brownish black, pale at tip; irides deep brown; feet pale bluish grey; claws bluish grey horny, dusky at tips.

The Indian Grey Tit was only met with in Nepal, in the Nawakot district, in November. There it was common along the valley of the Trisul Ganga, in orchards and small trees by the road side.

647.—Machlolophus xanthogenys, *Vig.*

Fifteen specimens.—Length, 4·7 to 5·3; expanse, 7·9 to 8·7; wing, 2·5 to 2·8; tail, 1·9 to 2·35; tarsus, 0·6 to 0·7; bill

from gape, 0·45 to 0·5; bill at front, 0·33 to 0·43; closed wings short of tail, 0·85 to 1·15.

Bill black; irides brown to blackish brown; feet dark bluish plumbeous; claws plumbeous.

The Yellow-cheeked Tit is a very common and familiar bird in the Nepal Valley throughout the year. It frequents all the woods and gardens in the central part of the valley, where it seems to replace *monticolus*, and is found at the foot of the hills. It is tolerably common in winter in the Chitlang and Markhu Valleys.

650.—Melanochlora sultanea, *Hodgs.*

Male.—Length, 8·2; expanse, 13·3; wing, 4·5; tail, 4·2; tarsus, 0·86; bill from gape, 0·7; bill at front, 0·6; closed wings short of tail, 2·2.

Female.—Length, 7·5; expanse, 12·25; wing, 4·2; tail, 3·7; tarsus, 0·8; bill from gape, 0·68; bill at front, 0·56; closed wings short of tail, 1·75.

Bill black; irides dark brown; feet plumbeous; claws dusky.

This fine Tit was fairly common in December, in the bushes and trees by the road side, from Nimboatar to Hetoura.

660.—Corvus culminatus, *Sykes.*

Four males.—Length, 18·7 to 19; expanse, 3·4 to 3·7; wing, 11·5 to 12·7; tail, 7 to 7·4; tarsus, 1·9 to 2·13; bill from gape, 2·3 to 2·45; bill at front, 2·15 to 2·35; nostril to tip of bill, 1·64 and 1·65; depth of closed bill at nostril, 0·8 to 0·9; closed wings short of tail, 1 to 1·75; weight, 1lb. to 1lb. 5 ozs.

Two females.—Length, 17·25 and 17·7; expanse, 34; wing, 11 and 11·3; tail, 7·15 and 7·2; tarsus, 1·9 and 2; bill from gape, 2·15 and 2·2; bill at front, 2·05 and 2·15; anterior margin of nostril to tip of bill, 1·4; depth of closed bill at nostril, 0·8 and 0·84; weight (one specimen), 14 ozs.

All these specimens are adult, with the tail fully grown; the gloss on the feathers is principally purple, and the bill is as strong as in examples from the plains of Upper India.

The Indian Corby is common in the central part of the Nepal Valley throughout the year; it is also common in winter in the Nawakot district and the plains of Nepal. It is found along the banks of streams, principally in the vicinity of burning ghats, and in woods. It is usually found singly or in pairs, never congregates to circle high up in the air, after the manner of the Black Hill Crow, and its caw is as distinct from that of *intermedius* as it is from the voice of *C. splendens*. It breeds in March and April in the central woods of the valley.

661.—Corvus intermedius, *Adams.*

(1) *Male, Valley,* 6,000 *feet, August.*—Expanse, 40·5 ; wing, 13·3 ; tarsus, 2·4 ; bill from gape, 2·4 ; bill at front, 2·32 ; anterior margin of nostril to tip of bill, 1·55 ; depth of closed bill at nostril, 0·85 ; closed wings short of tail, 1·65 ; weight, 1lb. 4ozs.

(2) *Female, Valley,* 6,000 *feet, August.*—Expanse, 37·5 ; wing, 12·4 ; tarsus, 2·1 ; bill from gape, 2·4 ; bill at front, 2·26 ; closed wings short of tail, 2·0.

The tail is imperfect, not fully grown.

(3) *Female, Sheopuri,* 7,500 *feet, June.*—Length, 20·4 ; expanse, 38·25 ; wing, 12·9 ; tail, 9·0 ; tarsus, 2·1 ; bill from gape, 2·3 ; bill at front, 2·25 ; nostril to tip of bill, 1·5 ; depth of closed bill at nostril, 0·84 ; closed wings short of tail, 2·5 ; outer tail feather short of uropygials, 1·9.

In (1) the tail feathers are not fully grown, but, imperfect as it is, the tail measures 8·9, the outer feathers being 1·5 short of the central pair ; in (2) the tail is still more imperfect (the central feathers have not nearly attained their full length), and it measures 8·0 ; (3) has the wings and tail perfect and fully grown. The gloss is rather more green than purple, and the culmen is somewhat less bowed than in the specimens I have entered as *culminatus ;* the tail, it will be noticed, is considerably longer than that of *culminatus,* and this seems to be the only tangible point by which *skins* of the two forms can be separated.

The Black Hill Crow is common on the mountains round the valley of Nepal at elevations of from 6,000 to 9,000 feet. It is generally seen in small parties, and has a regular habit of assembling in flocks of fifty or sixty birds, usually in the afternoon, and circling round and round in the air near the crest of the hills. After pursuing this exercise for some time the flock breaks up, and the birds take different directions in twos and threes. Its caw is quite different from that of *culminatus,* more deep and hoarse, recalling the voice of the Raven. I first heard of this crow in Nepal from the natives, who told me that a black crow was found on the hills, exactly the same as the species found in the level parts of the valley, except that its voice was different. The breeding season of this bird seems to be later than that of *culminatus.* I shot a female off the nest, high up in an oak tree in the Sheopuri Forest, in June, at an elevation of over 7,000 feet.

Mr. Sharpe would, I imagine, assign the name of *levaillanti* to the birds I have called *intermedius,* the latter title being, according to his view, a synonym of *culminatus.* But Adams'

description of the habits and localities of his *Corvus intermedius* so obviously refer to the long-tailed black Hill-Crow, that I doubt whether Mr. Sharpe's view can be accepted. If *levaillanti*, Lesson, is the oldest name for the Hill-Crow, then *intermedius* must be a synonym of *levaillanti*, and not of *culminatus*, the crow of the plains.

I have not entered *intermedius* as distinct from *culminatus* in ignorance of the weighty arguments brought forward by Mr. Hume (Lahore to Yarkand, pp. 237-239 ; S. F., II., pp. 243-4, and V., pp. 461-469) in support of his view that there is no specific difference between the two forms. I am mainly inclined to consider the birds worthy of separation because their habits and voice are so different. Mr. Brooks considers that the Hill Crow has the tail longer (often by fully one inch) than the bird of the plains, and the caw appreciably different. The point as to habits and voice is conceded by Mr. Hume, and my specimens bear out Mr. Brooks' view as to the length of the tail ; but, in face of the long list of careful measurements given by Mr. Hume of specimens from hills and plains, it seems impossible to maintain that the hill birds have the tail *constantly* longer. And if no constant diagnostic point can be laid down, by which *skins* of the two supposed forms can be separated, it follows clearly, I think, that only one species can be recognized.

663.—Corvus splendens, *Vieill.*

Three males.—Length, 17·2 to 17·8, expanse, 34·5 to 35 ; wing, 11·7 to 11·75 ; tail, 7·3 to 7·5 ; tarsus, 1·73 to 1·8 ; bill from gape, 2·05 to 2·1 ; bill at front, 1·93 to 1·95 ; closed wings short of tail, 1·4 to 1·7.

Three females.—Length, 17 to 17·5 ; expanse, 32 to 33 ; wing, 10·8 to 11 ; tail, 7 to 7·3 ; bill from gape, 1·95 to 2·0 ; bill at front, 1·84 to 1·9 ; closed wings short of tail, 1·5 to 2·2.

This Crow is exceedingly common in the Nepal Valley, the Nawakot district, the Hetoura Dún, Bichiakoh, and the plains of Nepal. It is one of the most common birds in the valley throughout the year, and indeed occurs in such numbers there as to be quite a pest. It is found all over the central part of the valley, but never ascends the hills. Its habits have been so exhaustively described that nothing further need be said on that head ; but I may note that I have, on several occasions, seen it capture and eat nestlings of *Passer montanus*. In the valley it lays in May and June ; some twenty nests were once examined on the 23rd June, and half the number then contained young birds.

669.—Garrulus bispecularis, *Vig.*

Male, May.—Length, 12·5 ; expanse, 19·5 ; wing, 6·4 ; tail, 5·8 ; tarsus, 1·4 ; bill from gape, 1·25 ; bill at front, 0·92 ; closed wings short of tail, 2·7.

Female, May.—Length, 12·25 ; expanse, 19 ; wing, 6·3 ; tail, 5·5 ; tarsus, 1·4 ; bill from gape, 1·25 ; bill at front, 0·95 ; closed wings short of tail, 2·35.

Bill dusky or blackish horny ; margin of eyelids dull brick red ; irides brown and reddish brown ; feet pale pinkish fleshy ; claws livid.

Dr. Jerdon does not mention the fine maroon patch on the inner part of the wing in this species.

I only found this handsome Jay in the Sheopuri Forest, in May and June, at an elevation of about 7,000 feet. It was found singly or in pairs feeding amidst dense bushes near the path, and, on being disturbed, it flew up into the nearest tree ; it was not common.

671.—Urocissa occipitalis, *Bly.*

Four males, May—July.—Length, 26 to 28 ; expanse, 24 to 25·5 ; wing, 7·9 to 8·3 ; tail, 17·8 to 19·1 ; tarsus, 1·8 to 2 ; bill from gape, 1·65 to 1·7 ; bill at front, 1·45 to 1·5 ; closed wings short of tail, 14 to 15·8.

Three females, May—July.—Length, 25·8 to 26 ; expanse, 23 to 24 ; wing, 7·7 to 7·8 ; tail, 17 to 18 ; tarsus, 1·7 to 2 ; bill from gape, 1·65 to 1·7 ; bill at front, 1·4 to 1·45 ; closed wings short of tail, 14 to 14·6.

Bill coral red, orange at tip ; orbital skin fleshy yellow ; irides brown in three specimens, in the others not noted ; feet bright orange red, or coral red.

Three young birds, July, August and October.—Length, 20·3 to 20·7 ; expanse, 23 to 24 ; wing, 7·4 to 7·8 ; tail, 11·8 to 12 ; tarsus, 1·6 to 1·9 ; bill from gape, 1·63 and 1·66 ; bill at front, 1·34 and 1·4 ; closed wings short of tail, 8·2 to 9·0.

Bill yellow along culmen and at tip, the rest livid, or dusky in parts ; irides brown ; feet orange ; claws dusky.

I have compared these birds with a large series of *occipitalis*, and with a few specimens of so-called *magnirostris* from Burmah, in Mr. Hume's museum, after reading all that has been written about the latter form. Certainly if *magnirostris* be distinct, some of my specimens would have to be referred to it ; but I venture to think that *magnirostris* may be safely and profitably considered a synonym of *occipitalis*. The only supposed constant differences by which the Burmese race could be separated from the Himalayan, have been narrowed down

to the colour of the bill, feet and irides (cf. S. F., VI., p. 385.) A reference to my notes above will, I believe, show that even as to the colours of the soft parts no such constant difference exists Of course, it is impossible to make certain that different observers will note the colours of a bird in precisely the same words; but I can say that at least three of my Nepal specimens have the bill even larger and deeper than in specimens from Burmah; while the colour of the bill and feet, in the dry state, is as deep red as the finest Burmese birds.

The Red-billed Blue Magpie is tolerably common in the valley of Nepal throughout the year, at elevations of from 4,500 to 7,000 feet. It is usually found in the woods and forests, particularly about cleared spaces in the latter, away from human habitations; but it is frequently seen close to hamlets and cowsheds, and on one occasion I found it breeding within a few yards of some houses on the hills. Its cry is very peculiar, a note singularly high and squeaking for such a bird.

672.—Urocissa flavirostris, *Bly.*

Male, Valley, July.—Length, 24; expanse, 22; wing, 7·3; tail, 16·2; tarsus, 1·9; bill from gape, 1·66; bill at front, 1·4; closed wings short of tail, 12·8; weight, 5·5 ozs.

Female, Valley, June.—Wing, 7·1; tarsus, 1·7; bill from gape, 1·6; bill at front, 1·4.

Bill pale waxy yellow; irides (in male only) *bright yellow;* feet bright orange yellow.

This species is not included in the first edition (1846) of the B. M. Catalogue of Mr. Hodgson's collections; it is entered in the second edition (1863), but the locality from which it was obtained is not stated.

The Yellow-billed Blue Magpie is found on the hills round the Nepal Valley, and in the Nawakot district, but does not appear to be at all common. A species of *Urocissa* is fairly common about Bichiakoh, but whether it is *flavirostris* or *occipitalis* I cannot say, as no specimens were secured.

674.—Dendrocitta rufa, *Scop.*

Male, near Hetoura, December.—Length, 16·6; expanse, 19·4; wing, 6·55; tail, 9·5; tarsus, 1·25; bill from gape, 1·35; bill at front, 1·02; closed wings short of tail, 7·0.

Bill black, bluish grey horny at base; irides dark brownish red; feet dusky. Rump decidedly paler than the upper back; outer webs of secondaries ashy grey, darker than the coverts, with which they contrast markedly; uropygials black at tip, a pale greyish band above this, and the rest of the feathers ashy grey; lateral tail feathers with a broad subterminal black band, conspicuously tipped with fulvous.

This species was fairly common in winter in the forests from Hetoura to Bichiakoh; and in the plains of Nepal about mangoe topes and Pipal trees.

676.—Dendrocitta himalayensis, *Bly.*

Ten males.—Length, 15 to 16·5; expanse, 16·6 to 17·6; wing, 5·3 to 5·75; tail, 8·6 to 9·5; tarsus, 1·05 to 1·2; bill from gape, 1·25 to 1·4; bill at front, 1·05 to 1·25; closed wings short of tail, 6·4 to 7·8.

Seven females.—Length, 14 to 15·6; expanse, 16·5 to 17; wing, 5·3 to 5·5; tail, 7·1 to 8·8; tarsus, 1·03 to 1·2; bill from gape, 1·2 to 1·3; bill at front, 1·05 to 1·2; closed wings short of tail, 5·1 to 7.

Bill black; irides reddish brown; feet brownish black, in young birds leaden black; claws dusky.

The Himalayan Tree-pie is very common in the valley of Nepal and about Pharphing throughout the year; and it is common in winter in the Nawakot district, the Markhu Valley, and from Bhimphedi to Hetoura, but not lower down. In the valley it is common in the open forest at the foot of the hill, not ascending much higher than about 6,000 feet, and in the central woods. It has a number of notes, and one cry very commonly heard may be syllablized into *Kokil, ko—ko—ko;* I never happened to see it feeding on the ground, but often found it in small bushes.

681.—Sturnus vulgaris, *Lin.*

Female, Plains, December.—Length, 8·7; expanse, 15·3; wing, 5·1; tail, 2·65; bill from gape, 1·35; bill at front, 1·0; closed wings short of tail, 0·56.

Bill dusky, pale horny along the margins; irides dark brown; feet dark reddish brown.

The Common Starling was only found in small numbers in the plains of Nepal, in winter. It frequented stubble fields in company with *Acridotheres* and *Sturnopastor*.

683.—Sturnopastor contra, *Lin.*

Male, Plains, December.—Length, 6·4; expanse, 15; wing, 4·7; tail, 2·9; tarsus, 1·3; bill from gape, 1·45; bill at front, 1·17; closed wings short of tail, 1·35.

Bill yellowish horny, red at base; orbital skin orange-red; irides yellow; feet yellowish fleshy; claws dusky. Under tail-coverts ashy, and ear patch sullied white.

The Pied Pastor is fairly common about houses in the Hetoura Dun; and is very common in the Terai and plains

of Nepal, in winter. It was generally seen in pairs, about fields, roads and grassy plots, associated with Mainas and Starlings.

684.—Acridotheres tristis, *Lin.*

Three males.—Length, 10·3 to 10·6; expanse, 18 to 19; wing, 5·8 to 5·9; tail, 3·5 to 3·8; tarsus, 1·45 to 1·6; bill from gape, 1·25 to 1·3; bill at front, 0·85.

Four females.—Length, 9·7 to 10; expanse, 16·7 to 17·2; wing, 5·3 to 5·65; tail, 3·1 to 3·5; tarsus, 1·45 to 1·5; bill from gape, 1·2 to 1·23; bill at front, 0·76 to 0·8; closed wings short of tail, 1·25 to 1·6.

Bill yellow, bluish or greenish at base; orbital skin bright yellow; feet lemon yellow to dull pale orange.

This species is excessively common in the Nepal Valley, the Nawakot district, the Chitlang and Markhu Valleys, Hetoura, Bichiakoh, and the Terai and plains of Nepal. In fact it is abundant in every part of Nepal I have visited, from the plains to an elevation of at least 6,000 feet, wherever human habitations are to be found, and where thick forest does not prevail. In the Great Valley it is a permanent resident, and together with *Corvus splendens* and *Passer montanus* (rather an unusual alliance as far as the latter species is concerned) first attracts the attention of a visitor interested in birds.

686.—Acridotheres fuscus, *Wagl.*

Four males.—Length, 9·4 to 9·8; expanse, 15·2 to 15·8; wing, 4·9 to 5·0; tail, 3·1 to 3·6; tarsus, 1·35 to 1·5; bill from gape, 1·15 to 1·2; bill at front, 0·7 to 0·8.

Three females.—Length, 9 to 9·2; expanse, 14·25 to 15·4; wing, 4·8 to 4·85; tail, 3·0 to 3·2; tarsus, 1·3 to 1·4; bill from gape, 1·15 to 1·17; bill at front, 0·7 to 0·73; closed wings short of tail, 1·5 to 1·7.

Bill orange, black at base; irides bright yellow; feet orange or orange yellow.

This species is common and a permanent resident in the valley of Nepal, but does not occur in such great numbers as *A. tristis*. It is also found in tolerable abundance in the Nawakot district and the Hetoura Dun in winter. It breeds in the valley in May and June, laying in holes, in trees or walls; the eggs are very like those of *A. tristis*, but smaller—not so broad. I noticed on two or three occasions an Albino of this species, which was greatly persecuted by the crows.

688.—Temenuchus malabaricus, *Gm.*

Five males.—Length, 7·5 to 7·8; expanse, 11·9 to 12·6; wing, 3·7 to 4; tail, 2·35 to 2·7; tarsus, 0·9 to 0·95; bill from

gape, 1·0 ; bill at front, 0·7 to 0·75 ; closed wings short of tail, 1·2 to 1·4.

Three females.—Length, 7 to 7·4 ; expanse, 11·8 to 12·25 ; wing, 3·7 to 4·0 ; tail, 2·3 to 2·4 ; tarsus, 0·85 to 0·9 ; bill from gape, 0·9 to 1 ; bill at front, 0·68 to 0·7 ; closed wings short of tail, 1·0 to 1·1.

Bill yellow at tip, green in the middle, and dark blue at the base ; interior of mouth dark blue ; eyelids dark blue ; irides milky white to pale sky blue ; tarsi yellowish fleshy ; toes brown fleshy ; claws dusky horny.

Males have the underparts more deeply coloured than the females. The young bird (August) has only a faint tinge of rufous on the lower part of the abdomen ; bill yellowish horny ; base of lower mandible paler ; irides pale blue ; feet brownish fleshy.

The Grey-headed Maina is common in the central woods of the Nepal Valley from the end of April to the end of September.

693.—Eulabes intermedia,* *A. Hay.*

This Hill Maina is common in the forests about Hetoura and Bichiakoh, but does not ascend the hills. It is a very common and favourite cage bird in Nepal.

694.—Ploceus baya, *Bly.*

Ten males, Valley, April—July.—Length, 5·4 to 5·9 ; expanse, 9·2 to 9·65 ; wing, 2·85 to 3·05 ; tail, 2 to 2·2 ; tarsus, 0·8 to 0·85 ; bill from gape, 0·7 to 0·75 ; bill at front, 0·7 to 0·75 ; closed wings short of tail, 1·1 to 1·4.

Eight females, Valley, April—August.—Length, 5·3 to 5·8 ; expanse, 8·9 to 9·1 ; wing, 2·73 to 2·8 ; tail, 1·9 to 2·1 ; tarsus, 0·8 to 0·85 ; bill from gape, 0·7 to 0·75 ; bill at front, 0·7 to 0·72 ; closed wings short of tail, 1·0 to 1·2.

In the female at all seasons, and in the male in winter plumage, the bill is brownish horny, yellow at base of lower mandible ; about the end of April the bill of the male is dusky horny ; and in May, June and July it is black, with a narrow yellowish line at the base of the lower mandible ; gape yellow or fleshy ; irides deep brown ; feet dark fleshy or brownish fleshy.

The male in breeding plumage has the head bright yellow—and some of the feathers of the interscapulary region and of the rump edged with yellow. The breast is blotched, to a greater or less extent, with yellow, and in some cases there is a complete band of yellow across the breast.

Mr. Blanford (J. A. S. B., Vol. XLI., Part II., 1872, p. 167) gives the following dimensions of six specimens of *Ploceus baya*

* Not really specifically distinct, in my opinion, from *E. javanensis*.—Ed.

from Calcutta, Sikim and Cachar: Wing, 2·85 to 3·05; tail, 1·87 to 2·15; tarsus, 0·82 to 0·9; bill at front, 0·69 to 0·77. Of the smaller form, Jerdon's *baya*, he gives the measurements:—Wing, 2·6 to 2·75; tail, 1·7 to 1·8; tarsus, 0·79 to 0·9; bill at front, 0·65 to 0·69. Mr. Hume (S. F., VI., pp. 398-401) has fully discussed the differences between the two forms, and shown that Blyth's name of *baya* must apply to the larger species. My birds are all clearly referable to the large species, and although the adult breeding males have much more yellow on the breast than in any specimen seen by Mr. Mandelli or Mr. Hume from Sikim, still they have much less yellow on the back and breast than in the Continental species.

The Weaver Bird is common in the Nepal Valley from the middle of April to the end of September. It is always social, and frequents rice fields, gardens, and the vicinity of hamlets. It is found all over the central part of the valley, especially about large solitary trees—pipals and palms—but does not ascend the hills. It always breeds in company, the nests being attached to palm trees, solitary pipals, but more especially to the fronds of the fan palm of the valley, *Chæmerops martiana*. It lays from May to July.

698.—Amadina rubronigra, *Hodgs.*

Twelve specimens, Valley.—Length, 4·4 to 4·65; expanse, 7·1 to 7·5; wing, 2·1 to 2·2; tail, 1·5 to 1·6; bill from gape, 0·4 to 0·45; bill at front, 0·48 to 0·5; closed wings short of tail, 0·95 to 1·1.

Bill leaden blue; irides dark brown; feet dark plumbeous.

Young birds, obtained about the middle of September, are uniform earthy, with, in some specimens, a small spot or two of chestnut appearing on the breast. The adults of this species have the bills stronger and deeper than in *punctulata*. The young birds above mentioned have the bill about the same size as in *punctulata*, adult.

This Munia is common in the central part of the Nepal Valley from the end of May to October, frequenting rice fields and gardens. A nest taken on the 13th July in the Residency grounds was placed in a thorny hedge; it was a large globular structure with a trumpet-shaped entrance at one side; it contained five white eggs, slightly set.

699.—Amadina punctulata, *Lin.*

Twelve specimens, Valley.—Length, 4·3 to 4·9; expanse, 6·7 to 7·0; wing, 2·1 to 2·25; tail, 1·5 to 1·75; bill from gape, 0·4 to 0·45; bill at front, 0·43 to 0·5; closed wings short of tail, 1 to 1·3.

Bill plumbeous ; the upper mandible darker ; irides reddish brown and crimson ; feet plumbeous.

About half of these specimens have all the feathers of the upper surface pale shafted ; and the rump is grey, dark barred.

The Spotted Munia is as common in the valley of Nepal as the last species, but arrives earlier—quite at the beginning of May. All its habits are very well known.

702.—Amadina acuticauda, *Hodgs.*

Six specimens, Valley, February.—Length, 4·3 to 4·65 ; expanse, 6·3 to 6·8 ; wing, 1·9 to 2·1 ; tail, 1·7 to 2·0 ; tarsus, 0·5 to 0·58 ; bill from gape, 0·4 to 0·43 ; bill at front, 0·38 to 0·42 ; closed wings short of tail, 1·05 to 1·3.

Upper mandible horny black, the lower plumbeous ; irides dark brown ; feet dark plumbeous ; claws dusky.

I shot the six specimens of the Himalayan Munia entered above, in the valley of Nepal, on the 15th and 17th February ; and, strangely enough, I never observed it there at any other time. It was found in large flocks frequenting euphorbia hedges, bamboo clumps, and solitary pipal trees.

706.—Passer domesticus, *Lin.*

Three males, Valley.—Length, 5·85 to 6·1 ; expanse, 9·2 to 9·6 ; wing, 2·9 to 3·1 ; tail, 2·3 to 2·45 ; tarsus, 0·75 ; bill from gape, 0·54 to 0·55 ; bill at front, 0·5 to 0·53 ; closed wings short of tail, 1·45 to 1·5.

Bill dusky or blackish ; irides hazel brown ; feet yellowish fleshy ; claws brown horny.

Young male, Kathmandu, 26th May.—Length, 5·7 ; expanse, 8·6 ; wing, 2·75 ; tail, 2·15 ; tarsus, 0·6 ; bill from gape, 0·52 ; bill at front, 0·46 ; closed wings short of tail, 1·4.

Bill brownish horny, pale at base below ; irides brownish black ; feet livid ; claws brown horny. Resembles the adult female, but the mantle is paler, and there is a faint dusky stripe down the throat.

Two females, Kathmandu.—Length, 5·7 and 5·85 ; expanse, 9 and 9·15 ; wing, 2·9 and 2·95 ; tail, 2·1 and 2·3 ; tarsus, 0·75 ; bill from gape, 0·55 and 0·56 ; bill at front, 0·5 and 0·51 ; closed wings short of tail, 1·6 and 1·7.

Bill brownish horny, paler below ; irides light brown ; feet pale fleshy ; claws brown horny.

Two young females, Kathmandu, May.—Length, 5·45 and 5·5 ; expanse, 8·8 and 9 ; wing, 2·8 and 2·85 ; tail, 2 and 2·2 ; tarsus, 0·7 and 0·75 ; bill from gape, 0·52 ; bill at front, 0·46 ; closed wings short of tail, 1·2 and 1·3.

Bill livid, light horny at tip; gape yellow; feet pale greyish fleshy.

The House Sparrow is common in the Nepal Valley throughout the year, but is strictly confined to the streets and squares of the towns and villages. It is never seen even a hundred yards away from such localities. This, of course, is very common in the plains of Nepal.

710.—Passer montanus, *Lin.*

Seven specimens.—Length, 5·5 to 5·8; expanse, 8·8 to 9·2; wing, 2·6 to 2·8; tail, 2·2 to 2·4; tarsus, 0·66 to 0·7; bill from gape, 0·5 to 0·55; bill at front, 0·4 to 0·46; closed wings short of tail, 1·48 to 1·6.

Bill black; irides brown; feet buff fleshy; claws brown horny.

This is the Common Sparrow of the Nepal Valley, a permanent resident all over the central level parts; it is also common, in winter, in the Chitlang and Markhu Valleys. In the great valley its breeding season lasts from March to the end of July, and it rears certainly two, and often three broods. I obtained nestlings on the 16th April, and eggs as late as the middle of July.

723.—Euspiza aureola, *Fall.*

Three males, Valley, February.—Length, 5·9 to 6·05; expanse, 9·3 to 9·6; wing, 3·0 to 3·03; tail, 2·5 to 2·6; tarsus, 0·8; bill from gape, 0·49 to 0·52; bill at front, 0·43 to 0·44; closed wings short of tail, 1·25 to 1·45.

Two females, Valley, February.—Length, 5·5 and 5·6; expanse, 8·6; wing, 2·75 and 2·8; tail, 2·3 and 2·35; tarsus, 0·8; bill from gape, 0·48 and 0·49; bill at front, 0·42 and 0·43; closed wings short of tail, 1·3 and 1·35.

Upper mandible dusky; lower pinkish fleshy, livid at tip; irides brown; feet fleshy brown; claws dusky.

Male above brownish, the feathers longitudinally streaked with black, with patches of maroon, here and there, on the head, mantle, and rump; beneath a gorget of maroon across the base of the throat, and the feathers of the flanks and crissum centred with blackish; the female has no gorget and no maroon on the upper parts.

This species is a winter visitant to the valley of Nepal. It is always found in flocks, frequenting fields and grassy banks, and perching on rows of small trees near hamlets.

724.—Melophus melanicterus, *Gm.*

Two males.—Length, 6·5 and 6·65; expanse, 10·2; wing, 3·2 and 3·3; tail, 2·9 and 3·0; tarsus, 0·75; bill from gape, 0·6; bill at front, 0·52; closed wings short of tail, 1·7 and 1·8.

Three females.—Length, 6·3 to 6·4; expanse, 9·9; wing, 3·0 to 3·1; tail, 2·8 to 2·9; tarsus, 0·76 to 0·85; bill from gape, 0·6; bill at front, 0·45; closed wings short of tail, 1·45 to 1·7.

Two young males, in female plumage, August and February.—Length, 6·7; expanse, 10·3 and 10·5; wing, 3·25 and 3·3; tail, 2·85 and 2·95; tarsus, 0·8 and 0·85; bill from gape, 0·6 and 0·62; bill at front, 0·47 and 0·5; closed wings short of tail, 1·65 and 1·8.

Bill dusky, blackish above and fleshy at base of lower mandible; irides dark brown; feet fleshy brown, the toes darker; claws blackish, pale at tips.

The immature male resembles the adult female in plumage, but is larger, has a stronger bill, and the wings are more brightly coloured. One of the females noted above has a patch of pure white on the hind head.

This Bunting is a permanent resident in the Nepal Valley, affecting the central level portion, and the cultivated parts of the hills up to an elevation of about 6,000 feet. It is usually found in pairs, about bushes and hedges, and is not common in the valley.

731.—Pyrrhula nipalensis, *Hodgs.*

Male, Valley, February.—Length, 7·0; expanse, 10·8; wing, 3·4; tail, 3·1; tarsus, 0·65; bill from gape, 0·53; bill at front, 0·45; closed wings short of tail, 1·9.

Bill greenish horny, black at tip; irides dark brown; feet fleshy; claws brown horny.

This Bull-Finch is only found on the hills round the valley of Nepal in winter, and is then by no means common. It was only met with once; on descending from the Sheopuri Ridge, on the 16th February, a party of this species flew across the path and settled for a minute or so in a bush tree.

738.—Carpodacus erythrinus, *Pall.*

Two females, Valley, 19th April.—Length, 5·8; expanse, 9·7 and 9·8; wing, 3·1 and 3·15; tail, 2·35 and 2·4; tarsus, 0·75; bill from gape, 0·5 and 0·53; bill at front, 0·45; closed wings short of tail, 1·3 and 1·4.

Bill grey horny, darker on culmen; irides brown; feet brown fleshy.

This Rose Finch merely passes through the valley on its migrations, and does not, I think, remain there for more than a few days at a time; my specimens were shot on trees not far from the Residency grounds. It is often caged by the Nepalese.

746.—Procarduelis nipalensis, *Hodgs.*

Five males.—Length, 5·9 to 6·4; expanse, 10·3 to 11; wing, 3·4 to 3·7; tail, 2·5 to 2·8; tarsus, 0·85 to 0·9; bill from gape, 0·53 to 0·55; bill at front, 0·43 to 0·45; closed wings short of tail, 0·9 to 1·25.

Five females.—Length, 5·8 to 6·3; expanse, 9·7 to 10·2; wing, 3·15 to 3·3; tail, 2·25 to 2·5; tarsus, 0·78 to 0·85; bill from gape, 0·52 to 0·54; bill at front, 0·41 to 0·44; closed wings short of tail, 0·85 to 1·15.

Two immature males, in female plumage.—Length, 6·2 and 6·3; expanse, 10·4 and 10·6; wing, 3·3 and 3·4; tail, 2·5; tarsus, 0·85; bill from gape, 0·52 and 0·53; bill at front, 0·43 and 0·45; closed wings short of tail, 0·95 and 1·1.

Bill dusky, darker on culmen and greyish at base of lower mandible; irides dark brown; feet fleshy brown; the toes a shade darker than the tarsi; claws horny brown.

The first primary is from 0·03 to 0·12 shorter than the second; the second, third and fourth primaries are subequal. The female has the back strongly striated with black; the minor and secondary coverts are margined on the outer webs with olivaceous buff, forming two wing bands, and the tertiaries are margined on the outer webs, near their tips with the same colour. Dr. Jerdon's statement about the female of this species "from breast to tail white" must be a misprint; the crissum only is albescent, and the under tail-coverts are margined with sullied white or fulvous. The young male exactly resembles the adult female.

This fine Rose Finch is common on the hills round the valley of Nepal, in winter only, at elevations of from 6,000 to 8,000 feet. It is found in parties or flocks about bushes, and in cleared spaces in the forests. It feeds on the ground, and is not at all shy. I found that it would return again and again to perch on the bare branches of a tree after being shot at. It was obtained in the upper part of the Chitlang Valley in December and on Mount Sheopuri in January and February.

750.—Hypacanthis spinoides, *Vig.*

Twenty-six specimens, Valley.—Length, 5 to 5·6; expanse, 8·8 to 9·8; wing, 2·8 to 3·2; tail, 1·9 to 2·1; tarsus, 0·5 to 0·7; bill from gape, 0·46 to 0·54; bill at front, 0·4 to 05; closed wings short of tail, 0·7 to 0·9.

Bill fleshy, brownish on culmen and dusky at tip; irides light or dark brown: feet brownish fleshy; claws dusky.

This species is found in great numbers in the valley of Nepal; and, although it moves about a good deal, I think it

must be a permanent resident there: it was obtained from early in February to July.

It frequents the central woods in flocks, and may often be seen in the Residency grounds about sunset, flying into the tops of the pine trees and moving about the upper branches very actively, while it utters a soft twittering cry.

760.—Pyrrhulauda grisea, *Scop.*

Male, Tarai, December.—Length, 5; expanse, 9·8; wing, 3·02; tail, 1·93; tarsus, 0·7; closed wings short of tail, 0·6.

Bill pale greyish horny; irides reddish brown; feet fleshy.

This little Lark was common in the plains and Tarai of Nepal in winter, frequenting the roads and fields.

761.—Calandrella brachydactyla, *Tem.*

Three males, Valley, October.—Length, 6·2 to 6·3; expanse, 11·7 to 12; wing, 3·8 to 3·9; tail, 2·2 to 2·5; tarsus, 0·8 to 0·9; bill from gape, 0·55 to 0·57; bill at front, 0·43 to 0·44; closed wings short of tail, 0·55 to 0·75; hind toe and claw, 0·67 to 0·7; weight, 0·9 to 1·0oz.

Female, Valley, October.—Length, 6·2; expanse, 11·5; wing, 3·7; tail, 2·2; tarsus, 0·8; bill from gape, 0·55; bill at front, 0·43; closed wings short of tail, 0·7; hind toe and claw, 0·65; weight, 0·9oz.

Bill yellowish fleshy, dusky on culmen and black at tip; irides brown; feet fleshy; claws horny brown.

These birds differ greatly from the specimens of *C. brachydactyla* which I obtained in Eastern Turkistan and Ladak, and I can find no specimens in Mr. Hume's museum to match them. They are large, brightly coloured, and very rufous in tone, the upper surface closely resembling some of the brighter examples of *Alauda gulgula*. The bill is shorter, deeper, and more stout than in any examples of *brachydactyla* I have seen. Mr. Ball (S. F., II., p. 423) gives the bill from gape of two specimens of *brachydactyla* as 0·65, and my birds from Turkistan and Ladak have the bills measured in the same way, 0·6 to 0·63; in the Nepal birds the bills measure 0·55 to 0·57. This does not seem a great difference when reduced to figures, but comparing specimens the difference is very marked, not only in length but in depth. My Nepal specimens agree exactly with Mr. Hodgson's plate of *Alauda conostoma*, which has been supposed to represent *brachydactyla*, and have the hind claw no longer than in the latter species; they have no spots or streaks on the throat and breast.

This Lark passes through the Nepal Valley, but does not remain there many days. My specimens were shot on the 2nd October.

762.—Alaudula raytal, *Bly.*

This little Sand-Lark was pretty common in the plains of Nepal, close to the Tarai, in December.

766.—Alauda dulcivox, *Hodgs.*

Male, Valley, March.—Length, 6·8; expanse, 13·6; wing, 4·3; tail, 2·9; tarsus, 0·95; bill from gape, 0·65; bill at front, 0·43; closed wings short of tail, 1; hind claw (straight) 0·5; weight, 1·25ozs.

Female, Valley, March.—Length, 6·8; expanse, 12·8; wing, 4; tail, 2·73; tarsus, 0·96; bill from gape, 0·65; bill at front, 0·42; closed wings short of tail, 0·95; hind claw, 0·5; weight, 1·2ozs.

Upper mandible dusky; lower mandible grey horny, livid at tip; irides dark brown; gape fleshy yellow; feet brownish fleshy, dusky on the joints; claws dusky.

This fine Lark is tolerably common in the valley of Nepal in winter. In February and March it is quite social in its habits, and frequents the fields. It retires from the valley about the end of March.

767.—Alauda gulgula, *Frankl.*

Female, Valley, February.—Length, 6·2; expanse, 12; wing, 3·85; tail, 2·55; tarsus, 0·95; closed wings short of tail, 0·85; hind claw, 0·45.

Irides dark brown; lower eyelid bluish grey; feet brown fleshy.

I enter this specimen apart from the preceding species, because it is much smaller and less bulky; but I cannot detect any other difference, and I doubt whether it is really distinct. It is probably an example of the race alluded to by Mr. Hume (S. F., I., p. 40) as the Skylark of the high Himalayan plateau, with a wing measuring 3·8 to 4·0; and it may equal Mr. Brooks' *Alauda guttata*; both of which Mr. Hume would include under the name of *gulgula*.

This Lark was only found in the Nepal Valley in winter, and its habits did not differ from those of *dulcivox*.

769.—Galerita cristata, *Lin.*

The Crested Lark was fairly common in the plains of Nepal, near the Tarai, in winter.

772.—Crocopus phœnicopterus, *Lath.*

Male, Nawakot district, November.—Length, 13; expanse, 22·5; wing, 7·4; tail, 4·45; tarsus, 0·95; bill from gape, 0·95; bill at front, 0·75; closed wings short of tail, 1·7.

Bill very pale greyish horny; irides straw colour, with an outer circle of blue; feet pure Indian yellow; claws bluish grey. The green tinge on the forehead extends to the top of the head. The chin and upper part of the throat paler and more greenish than the breast; the grey of the belly is pretty strongly tinged with yellowish green.

Female, Nawakot District, November.—Length, 12·5; expanse, 22·4; wing, 7·3; tail, 4·5; tarsus, 0·95; bill from gape, 0·93; bill at front, 0·73; closed wings short of tail, 1·5.

Bill very pale grey; feet pure Indian yellow; claws greyish blue.

This fine Green Pigeon was plentiful in the level portions of the Nawakot district in winter. It associated in large flocks, and was found on several occasions in solitary banian and pipal trees.

778.—Sphenocercus sphenurus, *Vig.*

I found this beautiful species in small numbers at Nimboatar in December. It breeds in some parts of the hills round the valley of Nepal; and a nestling obtained thence on the 18th August measured: Length, 9·4; expanse, 16·8; wing, 5·7; tail, 3·8; tarsus, 0·85; bill from gape, 0·83; bill at front, 0·72; closed wings short of tail, 1·5. The base of the bill and orbital skin cobalt blue; tip of bill pale blue; irides brownish grey.

783.—Alsocomus hodgsoni, *Vig.*

This Wood-Pigeon is a winter visitor to the forests at the foot of the hills round the Nepal Valley. It is fairly common in certain places, (*e.g.*, at Godaveri south of Patan,) from December to February, associating in small flocks.

788.—Columba intermedia, *Strickl.*

Five males.—Length, 13·2 to 13·6; expanse, 25·5 to 27; wing, 8·7 to 9·2; tail, 4·6 to 5·0; tarsus, 1·1 to 1·2; bill from gape, 0·95 to 1·0; bill at front, 0·75 to 0·8; closed wings short of tail, 0·85 to 1·2; weight, 10 to 11·5ozs.

Three females.—Length, 12·3 to 13; expanse, 25 to 26·4; wing, 8·4 to 8·7; tail, 4·5 to 4·8; tarsus, 1·1 to 1·2; bill from gape, 0·95 to 1·0; bill at front, 0·75 to 0·8; closed wings short of tail, 0·5 to 0·9.

Bill horny black; irides orange; feet purplish red; claws black.

The Blue Rock Pigeon is very common in the valley of Nepal, where it is a parmanent resident. It was also fairly common, in winter, in the Nawakot district, the Markhu Valley and the plains of Nepal. It is found in considerable numbers about all the large temples in the valley, and large flocks are often seen feeding in the fields; when out in the open it is very shy and wary, as it is constantly fired upon by the Nepalese.

790.—Columba leuconota, *Vig.*

Specimen from hills north of Valley.—Length, 12·8; expanse, 26·0; wing, 8·95; tail, 5·1; tarsus, 1·2; bill from gape, 1·0; bill at front, 0·66; mid-toe and claw, 1·35; closed wings short of tail, 1·2; weight, 10ozs.

Bill horny black; irides yellow; feet bright light red; claws horny black; mouth bright fleshy red.

This Pigeon is found in the upper northern regions of Nepal, but never occurs in the Nepal Valley. I kept a specimen in confinement for several months; it was very tame and not at all active. It never attempted to perch, but remained on the ground, generally in a corner of the room. When approached by Pheasants or other birds kept with it in the aviary it uttered the purring coo common to all pigeons, and used to strike at the birds with its wing when they came too near.

792.—Turtur orientalis, *Lath.*

Six males.—Length, 12 to 12·9; expanse, 21·7 to 23·7; wing, 7·3 to 7·95; tail, 5 to 5·6; tarsus, 1·0; bill from gape, 0·9 to 0·95; bill at front, 0·65 to 0·71; closed wings short of tail, 1·5 to 2·5; weight, 6·5 to 7·5 ozs.

Six females.—Length, 11·75 to 12·5; expanse, 20·5 to 22·8; wing, 6·85 to 7·6; tail, 5 to 5·6; tarsus, 0·97 to 1·13; bill from gape, 0·87 to 0·95; bill at front, 0·6 to 0·75; closed wings short of tail, 2·0 to 2·6; weight, 6 to 7·5 ozs.

Bill black or dusky horny; tumid base of bill, gape, and orbital skin purple; irides golden yellow to orange red; feet purple; claws dusky.

These twelve specimens must certainly all be referred to one species, and they seem to show that *Turtur meena* cannot be separated from Jerdon's "*Turtur rupicolus*, Pallas." Mr. Hume has often insisted that *meena* is quite distinct from *rupicolus*, the former having *grey* under tail-coverts, while the latter has them *white* ("Lahore to Yarkand," p. 277; "Nests and Eggs," pp. 500-502; S. F., VI., pp. 421-422). Now my Nepal birds have

the under tail-coverts coloured as follows :—White (2); white, tinged greyish; greyish white; light ash grey (2); ashy grey (2); bluish grey (2); mixed slaty and pale greyish; dark bluish grey. The lower tail-coverts in fact show every gradation from white to deep bluish grey, while the birds in other respects are closely similar; some specimens are rather more rufous on the belly than others, but it is impossible to divide the series by any one point. *Turtur meena* may differ from *rupicolus* by some constant characters, but I venture to say that the two supposed species cannot be separated by the colour of the lower tail-coverts. I follow Mr. Dresser in assigning the name of *orientalis* to my specimens, which, I believe, represent the two races hitherto looked upon, in India, as distinct.*

This Dove is fairly common in one part or another of the Nepal Valley throughout the year. In May, June, and July it is only found in the forests, at elevations of from 7,000 to 8,000 feet, where it breeds. From August to December it is plentiful in the central woods of the valley. From January to March only a few birds are to be found in the central part of the valley, the majority having moved down to warmer regions; and in the latter part of March and throughout April it is again common in the central woods. I also found it common in the Nawakot district in November and in the plains of Nepal in December. It is usually seen in parties of from six to ten, high up in trees; and its note is a low, deep, *kur, kur, kū*.

795.—Turtur suratensis, *Gm.*

Six males.—Length, 11 to 12; expanse, 16·9 to 17·2; wing, 5·55 to 5·7; tail, 5·5 to 5·9; tarsus, 0·85 to 1·0; bill from gape, 0·83 to 0·9; bill at front, 0·6 to 0·66; closed wings short of tail, 3·3 to 3·7.

Four females—Length, 10·4 to 11·4; expanse, 16 to 17; wing, 5·25 to 5·5; tail, 4·9 to 5·8; tarsus, 0·85 to 0·9; bill from gape, 0·8 to 0·85; bill at front, 0·6 to 0·65; closed wings short of tail, 2·9 to 3·6.

Bill horny black; gape and orbit purple; irides brown, hazel, yellow brown, orange yellow, and yellow; feet purple red; claws black.

The Spotted Dove is a permanent resident in the valley of Nepal, not ascending the hills. It is common in winter in the Nawakot district, the Chitlang Valley, Bichiakoh and the plains.

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* I am bound to note that having examined all these specimens I came to a precisely opposite conclusion.—Ed.

796.—Turtur risorius, *Lin.*

Male, Nepal Plains, December.—Length, 12·25; expanse, 21·77; wing, 7·2; tail, 5·45; tarsus, 1·0; bill from gape, 0·93; bill at front, 0·68; closed wings short of tail, 2·0.

Bill horny black; irides crimson; feet dark purplish.

This specimen is large and deep tinted; in the latter respect quite resembling a specimen from Kaleegunj on the Brahmapootra in Mr. Hume's collection; and differing markedly from the pale examples obtained in Rajpootana.

The Ring Dove was found in small numbers only in the Hetoura Dun, but was common in the Nepal plains, in winter. It never occurs in the valley of Nepal.

797.—Turtur tranquebaricus, *Herm.*

This Dove was common in the Hetoura Dun, at Bichiakoh, and generally in the Sâl Forest near those places, in winter.

803.—Pavo cristatus, *Lin.* *(Mujur.)*

The Common Peafowl is found along the outer base of the Sandstone Range, about Bichiakoh, but not in any great numbers; it does not extend further in, nor does it here ascend the hills even to the height of 2,000 feet, to the best of my belief. The bird certainly does not occur in the wild state in the valley of Nepal, although domesticated birds are often seen there. I once saw a party of seven Peafowl at Bichiakoh in December; early in the morning, the birds had come down to the stream to drink, and on being alarmed they ran to a plot of ground overgrown with tall grass and from thence flew off, singly, to the shelter of the forest.

804.—Lophophorus impeyanus, *Lath.* *(Dafai.)*

Male.—Length, 26·8; expanse, 36·0; wing, 11; tail, 8·8; tarsus, 2·7; spur, 0·47; bill from gape, 1·85; bill at front, 2·05; wings short of tail, 6·1; mid-toe and claw, 3·0; crest, 3·0; weight, 5 lbs. 6 ozs.

Bill grey horny at tip, dusky at base and along culmen; irides brown; orbital skin brilliant turquoise blue; lower eyelid grey, black spotted; feet dingy greenish yellow; claws and spurs dusky.

This fine species seems to be fairly common in the interior of Nepal at high elevations, but it does not occur within that part of the country which Europeans are allowed to visit. I procured several specimens which had been trapped and brought to the valley for sale; the birds bore confinement very well and were sedentary and rather stupid. Jerdon gives *Dafia* as the Bengali

name of *Ceriornis satyra*, but in Nepal the term *Dafé* or *Dáfia* is invariably applied to *L. impeyanus*. *Crossoptilon tibetanum* is called *Bhote Dafé*.

805.—Ceriornis satyra, *Lin.* (*Monal.*)

Two males.—Length, 26·5; expanse, 34·5; wing, 10·4 to 10·9; tail, 10·5 to 11·0; tarsus, 3·25 to 3·3; bill from gape, 1·5 to 1·6; bill at front, 1·0; wings short of tail, 8·0 to 8·2; spur, 0·3 to 0·35.

Bill brown horny or blackish, pale at tip; irides deep brown; skin of neck, throat, and orbits fine purplish blue; the gular wattles orange in parts; horns lazuline blue; feet pale fleshy; claws and spurs brownish grey horny.

This beautiful Horned-Pheasant, always known to the Nepalese by the name of *Monal*, is said to be common in the hills north of the valley, about four days' march from Kathmandu; of course I never had an opportunity of observing its habits; the birds whose measurements are entered above were snared by natives and brought to the valley, alive, for sale.

807.—Ithagenes cruentus, *Hardw.* (*Chilimé.*)

The Blood-Pheasant is apparently rather rare in Nepal, and of course it is never found anywhere near the valley. Two cock birds which had been snared were shown to me; one of these had three spurs on the leg, and the other, although in full adult plumage, showed no trace of a spur on either tarsus.

808 *bis.*—Pucrasia nipalensis, *Gould.* (*Pokhras.*)

Three males.—Expanse, 27·5 to 29·0; wing, 8·3 to 9·1; tarsus, 2·5 to 2·7; bill from gape, 1·2 to 1·4; bill at front, 1·22; nostril to tip, 0·6 to 0·7; spur, 0·23 to 0·63; crest, 3·5; weight, 1 lb. 15 ozs. to 2 lbs.

Four females.—Expanse, 27·0; wing, 8·1 to 8·6; tarsus, 2·1 to 2·5; bill from gape, 1·15 to 1·25; bill at front, 0·9 to 0·92; mid-toe and claw, 2·55 to 2·6; lower tail-coverts short of end of tail, 2·30 to 2·45; weight, 1 lb. 8 ozs. to 1 lb. 14 ozs.

Bill dusky or blackish, the extreme tip and base of lower mandible grey horny; irides dark brown; lower eyelid fleshy; feet dingy lavender horny; claws dusky horny.

The Nepal Pukras was first discriminated by Mr. Gould, who noted its character in Proc. Zool. Soc., April 11th, 1854, and in July of the same year figured and described it in Part VI of his "Birds of Asia," clearly pointing out in what respects it differed from *macrolopha*. Dr. Jerdon, in the "Birds of India,"

was disposed to doubt the distinctness of the two forms, and he was led to this opinion from an examination of the figure of the bird only; for he had no opportunity of examining a specimen of the true *nipalensis*. In the appendix to the "Birds of India," however, he noted that Blyth considered *P. nipalensis* apparently a good species.

In the B. M. Catalogue of Mr. Hodgson's collection (1846, p. 126) *Pucrasia macrolopha* is entered, but in the second edition of that Catalogue (1863, p. 68), Hodgson's specimens of Pukras are called *Pucrasia duvancelli*, and *P. nipalensis*, Gould, is added as a synomyn. Mr. Hodgson does not seem to have bestowed any name of his own on the Nepal Pukras, and it is to be presumed that he considered his bird the same as *macrolopha*, Lesson.

In the beginning of 1877 Mr. Hume urged me to procure specimens of the Nepal Pukras, in order that the question of its identity with, or distinctness from, *macrolopha* might be definitely settled. This proved no easy task, as the bird does not occur in any part of the hills so far to the east as the valley of Nepal, though not uncommon in the western portion of the Nepal Himalaya. However, after waiting for some six or seven months, I received the seven birds whose measurements are here entered, from Jumla in Western Nepal, through the kindness of my friend General Umber Jung, a nephew of the late Sir Jung Bahadur. Three other specimens were subsequently seen in confinement in the valley, and these also had been brought from Jumla.

Unfortunately I can give no details about the habits of this Pheasant from personal observation; it is said to be plentiful about Jumla where it is found not far from the snows. In confinement the birds became very tame and seemed to prefer green leaves and shoots, &c., to grain, for food.

There can be no doubt that *Pucrasia nipalensis* is thoroughly distinct from *P. macrolopha;* the former is a smaller bird, darker, and much more richly coloured than the common Pukras. Although Mr. Gould has said all that is necessary on this point, it may be worth while again to draw attention to the characters by which the two species may be at once distinguished.

In *macrolopha* the male bird has the body above, the sides of neck and breast, and the flanks, light ashy with a narrow black stripe down the centre of the feathers, including the shaft; in *nipalensis* the feathers of the corresponding parts are velvet black, narrowly fringed at their margins with grey, while the shafts of the feathers are either white with a line of chestnut on each side, or wholly chestnut.

The female of *P. nipalensis*, besides being smaller and darker than the hen of *macrolopha*, has the colors much more intense, and with a greater admixture of rufous; and the tail feathers are nearly all chestnut.

809.—Phasianus wallichi, *Hardw. (Chihir).*

This Pheasant appears to be not uncommon in the hills north of the valley, judging from the number of snared birds one saw in Kathmandu; but I never had an opportunity of shooting this bird in Nepal, and consequently can add nothing as to its habits.

810 *bis.*—Gallophasis leucomelanus, *Lath. (Kalij).*

Eleven males.—Length, 23·0 to 26·0, expanse, 26 to 29·5; wing, 8·7 to 9·2; tail, 10·9 to 12·3; tarsus, 2·8 to 3·05; bill from gape, 1·25 to 1·35; bill at front, 1·04 to 1·25; nostril to tip of bill, 0·7 to 0·76; closed wings short of tail, 7·6 to 9·5; spur, 0·35 to 0·6; crest, 2·4 to 2·8; weight, 1 lb. 12 ozs. to 2 lbs. 4 ozs.

Eleven females.—Length, 19·3 to 20·5; expanse, 25·0 to 27·0; wing, 7·8 to 8·5; tail, 7·3 to 8·7; tarsus, 2·3 to 2·9; bill from gape, 1·2 to 1·3; at front, 1·05 to 1·15; nostril to tip of bill, 0·7 to 0·73; crest, 1·05 to 1·8; weight, 1 lb. 6 ozs. to 1 lb. 12·5 ozs.

Bill greenish horny, dusky or black on base of culmen and about the nostrils; orbital skin fine crimson; irides dark brown; lower eyelid grey with black spots; feet brownish grey horny, the toes being usually a little darker than the tarsus; claws brownish horny; spurs dusky.

Male.—Head and crest, neck above, upper back, wings, and tail glossy bluish black; the feathers of the interscapulary region white shafted; rump and upper tail-coverts blue black; the feathers white shafted and narrowly tipped with white, the white fringes varying from about 0·05 to 0·18 in width; chin and ear-coverts dull black; throat and breast greyish white; the feathers long and sharp pointed; abdomen, vent, and under tail-coverts dull greyish brown.

Female.—Rich brown, nearly all the body feathers faintly white shafted; the feathers of the back and wing-coverts rather broadly tipped with greyish white; rump and upper tail-coverts lighter brown than the central tail feathers with which they contrast; middle tail feathers deep rufescent brown, rather boldly vermicellated with black, the outer webs being markedly darker than the inner ones; lateral tail feathers dark; the lower surface generally lighter than the back, with prominent pale fringes to the feathers, which are of a deeper shade of brown near the shafts.

Young.—A chick captured on the 10th of June, whose wing measured only two inches, had the feet orange and the bill greenish yellow horny; the head was rufous brown; the body above dark brown; each feather of the wing-coverts and scapulars having a blackish subterminal bar and a fulvous tip; beneath sullied fulvous. Young birds of both sexes about three months old resemble the female, but have the bill livid at tip, the orbital skin pale fleshy red and the feet livid brownish. At this stage the black subterminal bars on the upper feathers are still well marked. The young male assumes the black plumage when about five months old (such at least was the case in two specimens I had in confinement), but at this age it still shows traces of the original brown colour about the feathers of the neck and upper back, and in this state it probably represents Latham's "Nepal Pheasant" (Ind. Orn. II., 632).

The adult male of this species differs from *G. albocristatus* in having a small *black* crest instead of an ample *white* one; in the white tips to the feathers of the rump and upper tail-coverts being much narrower and further apart; and in the tarsi being more slender. From *melanotus* it differs in having the rump and upper tail-coverts white tipped; in the feathers of the throat and breast being darker and more grey; and in having the tarsi much more slender.

From *horsfieldi* it differs conspicuously in having the feathers of the throat and breast greyish white and lanceolate instead of pure black and rounded; and in having the rump and upper tail-coverts much more narrowly tipped with white.

The adult female resembles *melanotus* much more closely than either *albocristatus* or *horsfieldii*. It differs from *melanotus* in having the feathers of the upper surface more broadly margined with greyish white; the middle tail feathers are more broadly vermicellated, though not so prominently as in *albocristatus*, the edgings to the feathers of the lower surface contrast more, and the rump contrasts more with the middle tail feathers, in this respect recalling *horsfieldi*, but in no other.

The bird I have above described is, no doubt, the *Phasianus leucomelanus* of Latham, Ind. Orn. II., 633. Kirkpatrick, in his "Account of the Kingdom of Nepal" (1811, p. 132) gives a good figure of this Kalij, showing its distinctive points, *viz.*, black crest, white-barred lower back, and grey-white throat and breast, and says: "The Khalidge is met with in the thickets which overrun the gorges of the mountains near Noakote," &c. Mr. Hodgson, curiously enough, seems to have overlooked the distinctness of the species. In his drawings, now in Mr. Hume's possession, he gives an excellent figure of our bird, but labels it *Gallophasis albocristatus* (!), an impos-

sible title, seeing that the bird has a black crest. In both editions of the B. M. Catalogue of Mr. Hodgson's collection (1846 and 1863) *Gallophasis leucomelanus* is entered ; but then *albocristatus* is added as a synonym, which is clearly an error.

But it may be, and indeed has been, held that the Nepal Kalij is a hybrid between *albocristatus* and *melanotus*. In disproof of this theory I can now bring forward ample evidence. The Nepal Kalij is a most interesting species, exactly intermediate in coloration and in habitat to the White-crested and Black-backed Kalij-Pheasants, and is possibly the older form from which the other two have branched off to west and east, and become modified. During the two years I resided in Nepal, I tried in vain, both personally and by the offer of rewards, to obtain a specimen of either *albocristatus* or *melanotus*, which, on the "hybrid" theory, should have been found there interbreeding. I have seen scores of the Nepal Kalij (of which at least thirty were adult males) and they were all exactly alike and constant to the definition above given of the species. Any one seeing only a single male bird of *leucomelanus* would perhaps naturally conclude that it was a hybrid ; but when the two supposed parent-species are found to be entirely absent from the large tract of country where the Nepal Kalij abounds, while the character of the latter are constant in a large series of specimens, the conviction that it is a thoroughly good species seems to me irresistible.

The Nepal Kalij extends to the east nearly as far as the Aum I believe, *melanotus* being found east of that river only ; of the range of our bird to the west I have no certain information, but *Gallophasis albocristatus* probably replaces it in the extreme western portion of the Nepal territories.

G. leucomelanus is common, wherever thick forest is found, from Hetoura in the Dun to the valley of Nepal ; in all the wooded hills surrounding the latter up to an elevation of nearly 9,000 feet ; and in every forest about Noakot. It is usually seen in pairs or in parties of from three to ten, often feeding on the ground near cultivated patches at the borders of forest. The birds seem very fond of perching on trees, and it is usually in this position that one comes across them in forcing one's way through forest which has a dense undergrowth. On such occasions the Kalij first gives notice of its whereabouts by whirring down with great velocity from its perch and then running rapidly out of sight to the shelter of some thicket. In the winter the birds roost on trees at the foot of the hills, and the plan for making a bag is to post oneself about sunset under some trees which they are known to frequent and await their coming. The birds are then soon heard threading their

way through the jungle towards their favourite trees, and at once fly up and perch. When once settled for the night in this way they are not easily alarmed, and I have shot four or five birds in quick succession before the rest of the party would clear out to quieter quarters.

Occasionally too one can get a shot at the Kalij as they cross a hill path through the forest on their way to or from some stream.

Great numbers of the Nepal Kalij are snared and brought into Kathmandu for sale. The birds bear confinement in the valley very well, and I reared several chicks to maturity.

812.—Gallus ferrugineus, *Gm.*

The Common Jungle Fowl is not uncommon about Hetoura and Nimboatar, and again in the Noakot district; but it does not occur in any part of the valley of Nepal. Its habits and haunts are so well known that nothing further need be said here about these points.

818.—Francolinus vulgaris, *Steph.* (*Titar*).

Three males, Valley.—Length, 12·8 to 13·5; expanse, 20 to 21; wing, 5·8 to 6·2; tail, 3·6 to 3·75; tarsus, 1·65 to 1·8; bill from gape, 1·05 to 1·1; bill at front, 0·93 to 0·98; closed wings short of tail, 2·35 to 2·5; spur, 0·15 to 0·25.

Bill black, upper mandible pale horny at extreme tip; irides deep brown; feet orange; claws horny black; spur brown horny.

The Black Partridge is fairly common on the hills round the Nepal Valley from March to October; and in the Nawakot district, the Hetoura Dún, and the plains of Nepal from November to February at least, but perhaps throughout the year. In the valley it is found, in suitable localities, from the foot of the hills to an elevation of 6,000 feet. It frequents grassy slopes on the skirts of forest, where the trees are far apart, or bush-covered ground near cultivation; and in these localities on the hills it may constantly be heard uttering its well-known cry from April to July. In the Hetoura Dún I found it in rather high grass, never far from water and cultivation; and in the plains it was very common in waste ground overgrown with bushes.

820.—Caccabis chukar, *J. E. Gr.* (*Chakor*).

Two males.—Length, 15 and 15·2; expanse, 22·6 and 23; wing, 6·5 and 6·7; tail, 4·2 and 4·3; tarsus, 1·65 and 1·7; bill from gape, 1·05 and 1·1; weight, 1 lb. 3 ozs. and 1 lb. 5 ozs.

Two females.—Length, 13 and 13·1; expanse, 20 and 20·2; wing, 6·2 and 6·3; tail, 3·3; tarsus, 1·6 and 1·65; bill from gape, 0·94 and 1·0; weight, 15 ozs.

Bill coral red, with a brownish tinge on culmen; irides hazel brown and reddish brown; edge of eyelids brick red; feet red, paler than the bill.

These specimens are deep tinted, much darker than examples of the same species from Ladak and Yarkand.

The Chukor is common on certain parts of the hills round the valley of Nepal, at elevations of from 5,000 to 6,000 feet, from March to October. It frequents rounded grassy hills, where the small nullahs are fringed with bushes, and where there is no forest; in such localities, especially near patches of cultivation, and on bits of stony ground, flocks of Chukor are sure to be found. About the end of October the birds descend the hills and assemble on the confines of the warmer valleys for the winter; where they can feed in the rice fields which have been reaped, in fields of growing corn, &c.

It breeds from May to June, usually at an elevation of about 6,000 feet. On the 5th June a nest of the Chukor was found at Kakni Powah; it was on the ground, under the edge of a rock, and well sheltered by ferns and small bushes. The nest was a mere pad of grass and leaves, and contained seven nearly fresh eggs, which were neatly arranged, six in a circle, with the small end pointing inwards, and the seventh egg filled up the centre.

824.—Arboricola torqueolus, *Valenc.* (*Peunra*).

Female, July.—Length, 10·9; expanse, 19; wing, 5·7; tail, 2·75; tarsus, 1·5; bill from gape, 0·9; bill at front, 0·76; nostril to tip of bill, 0·3; closed wings short of tail, 2·0; weight, 7·5 ozs.

Bill black, the culmen and gonys brownish; irides brown; spot at gape and orbital skin purplish red; feet brownish olive horny; claws pink horny. The upper surface is strongly undulated with black.

This Partridge is found on the hills round the valley of Nepal, in densely-wooded nullahs. I saw four or five specimens during the time I was in Nepal, but I cannot say whether it is common there.

825.—Arboricola rufogularis, *Bly.*—A. rufipes, *Hodgs.*

Male, Valley, June.—Length, 9·2; expanse, 17·0; wing, 5·0; tail, 2·2; tarsus, 1·35; bill from gape, 0·9; bill at front, 0·64; nostril to tip of bill, 0·32; mid-toe and claw, 1·0; closed wings short of tail, 1·3.

Bill black; gape and orbital skin pink fleshy; irides dark brown; feet red.

This Hill Partridge is found on the hills round the Nepal Valley in similar localities to those frequented by *torqueolus*; and it appears to occur in about the same numbers as that species.

Dr. Jerdon says that this species "was discriminated by Blyth from specimens sent from Darjeeling, and we are ignorant of its range west of Sikim"; but as a matter of fact it was first discriminated by Hodgson from specimens obtained in Nepal, and that naturalist gave it the appropriate title of *rufipes*.

829.—Coturnix communis, *Bonn.*

Four males.—Length, 7·6 to 7·8; expanse, 13·8 to 14; wing, 4·2 to 4·4; tail, 1·65 to 1·8; tarsus, 1·0 to 1·05; bill from gape, 0·6 to 0·65; bill at front, 0·4 to 0·5; closed wings short of tail, 0·4 to 0·9; weight, 3·2 to 3·75 ozs.

Four females.—Length, 7·6 to 8·0; expanse, 14 to 14·3; wing, 4·35 to 4·6; tail, 1·7 to 2·0; tarsus, 1·0 to 1·1; bill from gape, 0·63 to 0·7; bill at front, 0·45 to 0·47; closed wings short of tail, 0·4 to 0·6; weight, 3·5 to 3·75 ozs.

The Common Quail is found in great numbers in the valley of Nepal from the middle of October to the middle of December, and from about the third week in March to the end of April. It is abundant in the Nawakot district in November and in the plains of Nepal in December. In November the Quail swarm in the Marwa crop and rice fields of the valley.

833.—Turnix plumbipes, *Hodgs.*

Male, Valley, September.—Expanse,* 11·5; wing, 3·4; tarsus, 0·9; bill from gape, 0·7; bill at front, 0·52; weight, 1·25 ozs.

Bill grey plumbeous, dusky above; irides milky white; feet pale plumbeous; claws greyish horny.

Chin and upper portion of throat greyish white; neck and breast fulvous, conspicuously barred across with black; abdomen, crissum and under tail-coverts light bright ferruginous. Identical with specimens from Sikim.

This Bustard Quail appears to be rare in the valley of Nepal. It was observed in winter in some of the cultivated lowlands of the Nawakot district.

845.—Charadrius fulvus, *Gm.*

Three males, Valley, September and October.—Length, 9·4 to 9·8; expanse, 20·6 to 20·7; wing, 6·4; tail, 2·4 to 2·9; tarsus, 1·7; tibia bare, 0·8; bill from gape, 1·05 to 1·1; bill at front, 0·92 to 0·93; closed wings reach to end of tail.

* An immature bird.—A. O. H.

Bill dull black; irides dark brown; feet plumbeous black.

This Golden Plover arrives in the valley of Nepal about the beginning of September, and is common there, in cut rice fields and swampy ground throughout that month and to nearly the middle of October. I obtained it as early as the 4th September. On its migration north, in the spring, it does not appear to make any stay in the valley.

849 *bis*.—Ægialitis placida, *G. R. Gr.*

Female, November.—Length, 8·7; expanse, 18·3; wing, 5·8; tail, 3·3; tarsus, 1·25; bill from gape, 0·9; bill at front, 0·78; tibia bare, 0·4; closed wings short of tail, 0·4.

Bill black, extreme base of lower mandible yellow; irides dark brown; margin of eyelids ochre yellow; feet pure ochre yellow; claws black.

This species was only met with in November on the banks of the streams in the Nawakot district. It appeared to be always solitary, and was not common.

849.—Ægialitis dubia, *Scop.*

Twelve specimens.—Length, 6·0 to 6·5; expanse, 13·3 to 14·2; wing, 4·15 to 4·63; tail, 2·15 to 2·65; tarsus, 0·9 to 1·0; tibia bare, 0·2 to 0·33; bill from gape, 0·52 to 0·6; bill at front, 0·48 to 0·53; closed wings short of tail, 0·1 to 0·6.

Bill black; base of lower mandible and gape orange or yellow; margin of eyelids gamboge yellow; irides dark brown; feet dusky or dingy greenish; claws black.

A specimen in immature plumage, shot in the valley on the 15th April, measured:—

Length, 5·8; expanse, 12·7; wing, 4; tail, 2·2; tarsus, 0·8; bill from gape, 0·5; bill at front, 0·42; closed wings short of tail, 0·3.

All these specimens seem to be clearly referable to one species only, and yet some of them are small enough for *Æ. minuta* as given by Jerdon. I have examined specimens labelled *minuta* in Mr. Hume's collection (one with a wing, 4·25), and I cannot see how they are to be separated from *dubia*. If *minuta* is a good species, it is to be hoped that some one will define the points by which it can be discriminated from *dubia*.*

This Ringed-Plover is very common in the Nepal Valley from September to June, but only a few birds are to be seen in July and August. I found it common in winter in the Nawakot district and the plains of Nepal.

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* See S. F., VII., 227 *n* and 300 *n*. In the spring and summer the legs of *dubia* become yellow, those of *minuta* do not.—Ed.

855.—Lobivanellus indicus, *Bodd.*

Seven specimens.—Length, 12·6 to 13·6; expanse, 28 to 30; wing, 8·9 to 9·4; tail, 4·75 to 4·9; tarsus, 2·8 to 3·35; tibia bare, 1·4 to 1·7; bill from gape, 1·35 to 1·6; bill at front, 1·3 to 1·5; closed wings short of tail, 0·5 to 0·6.

Bill coral red, the terminal third black; gape, margin of eyelids, and wattles coral or dark red; irides lake red, in one specimen creamy, marbled with reddish spots; feet pale yellow, greenish on the joints; claws black; wing spur rosy horny.

The Red-wattled Lapwing is common in the valley of Nepal throughout the year, frequenting rice fields, swampy grounds, and the neighbourhood of streams all over the central part of the valley. It was found in abundance in the Nawakot district, the Hetoura Dún, and the plains and Tarai of Nepal in winter.

857.—Hoplopterus ventralis, *Cuv.*

Male, Valley, May.—Length, 12; expanse, 25; wing, 7·8; tail, 3·9; tarsus, 2·5; bill from gape, 1·33; bill at front, 1·25; closed wings short of tail, 0·3; tibia bare, 1·0; wing spur, 0·35.

Male, Bichiakoh, December.—Length, 11·75; wing, 8·0; tail, 3·75; tarsus, 2·65; bill from gape, 1·35; bill at front, 1·15; wing spur, 0·43; wings reach to end of tail.

Bill, feet, and claws black; irides dark brown; wing spur black.

The Indian Spur-winged Plover is fairly common in the valley of Nepal, (where it certainly breeds,) but in summer only. In winter I found it in small numbers on the stream at Bichiakoh. It is never seen away from the banks of rivers or shingly islands in the midst of them.

863.—Grus antigone, *Lin.*

Common in the Tarai, and often kept in confinement in the Nepal valley.

865.—Grus cinerea, *Bechst.*

Common, in winter, in the Tarai and Hetoura Dún; passes over the Valley on migration, but never seems to alight there.

866.—Anthropoides virgo, *Lin.*

Common in the Hetoura Dún and Tarai in winter; passes over the valley in migration, and occasionally alights there for a short time. Very commonly kept in confinement in the valley.

867.—Scolopax rusticola, *Lin.*

Two males.—Length, 14 and 14·3; expanse, 24 and 25; wing, 7·5 and 7·8; tail, 3·5 and 3·6; tarsus, 1·45 and 1·5; bill from gape, 2·85 and 3; bill at front, 3·1 and 3·15; mid-toe, 1·55 and 1·6; closed wings short of tail, 1·0 and 1·1; weight (one specimen), 9·4 ozs.

Two females.—Length, 13·3 and 13·6; expanse, 24·8 and 25; wing, 7·7 and 7·75; tail, 3·3 and 3·5; tarsus, 1·4; bill from gape, 2·9 and 2·95; bill at front, 3·15 and 3·2; mid-toe, 1·5 and 1·52; closed wings short of tail, 0·6 and 1·0; weight, 9·4 and 9·5 ozs.

Bill grey fleshy, dusky at tip, and pale at base of lower mandible; irides dark-brown; feet fleshy grey or livid, darker on the joints; claws dusky horny.

The Woodcock arrives in the valley of Nepal early in November, and leaves at the end of February. It frequents most of the small woods in the central part of the valley, and may be found along the foot of the hills where damp thin tree forest occurs. Its favourite haunts are the boggy bits of ground at the edge of woods, and in such a spot I shot a Woodcock in the Residency grounds within a few yards of some houses. It is not at all common in the valley, and can only be obtained by hard work and with the aid of many beaters.

868.—Gallinago nemoricola, *Hodgs.*

This Snipe appears to be rare in the valley. It was only noticed on two occasions, in winter, on the skirts of forest at the foot of the hills.

869.—Gallinago solitaria, *Hodgs.*

Two males.—Length, 12·05 and 12·1; expanse, 20·5 and 21·5; wing, 6·5 and 6·7; tail, 3·1 and 3·4; tarsus, 1·25 and 1·3; tibia bare, 0·15 and 0·2; bill from gape, 2·7 and 2·75; bill at front, 2·76 and 2·8; closed wings short of tail, 0·4 and 0·65; weight, 5·25 ozs. Tail of 20 and 22 feathers.

Two females.—Length, 12·1 and 12·4; expanse, 21 and 21·4; wing, 6·7 and 6·85; tail, 3·3 and 3·35; tarsus, 1·25 and 1·3; tibia bare, 0·15; bill from gape, 2·75; bill at front, 2·83 and 2·87; closed wings short of tail, 0·35 and 0·5; weight, 5·5 ozs. Tail of 16 and 20 feathers.

Bill plumbeous, black at tip, and the base of the lower mandible yellowish brown; irides dark-brown; feet dull olive, or pale yellowish green, the soles yellowish; claws horny black. The modified tail feathers are from four to six on each

side, gradually increasing in width from the outermost, and none of them so narrow as in *G. sthenura*.

The Solitary Snipe is not uncommon in the valley of Nepal from October to the beginning of March, being represented in larger numbers than either the Woodcock or Wood Snipe. It is found at the foot of the hills all round the valley, on sloping grass-covered ground, in the nullahs of small streamlets running down from the hills. It is as often found in pairs as singly, and does not seem ever to seek the shelter of bushes or forests. Its flight is slower and heavier than that of either the Pintail or Common Snipe.

870.—Gallinago sthenura, *Kuhl.*

Sixteen males.—Length, 9·9 to 10·9; expanse, 16·3 to 17·3; wing, 5·0 to 5·35; tail, 2·3 to 2·5; tarsus, 1·2 to 1·25; bill from gape, 2·2 to 2·45; bill at front, 2·2 to 2·43; closed wings short of tail, 0·5 to 0·8.

Ten females.—Length, 10·1 to 11; expanse, 16·7 to 17·5; wing, 5·17 to 5·5; tail, 2·2 to 2·6; tarsus, 1·2 to 1·25; bill from gape, 2·5 to 2·6; bill at front, 2·45 to 2·6.

Five birds (male and female) weighed from 3·3 to 4 ozs.

In all these specimens the axillaries and under wing-coverts are strongly barred with brownish black. The narrow lateral tail feathers vary in number from six to nine on each side; but they are not always symmetrically developed: for in six examples with the tails apparently quite perfect I found the number of these feathers to be, 6-7, 7-8, 7-8, 7-8, 8-9. In four specimens these narrow tail feathers could not at first be detected, but on carefully holding aside the tail-coverts, the modified feathers were clearly seen just growing, and often not more than a tenth of an inch in length; in other respects these four birds were of full size and apparently adult.

The Pin-tailed Snipe is exceedingly common in the valley of Nepal, in winter, arriving at the end of August and migrating northwards about the beginning of May; it is most abundant in September and October, and again in March and April. It frequents rather drier ground than the Common Snipe, being often found in fields grown with potatoes, mustard, radishes, &c.; and it proclaims its affinity to *G. solitaria* by occasionally associating with it, in the colder months, about the grassy ground at the foot of the hills. But it is also constantly found in company with the Common Snipe. Its flight may be slightly heavier than that of the latter species, but where both birds occur in numbers, I believe the most experienced sportsman will be quite unable to distinguish *gallinaria* from *sthenura* on the wing.

There has been considerable discussion in the pages of "STRAY FEATHERS" about the differences between the Common and Pintailed Snipes. I had an excellent opportunity of observing both those species in the Nepal Valley, and may here be permitted to make a few observations on what has been written by Capts. Marshall and Butler, Mr. Cripps, Mr. Parker and Mr. Hume. In the first place, I would say that my observations most thoroughly confirm every word that has been written by Mr. Hume on the distinctions of these two species. The same sexes being compared, *gallinaria* has always a longer bill than *sthenura*; the latter species has also the tarsus shorter and stouter, the mid-toe averages 0·1 shorter, and the colours of the upper parts are more dull and contrast less (and by this character alone I have often separated the two species in a bag, without examining any other point.) The barring of the under wing-coverts and axillaries is a most constant character, and is, perhaps, the best point by which the Pintail may be discriminated from the Common Snipe; for, as I have above shown, the narrow lateral tail feathers are sometimes so rudimentary that they may be easily overlooked. I would suggest that some of the specimens considered by Messrs. Marshall and Butler to be *scolopacina* may possibly have been Pintails in which the modified tail feathers were not grown; and this would explain their view that the under-wing coverts and axillaries were often as strongly barred in one species as in the other. As to the size of the two species there is clearly very little difference: the expanse and length of wing are the same; five specimens of *sthenura* weighed from 3 3 to 4 ozs., and four specimens of *scolopacina* had precisely the same weight, *i.e.*, 3·3 to 4 ozs. But *scolopacina* has the total length, 0·2 to 0·4; the tail, 0·3 to 0·4; the tarsus, ·07 to ·05; and the bill, 0·4 to 0·5 longer than in *sthenura*, sex for sex; and so far Jerdon's statement about *sthenura* "of slightly smaller size than the Common Snipe," is fairly borne out.

871.—Gallinago gallinaria, *Gm.*

Six males.—Length, 10·3 to 11·1; expanse, 16·3 to 17·2; wing, 4·9 to 5·4; tail, 2·5 to 2·9; tarsus, 1·25 to 1·3; bill from gape, 2·6 to 2·67; bill at front, 2 55 to 2·65.

Nine females.—Length, 10·8 to 11·3; expanse, 16·5 to 17·5; wing, 5·0 to 5·5; tail, 2·5 to 3·0; tarsus, 1·3 to 1·32; bill from gape, 2·63 to 2·9; bill at front, 2·7 to 3·0.

Weight of four specimens (males and females) 3·3 to 4 ozs.

The Common Snipe arrives in the valley of Nepal about the 1st of September and retires early in May. Although it may be shot in the valley in any month between the dates above indicated, it is most numerous on its migrations, being more

common from September to about the middle of November, and in March and April. I found it rather scarce in the Nawakot district in November. It is always found in the wet fields and swampy grounds in the central parts of the valley, and seems to avoid the crop fields and the ground at the foot of the hills. It occurs in the valley in about one-third of the numbers of *sthenura*.

872.—Gallinago gallinula, *Lin.*

Seven specimens.—Length, 7·9 to 8·4; expanse, 13·3 to 14·5; wing, 4·12 to 4·53; tail, 2 to 2·35; tarsus, 0·9 to 0·95; bill from gape, 1·55 to 1·64; bill at front, 1·6 to 1·7; closed wings short of tail, 0·25 to 0·7; weight, 1·6 to 1·8 ozs.

The Jack Snipe arrives in the valley of Nepal in the beginning of September, and does not leave until about the middle of April. It is most common in the valley during October, November and March, and is found in the Nawakot district in November. It was generally found in fields of growing corn or other crops.

875.—Limosa ægocephala, *Lin.*

Female, Valley, 7th September.—Length, 19·5; expanse, 30; wing, 8·9; tail, 3·65; tarsus, 3·4; bill from gape, 4·85; bill at front, 4·8; tibia bare, 2·1; mid-toe and claw, 2·2; weight, 9 ozs.; closed wings reach to end of tail.

Bill with the basal half pale yellowish horny, tinged reddish; the distal half brownish black, darkest at extreme tip; irides dark brown; feet dusky, with a greenish gloss; the claw of the mid-toe curves upwards, is square at the end, and the inner edge is finely toothed.

The Godwit is a winter visitant to the Nepal Valley, but does not appear to be common there.

877.—Numenius lineatus, *Cuv.*

Female, Valley, 2nd October.—Length, 23·8; expanse, 42; wing, 12; tail, 5·15; tarsus, 3·5; bill from gape, 5·7; bill at front, 5·65; tibia bare, 1·9; closed wings short of tail, 0·7; weight, 1 lb. 4 ozs.

Bill black towards the tip, the base of the maxilla fleshy brown, and the base of the mandible reddish fleshy; irides dark brown; feet pale bluish grey; claws dusky.

The Curlew is a winter visitor to the valley; it is found along the banks of the streams, is rather rare and always shy.

880.—Machetes pugnax, *Lin.*

Female, Valley, 4th September.—Length, 10·1; expanse, 19·9; wing, 6·1½; tail, 2·15; tarsus, 1·6; bill from gape, 1·26; bill at front, 1·2; mid-toe, 1·2; tibia bare, 0·9; closed wings reach beyond tip of tail, 0·1.

Bill black; feet dark plumbeous.

Male, young, Valley, 14th September.—Length, 10; expanse, 20·5; wing, 6·4; tail, 2·6; tarsus, 1·6; bill from gape, 1·3; bill at front, 1·2; mid-toe and claw, 1·3; tibia bare, 0·9; closed wings beyond tip of tail, 0·1; weight, 2·75 ozs.

Female, young, Valley, September.—Length, 9·7; expanse, 19·6; wing, 6·0; tail, 2·5; tarsus, 1·5; bill from gape, 1·25; bill at front, 1·15; tibia bare, 0·8; mid-toe and claw, 1·24; closed wings beyond tip of tail, 0·2.

Bill dull black, base of lower mandible horny brown; irides dark brown; feet dull greenish plumbeous; claws black.

Not uncommon in the valley of Nepal in September, on its way from the north; found on the banks of small streams in the central part of the valley, or on damp meadow land.

885.—Tringa temmincki, *Leisl.*

Two males, Valley, October and December.—Length, 6 and 6·1; expanse, 12 and 12·3; wing, 3·8 and 4; tail, 1·95 and 2·05; tarsus, 0·7 and 0·75; bill from gape, 0·67 and 0·69; bill at front, 0·65 and 0·7; tibia bare, 0·2 and 0·3; closed wings short of tail, 0·1 and 0·25; weight, 0·75 and 1 oz.

Bill black, greenish brown at base; irides dark brown; feet dull brownish green; claws black.

This Stint was fairly common in the valley of Nepal, from the middle of September to April, and was observed in the Nawakot district in November. It was found along the sandy banks of rivers, often associated with *Æ. curonicus.*

892.—Totanus ochropus, *Lin.*

Six specimens.—Length, 9·5 to 9·9; expanse, 17·5 to 18·6; wing, 5·53 to 5·9; tail, 2·4 to 2·65; tarsus, 1·3 to 1·5; tibia bare, 0·6 to 0·8; closed wings reach beyond end of tail, 0 to 0·35.

Bill plumbeous black, greenish at base; irides dark brown; feet dull greenish.

The Green Sand-piper is very common in winter, along the streams in the Nepal Valley, the Nawakot district, Markhu, and the Tarai and plains. It arrives in the valley early in September, and departs in April or early in May.

893.—Tringoides hypoleucus, *Lin.*

Nine specimens.—Length, 7·4 to 8·9; expanse, 12·8 to 14·7; wing, 4 to 4·6; tail, 2·4 to 2·75; tarsus, 0·85 to 1·0; tibia bare, 0·25 to 0·4; bill from gape, 1·06 to 1·3; bill at front, 0·95 to 1·13; closed wings short of tail, 0·5 to 0·95.

Bill slaty, black at tip; irides dark brown; feet pale dingy green; claws black.

The Common Sand-piper has the same distribution and time of arrival and departure as *T. ochropus*. It is, I think, rather more abundant than the Green Sand-piper, in the hills at least.

894.—Totanus glottis, *Lin.*

Two males.—Length, 13·2 and 13·75; expanse, 23·2 and 24; wing, 7·4 and 7·6; tail, 3·25 and 3·5; tarsus, 2·25 and 2·4; bill from gape, 2·3; bill at front, 2·13 and 2·16; tibia bare, 1·05 and 1·5.

Two females.—Length, 14 and 14·5; expanse, 24·5 and 25; wing, 7·7 and 7·8; tail, 3·3 and 3·8; tarsus, 2·5 and 2·6; bill from gape, 2·45 and 2·65; bill at front, 2·3; closed wings reach to end of tail.

Bill plumbeous at base, horny black at tip; irides dark brown; feet dull greenish, greenish plumbeous, and pure light plumbeous.

This species is fairly common in winter, in the Nepal Valley, the Nawakot district, and the Tarai and plains, along the course of the streams. The earliest date on which it was obtained in the valley was the 4th September.

903.—Fulica atra, *Lin.*

Male.—Length, 16·0; expanse, 30; wing, 8·7; tail, 2·8; tarsus, 2·2; bill from gape, 1·45; bill at front, 1·9; closed wings short of tail, 0·5; weight, 1 lb.

Irides crimson.

Female.—Length, 15·4; expanse, 30; wing, 7·8; tail, 2·7; tarsus, 2·1; bill from gape, 1·45; bill at front, 1·66; closed wings short of tail, 0·8; weight, 14 ozs.

The Coot is a winter visitor to the Nepal Valley, where it remains, in very small numbers, throughout the cold season, upon some tanks and ponds.

910.—Porzana bailloni, *Vieill.*

Male.—Length, 7·2; expanse, 11·5; wing, 3·55; tail, 2·2; tarsus, 1·05; bill from gape, 0·75; bill at front, 0·6; mid-toe and claw, 1·47; closed wings short of tail, 1·1; weight, 1·75 ozs.

Female.—Length, 7·2; tail, 2·0; tarsus, 1·1; bill from gape, 0·75; bill at front, 0·64; mid-toe and claw, 1·5; weight, 1·5 ozs.

Bill dark green, dusky along culmen; irides bright red; feet pale dingy green.

The chin and upper part of the throat white; a broad bluish grey supercilium reaches to sides of occiput.

Baillon's Crake is common in the valley of Nepal, from July to December, but is never seen or heard during the first half of the year. It particularly affects the fields of transplanted rice, and from thence its peculiar call may be heard in the morning and evening, and often by night, as soon as the plant has attained a height of about a foot or so. Its cry is loud and consists of three or four syllables, slowly repeated at first, and then the same notes are given in rapid succession, so as to form a long drawn chattering cry, *e.g.*, *tuk, tuk, tuk, —tuk tuk tuk tuk tuk tuk, kur.*

918.—Ciconia nigra, *Lin.*

Female, Nawakot District, November.—Length, 40·7; expanse, 75·5; wing, 21; tarsus, 7·6; tibia bare, 4·25; bill from gape, 7·7; bill at front, 7·65.

Bill dark red, paler at tip; orbital skin red; irides dark brown; legs and feet dull red.

Two young birds, Valley, October.—Length, 40·5 and 41; expanse, 75 and 76·5; wing, 21·5 and 21·85; tail, 9·5 and 9·8; tarsus, 7·5 and 7·6; tibia bare, 3·8 and 4·1; mid-toe and claw, 3·8; bill from gape, 7·3 and 7·45; bill at front, 6·6 and 6·75; closed wings short of tail, 0·8 and 0·9; weight, 5 lbs. 7·5 ozs. and 5 lbs. 11 ozs.

Bill horny green, brownish at base; orbital skin purplish brown; irides dark brown; legs and feet dingy greenish, the upper part of the tibia buffy; claws greenish horny.

The Black Stork is common in the valley of Nepal and the Nawakot district from the end of September to December, and perhaps throughout the cold season. Its habits are much the same as those of the next species.

920.—Dissura episcopa, *Bodd.*

Two males.—Length, 36 and 37·5; expanse, 72 and 74; wing, 20 and 20·5; tail, 7·7 and 8; tarsus, 6·83 and 7·0; bill from gape, 6·42 and 6·7; bill at front, 6·1 and 6·5; closed wings reach beyond end of tail, 0·8 and 1·2; tibia bare, 4·4 and 5; weight, 5 lbs. and 6 lbs. 1 oz.

Two females.—Length, 35·3 and 37; expanse, 70; wing, 19·6 and 20; tail, 7·6 and 8·2; tarsus, 6·7 and 7; bill from

gape, 6·5 and 6·9; bill at front, 6 and 6·5; tibia bare, 4·3 and 5; closed wings beyond tail, 0·6 and 0·7; weight, 4 lbs. 8 ozs. and 5 lbs. 2 ozs.

Bill black, the culmen, tip, gonys and margins deep red; bare skin of head dark plumbeous; eyelids pale grey, dusky along their margins; irides crimson; junction of sclerotic with cornea coal black; exposed part of sclerotic bright yellow; naked skin (0·5 broad) along whole length of ulna bright vermilion; legs and feet deep dull red; claws horny black.

The White-necked Stork is common in the valley of Nepal from May to December, and in the Nawakot district in November. It frequents rice fields, the banks of streams and ponds, usually in small parties. It is less shy and consequently more easily approached than *C. nigra*.

924 *bis*.—Herodias alba, *Lin.*

Female, Valley, December.—Length, 40·5; expanse, 61·0; wing, 17·0; tail, 7·2; tarsus, 7·0; bill from gape, 6·0; bill at front, 4·85; tibia bare, 4·8; weight, 3 lbs.; closed wings reach to end of tail.

Bill yellow, dusky at tip; orbital skin pale green; irides pale straw colour; tibia dingy greenish; feet black; claws plumbeous black.

The Large White Heron, which seems to be quite distinct from the preceding species, is a winter visitor to the Nepal Valley and the Nawakot district. It occurred in the valley in smaller numbers than *H. torra*, and was not observed in the plains.

925.—Herodias torra, *B.-Ham.*

? *Male, Valley, September.*—Length, 36; expanse, 54; wing, 14·2; tail, 5·8; tarsus, 6·2; bill from gape, 5·3; bill at front, 4·3; tibia bare, 3·8; mid-toe and claw, 4·4; closed wings reach to end of tail.

Bill yellow; orbital skin greenish; irides light straw color; legs and feet black.

The Lesser White Heron is a cold weather visitor to the valley of Nepal. It arrives early in September, and is fairly common up to December, but is not noticed later. It was tolerably common in the Nawakot district in November and in the Tarai and plains in December.

927.—Herodias garzetta, *Lin.*

This species is common in the Tarai and plains, and in parts of the Nawakot district, in winter. A few birds stray to the

valley in autumn (possibly on their way from Nawakot to the plains), but the Little Egret is never common there.

929.—Bubulcus coromandus, *Bodd.*

Nine specimens, Valley, June—September.—Length, 19·5 to 21·7; expanse, 35 to 37·5; wing, 9·5 to 10·5; tail, 3·4 to 4·0; tarsus, 3 to 3·5; tibia bare, 1·4 to 1·8; bill from gape, 2·8 to 3·1; bill at front, 2·15 to 2·4.

Bill horny yellow to orange yellow; orbital skin yellow or greenish yellow; irides bright light yellow; tibia dull yellow or greenish yellow; tarsus black or greenish dusky; toes and claws black.

The Cattle Heron is a permanent resident in the valley of Nepal, and is very common from the beginning of March to the end of November. It is also common in the Nawakot district in November, and in the Tarai and plains in December.

930.—Ardeola grayi, *Sykes.*

Six specimens.—Length, 17·5 to 20·7; expanse, 25·8 to 29; wing, 7·5 to 8·7; tail, 2·8 to 3·1; tarsus, 2·1 to 2·4; tibia bare, 0·75 to 0·95; bill from gape, 2·93 to 3·2; bill at front, 2·2 to 2·5.

Bill blue at base, greenish yellow about the middle, and black at tip; orbital skin greenish; irides bright light yellow; feet dull greenish yellow.

The Paddy Bird is very common and a permanent resident in the Nepal Valley, the Nawakot district, and the Tarai and plains of Nepal. In the valley it breeds from May to July.

937.—Nycticorax griseus, *Lin.*

Six specimens.—Length, 20 to 24; expanse, 38 to 43; wing, 10·8 to 11·5; tail, 4·1 to 4·5; tarsus, 2·7 to 2·9; tibia bare, 0·6 to 1·03; bill from gape, 3·6 to 3·9; bill at front, 2·8 to 3·0.

Bill black above and at tip, the sides mottled dusky and greenish, and the base of the lower mandible yellow or pale greenish horny; gape and orbital skin pale greenish; irides scarlet or blood red; feet pale greenish yellow; claws dusky horny.

The Night Heron is a common bird in the Nepal Valley, and resides there permanently. Although it is most frequently seen flying out after sunset to its feeding grounds its habits are not purely nocturnal. I have often seen it flying about during the day, feeding in rice fields and swamps; and I have shot it at mid-day in such places, in June and July. It commonly haunts the edges of tanks.

954.—Casarca rutila, *Pall.*

Female, December.—Length, 24; expanse, 45·5; wing, 14; tail, 6; tarsus, 2·1; bill from gape, 2·1; bill at front, 1·6; closed wings reach to end of tail.

Bill black; irides blackish brown; feet black, the webs with a purplish tinge; claws horny black.

The Brahminy Duck is a winter visitor to the valley, but is never very common. It arrives about the end of September or the beginning of October, and some of the birds remain in the valley until about the middle of December; after the latter date it is not found again until about the middle of March, and throughout April. It was found in small numbers in the Nawakot district in November, and about streams and wet fields in the Tarai and plains in December.

957.—Spatula clypeata, *Lin.*

Male, Valley, November.—Length, 20·1; expanse, 30; wing, 9·0; tail, 3·8; tarsus, 1·2; bill from gape, 2·95; bill at front, 2·5; closed wings short of tail, 1·4; mid-toe, 1·85.

Bill orange, brownish above; feet orange, the webs dusky.

The Shoveller is a winter visitor to the Nepal Valley, being most common there on its migrations to and from the plains, but especially in October and November. A few birds, however, probably remain in the valley throughout the cold season.

961.—Chaulelasmus streperus, *Lin.*

Male, Valley, November.—Length, 19·4; expanse, 33·5; wing, 10·1; tail, 3·9; tarsus, 1·4; bill from gape, 2·0; bill at front, 1·6; closed wings short of tail, 0·6; weight, 1 lb 4 ozs.

Female, Valley, April.—Length, 18·5; wing, 9·5; tail, 3·7; tarsus, 1·4; bill at front, 1·4.

The Gadwall is a winter visitant to the Nepal Valley, but does not remain there throughout the cold season. It is pretty common from September to nearly the end of November, and again in March and April.

962.—Dafila acuta, *Lin.*

Four males.—Length, 22 to 25; expanse, 32 to 36·5; wing, 10·3 to 10·9; tail, 4·8 to 5·8; tarsus, 1·6; bill from gape, 2·4; bill at front, 2·05 to 2·1.

Three females.—Length, 20 to 21·5; expanse, 32 to 33·5; wing, 10 to 10·2; tail, 4·2 to 4·8; tarsus, 1·45 to 1·5; bill from gape, 2·1 to 2·3; bill at front, 1·78 to 1·95.

Bill black above and at tip; the sides of the upper mandible and the basal part of the lower slaty or horny grey; irides

dark brown; feet slaty or dark grey; the webs purplish slaty; claws blackish plumbeous. A male weighed 1 lb 10 ozs., and a female 1lb 2ozs.

The Pintail is the commonest of the Duck tribe in the Nepal Valley in winter. It is most abundant from September to November, and in March and April, but it is to be found in the valley throughout the cold season.

963.—Mareca penelope, *Lin.*

Male, Valley, November.—Length, 18·1; expanse, 33; wing, 10·1; tail, 4·0; tarsus, 1·4; bill from gape, 1·6; bill at front, 1·4; closed wings reach to end of tail; weight, 1 lb 4·5 ozs.

Bill dusky plumbeous, black towards the tip; irides dark brown; feet dusky plumbeous.

The Widgeon is found in the valley of Nepal throughout the cold season, but not in any great numbers.

964.—Querquedula crecca, *Lin.*

Male.—Length, 15; expanse, 24·2; wing, 7·2; tail, 3·2; tarsus, 1·2; bill from gape, 1·65; bill at front, 1·5; closed wings short of tail, 0·65; weight, 10·5 ozs.

Three females.—Length, 13·5 to 14·7; expanse, 23 to 24; wing, 6·9 to 7·2; tail, 3·2 to 3·25; tarsus, 1·1 to 1·15; bill from gape, 1·55 to 1·6; bill at front, 1·4 to 1·45; closed wings short of tail, 0·2 to 0·4; weight, 8 to 9·5 ozs.

Common in the Nepal Valley and the Nawakot district throughout the cold season.

965.—Querquedula circia, *Lin.*

Male.—Length, 15·5; expanse, 25; wing, 7·7; tail, 3·0; tarsus, 1·1; bill from gape, 1·85; bill at front, 1·55; closed wings short of tail, 1·7.

Two females.—Length, 14·8 and 15·4; expanse, 24·6 and 24·8; wing, 7·3 and 7·4; tail, 3 and 3·2; tarsus, 1·0 and 1·1; bill from gape, 1·65 and 1·7; bill at front, 1·5; closed wings short of tail, 1·5.

The Garganey Teal is found during the whole of the cold season in the Nepal Valley and the Nawakot district, but is perhaps rather less common than *Q. crecca*.

969.—Fuligula nyroca, *Güld.*

The White-eyed Duck passes over the valley on migration, but does not appear to make any lengthened stay there. It was very common in December on a lake about two miles from Bichiakoh.

972.—Mergus merganser, *Lin.*

Only observed, in Nepal, along the course of the Tadi river in the Nawakot district.

975.—Podiceps minor, *Lin.*

Three specimens, Valley.—Length, 9·4 to 9·6; expanse, 16·5 to 16·6; wing, 3·9 to 3·95; tail, 1·4; tarsus, 1·3 to 1·4; bill from gape, 1·05 to 1·1; bill at front, 0·7 to 0·78.

The Little Grebe is tolerably common on the tanks in the Nepal Valley from the beginning of September to the middle of May.

985.—Sterna seena, *Sykes.*

Female, Valley, 17th September.—Length, 15 9; expanse, 32; wing, 10·23; tail, 7·2; tarsus, 0·8; bill from gape, 2·15; bill at front, 1·4; closed wings short of tail, 2·0; weight, 5 ozs.

Bill, mouth, and tongue deep yellow; irides brown; feet bright coral red; claws black.

This Tern merely passes through the Nepal Valley, about the beginning of winter and of summer, and does not remain more than a few days over the streams.

1005.—Phalacrocorax carbo, *Lin.*

The Large Cormorant was not uncommon along the Trisul Ganga, in the Nawakot district, in November.

1008.—Plotus melanogaster, *Penn.*

Fairly common on the lake near Bichiakoh in December.

III.

It may be useful now to give some nominal lists, which will show at a glance the station of the species included in my paper.

The following is a list of the 243 species found in the valley of Nepal. This number might be considerably augmented by a careful study of Mr. Hodgson's manuscript notes; and I greatly regret that I have not had the necessary leisure to accomplish this task, which, however, must be done by some one before a complete history of the Birds of India can be written:—

1. Vultur monachus.
2. Otogyps calvus.
3*bis*. Gyps fulvescens.
3*ter*. Gyps himalayensis.
4*ter*. Gyps tenuirostris.
5. Pseudogyps bengalensis.
7. Gypaëtus barbatus.
8. Falco peregrinus.
11. Falco jugger.
16. Falco chiquera.
17. Cerchneis tinnunculus.
21. Astur palumbarius.
23. Astur badius.
27*bis*. Aquila nipalensis.
33. Nisaëtus fasciatus.
39. Spilornis cheela.

42. Haliaëtus leucoryphus.
45. Buteo ferox.
47. Buteo plumipes.
50. Circus cyaneus.
51. Circus macrurus.
54. Circus æruginosus.
55. Haliastur indus.
56. Milvus govinda.
56*bis*. Milvus melanotis.
56*ter*. Milvus affinis.
60. Strix javanica.
64. Syrnium newarense.
P64*bis*. Syrnium hodgsoni.
71. Bubo nipalensis.
75. Scops lettia.
79. Glaucidium cuculoides.
82. Hirundo rustica.
85*bis*. Hirundo nipalensis.
89. Cotyle sinensis.
91. Ptyonoprogne rupestris.
100. Cypsellus affinis.
103. Collocalia unicolor.
107*bis*. Caprimulgus jotaka.
P Caprimulgus sp.
117. Merops viridis.
123. Coracias indica.
129. Halcyon smyrnensis.
134. Alcedo bengalensis.
150. Palæornis schisticeps.
152. Palæornis fasciatus.
155. Picus majoroides.
159*bis*. Picus incognitus.
172. Gecinus occipitalis.
174. Chrysophlegma chlorolophus.
178. Micropternus phæoceps.
186. Vivia innominata.
191. Megalæma marshallorum.
195. Megalæma asiatica.
196. Megalæma franklini.
197. Xantholæma hæmacephala.
199. Cuculus canorus.
200. Cuculus striatus.
205. Hierococcyx varius.
207. Hierococcyx sparveroides.
213. Coccystes coromandus.
214. Eudynamys honorata.
215. Rhopodytes tristis.
229. Æthopyga nipalensis.
234. Cinnyris asiatica.
240. Piprisoma agile.
241. Myzanthe ignipectus.
247. Tichodroma muraria.
248. Sitta himalayensis.
251. Sitta cinnamomeiventris.
254. Upupa epops.
258. Lanius tephronotus.
259. Lanius nigriceps.
269. Volvocivora melaschista.
270. Graucalus macii.
271. Pericrocotus speciosus.
273. Pericrocotus brevirostris.
278. Buchanga atra.
280. Buchanga longicaudata.
288. Muscipeta paradisi.
294. Chelidorhynx hypoxantha.
295. Culicicapa ceylonensis.
298 Alseonax terricolor.
301. Stoporala melanops.
304. Cvornis rubeculoides.
315. Niltava macgrigoriæ.
319. Siphia strophiata.
319*bis*. Siphia rufogularis.
321. Siphia superciliaris.
323. Erythrosterna albicilla.
343. Myiophoneus temminckii.
347. Cinclus asiaticus.
351. Cyanocinclus cyanus.
352. Petrophila erythrogastra.
353. Petrophila cinclorhyncha.
355. Geocichla citrina.
356. Geocichla unicolor.
358. Geocichla dissimilis.
361. Merula boulboul.
362. Merula albocincta.
365. Turdus atrigularis.
371. Oreocincla dauma.
382. Grammatoptila striata.
388. Alcippe nipalensis.
400. Pomatorhinus ruficollis.
405. Pomatorhinus erythrogenys.
407. Garrulax leucolophus.
411. Garrulax albogularis.
415. Trochalopteron erythrocephalum.
425. Trochalopteron lineatum.
428. Actinodura nipalensis.
429. Malacias capistratus.
444. Hypsipetes psaroides.
447. Hypsipetes macclellandi.
458. Otocompsa leucogenys.
461. Molpastes pygæus.
466. Phyllornis hardwickii.
470. Oriolus kundoo.
471*ter*. Oriolus tenuirostris.
475. Copsychus saularis.
483. Pratincola indicus.
486. Pratincola ferreus.
498. Ruticilla hodgsoni.
503. Ruticilla frontalis.
505. Rhyacornis fuliginosus.
506. Chimarrornis leucocephalus.
508. Nemura cyanura.
513. Calliope pectoralis.
514. Cyanecula suecica.
530. Orthotomus sutorius.
547. Suya crinigera.
559. Phylloscopus nitidus.
560. Phylloscopus viridanus.
561. Phylloscopus affinis.
564. Reguloides trochiloides.
565*bis*. Reguloides humii.
566. Reguloides proregulus.
568. Reguloides crochrous.
572. Abrornis xanthoschistus.
578. Abrornis castaneiceps.
584. Henicurus maculatus.
584*bis*. Henicurus guttatus.
586. Henicurus schistaceus.
587. Henicurus scouleri.
589*bis*. Motacilla hodgsoni.
590. Motacilla leucopsis.
591*bis*. Motacilla alba.
591*quat*. Motacilla ocularis.
592. Calobates melanope.
596. Anthus maculatus.

599. Corydalla richardi.
600. Corydalla rufula.
605. Anthus rosaceus.
606. Heterura sylvana.
609. Pteruthius erythropterus.
616. Siva strigula.
617. Siva cyanuroptera.
618. Minla ignotincta.
619. Minla castaneiceps.
623. Ixulus flavicollis.
626. Yuhina gularis.
627. Yuhina occipitalis.
631. Zosterops palpebrosa.
632. Sylviparus modestus.
634. Ægithaliscus erythrocephalus.
644. Parus monticolus.
645. Parus nipalensis.
647. Machlolophus xanthogenys.
660. Corvus culminatus.
661. Corvus intermedius.
663. Corvus splendens.
669. Garrulus bispecularis.
671. Urocissa occipitalis.
672. Urocissa flavirostris.
676. Dendrocitta himalayensis.
684. Acridotheres tristis.
686. Acridotheres fuscus.
688. Sturnia malabarica.
694*bis*. Ploceus baya.
698. Amadina rubronigra.
699. Amadina punctulata.
702. Amadina acuticauda.
706. Passer indicus.
710. Passer montanus.
723. Euspiza aureola.
724. Melophus melanicterus.
731. Pyrrhula nipalensis.
738. Carpodacus erythrinus.
746. Procarduelis nipalensis.
750. Hypacanthis spinoides.
761. Calandrella brachydactyla.
766. Alauda dulcivox.
767. Alauda gulgula.
778. Sphenocercus sphenurus.
783. Alsocomus hodgsoni.
788. Columba intermedia.
792. Turtur orientalis.
795. Turtur suratensis.
810*bis*. Gallophasis leucomelanus.
818. Francolinus vulgaris.
820. Caccabis chukar.
824. Arboricola torqueolus.
825. Arboricola rufogularis.
829. Coturnix communis.
833. Turnix plumbipes.
845. Charadrius fulvus.
849. Ægialitis dubia.
855. Lobivanellus indicus.
857. Hoplopterus ventralis.
866. Anthropoides virgo.
867. Scolopax rusticola.
868. Gallinago nemoricola.
869. Gallinago solitaria.
870. Gallinago sthenura.
871. Gallinago gallinaria.
872. Gallinago gallinula.
875. Limosa ægocephala.
877. Numenius lineatus.
880. Machetes pugnax.
885. Tringa temminckii.
892. Totanus ochropus.
893. Tringoides hypoleucus.
894. Totanus glottis.
903. Fulica atra.
910. Porzana bailloni.
918. Ciconia nigra.
920. Dissura episcopa.
924*bis*. Herodias alba.
925. Herodias torra.
927. Herodias garzetta.
929. Bubulcus coromandus.
930. Ardeola grayi.
937. Nycticorax griseus.
954. Casarca rutila.
957. Spatula clypeata.
961. Chaulelasmus streperus.
962. Dafila acuta.
963. Mareca penelope.
964. Querquedula crecca.
965. Querquedula circia.
969. Fuligula nyroca.
975. Podiceps minor.
985. Sterna seena.

I must preface my list of the Birds of Nawakot by quoting the following extract from Mr. Hodgson's Essay on "Nayakote and its Tribes :"

"The genera of mammals and birds observed during a hurried visit, under disadvantageous circumstances, were *Nemorhedus* (*ghoral*), *Styloceros* (*ratwa*), *Martes* (*flavigula*), *Sciuropterus* (*magnificus*), *Sciurus* (*locria*), all common to the Greater Valley ; *Corvus*, *Pastor*, *Coracias*, *Alauda*, *Anthus*, *Motacilla*, *Budytes*, *Pyrgita*, *Phœnicura*, *Saxicola*, *Phœnicornis*, *Dicrurus*, *Muscicapa*, *Tichodroma* (*muraria*), *Picus*, *Palæornis*, *Clorhynchus* (Ibidorhynchus, Gould), *Totanus*, *Tringa*, *Egretta*, *Anas*, *Querquedula*, *Carbo*, *Mergus*, *Turtur*, *Euplocomus*, *Gallus*, (Jungle Cock, *bankiva*), *Chætopus*, *Perdix*, *Coturnix*, *Hemi-*

podius. Of these, *Gallus*, *Coracias* and *Palæornis*, unknown to the Greater Valley, proclaim the *quasi*-Indian climate of Nawakot; as *Carbo* and *Mergus*, also unknown there, do its larger rivers.

For the rest, the species, as well as the genera, are those common to both districts. The Wall-creeper of Europe, supposed to be confined thereto, is frequent in both."

This passage contains, I believe, the only notice hitherto published of the Mammals and Birds of the Nawakot district. Mr. Hodgson's visit to the district must have been made in winter; the only time I saw that part of Nepal was towards the end of November. With reference to Mr. Hodgson's enumeration and remarks, I would note that *Coracias* and *Palæornis* are not unknown to the valley of Nepal; and that *Ceryle*, *Taccocua* and *Grocopus* must be added to the genera found in Nawakot, but absent from the Great Valley. A complete list of the birds of the Nawakot district would doubtless show a large number of species never found in the Nepal Valley.

The following is a list of the 94 species as yet known to occur in the Nawakot district:—

5. Pseudogyps bengalensis.
17. Cerchneis tinnunculus.
23. Astur badius.
Aquila sp.
54. Circus æruginosus.
56. Milvus govinda.
64. Syrnium newarense.
Scops? pennatus.
79. Glaucidium cuculoides.
85*bis*. Hirundo nipalensis.
89. Cotyle sinensis.
91. Ptyonoprogne rupestris.
100. Cypsellus affinis.
Caprimulgus sp.
123. Coracias indica.
129. Halcyon smyrnensis.
134. Alcedo bengalensis.
136. Ceryle rudis.
149. Palæornis purpureus.
150. Palæornis schisticeps.
157. Picus macii.
Picus sp.
195. Megalæma asiatica.
221. Taccocua infuscata.
247. Tichodroma muraria.
259. Lanius nigriceps.
270. Graucalus macii.
271. Pericrocotus speciosus.
273. Pericrocotus brevirostris.
278. Buchanga atra.
294. Chelidorhynx hypoxantha.
295. Culicicapa ceylonensis.
347. Cinclus asiaticus.
401. Pomatorhinus ferruginosus?
407. Garrulax leucolophus.
458. Otocompsa leucogenys.
461. Molpastes pygæus.
475. Copsychus saularis.
483. Pratincola indicus.
498. Ruticilla hodgsoni.
505. Rhyacornis fuliginosus.
506. Chimarrornis leucocephalus.
530. Orthotomus sutorius.
587. Henicurus scouleri.
589*bis*. Motacilla hodgsoni.
590. Motacilla leucopsis.
592. Calobates melanope.
594. Budytes calcarata?
596. Anthus maculatus.
600. Corydalla rufula.
645. Parus nipalensis.
660. Corvus culminatus.
663. Corvus splendens.
672. Urocissa flavirostris.
676. Dendrocitta himalayensis.
684. Acridotheres tristis.
686. Acridotheres fuscus.
706. Passer indicus?
767. Alauda gulgula?
772. Crocopus phœnicopterus.
788. Columba intermedia.
792. Turtur orientalis.
795. Turtur suratensis.
810*bis*. Gallophasis leucomelanus.
812. Gallus ferrugineus.
818. Francolinus vulgaris.
820. Caccabis chukar.
829. Coturnix communis.
833. Turnix plumbipes.
848*bis*. Ægialitis placida.
849. Ægialitis dubia.
855. Lobivanellus indicus.
870. Gallinago sthenura.
871. Gallinago gallinaria.

872. Gallinago gallinula.
879. Ibidorhyncha struthersi.
885. Tringa temminckii.
892. Totanus ochropus.
893. Tringoides hypoleucus.
894. Totanus glottis.
910. Porzana bailloni.
918. Ciconia nigra.
920. Dissura episcopa.
924*bis*. Herodias alba.
925. Herodias torra.
927. Herodias garzetta.
929. Bubulcus coromandus.
930. Ardeola grayi.
954. Casarca rutila.
962. Dafila acuta.
964. Querquedula crecca.
965. Querquedula circia.
972. Mergus merganser.
1005. Phalacrocorax carbo.

My list of the birds found in the plains of Nepal, the Tarai, Sâl Forest, Dún and Lower Hills is too imperfect to be worth giving in detail. I will here only note the 38 species found in those parts of Nepal, but not observed in the Great Valley or the Nawakot district:—

53. Circus melanoleucus.
76. Carine brama.
147*ter*. Palæornis nipalensis.
148. Palæornis torquatus.
163. Yungipicus pygmæus.
171. Gecinus striolatus.
192. Megalæma hodgsoni.
265. Tephrodornis pondicerianus.
267*A*. Hemipus capitalis.
281. Buchanga cœrulescens.
282. Chaptia ænea.
284. Dissemurus malabaroides.
286. Chibia hottentotta.
402. Pomatorhinus schisticeps.
430. Sibia picaoides.
432. Malacocercus terricolor.
448. Hemixus flavala.
451. Criniger flaveolus.
456. Rubigula flaviventris.
460. Otocompsa emeria.
465. Phyllornis aurifrons.
472. Oriolus melanocephalus.
474. Analcipus trailli.
594. Budytes calcarata.
615. Mesia argentauris.
650. Melanochlora sultanea.
674. Dendrocitta rufa.
681. Sturnus vulgaris.
683. Sturnopastor contra.
693. Eulabes intermedia.
760. Pyrrhulauda grisea.
762. Alaudula raytal.
796. Turtur risorius.
797. Turtur tranquebaricus.
803. Pavo cristatus.
863. Grus antigone.
865. Grus communis.
1008. Plotus melanogaster.

To complete the enumeration of the birds included in this paper, the following six species, found in higher and more northerly regions than the Nepal Valley, are added:—

790. Columba leuconota.
804. Lophophorus impeyanus.
805. Ceriornis satyra.
807. Ithagenes cruentus.
808*ter*. Pucrasia nipalensis.
809. Phasianus wallichi.

To sum up: 243 species are recorded from the valley of Nepal; 13 species found in the Nawakot district, but not obtained in the Nepal Valley; 38 species from the plains and Lower Region of Nepal, not included in the lists of birds from the Great Valley or Nawakot; and 6 species from the Upper Region of Nepal, not found in any of the localities previously mentioned; making, in all, a total of 300 species. A complete list of the birds to be found in the Territory of Nepal, including residents and migrants, would probably not fall short of 700 species.

Birds' Nesting on the "Eastern Narra."

By Scrope B. Doig, Esq., C.E.

It is with considerable hesitation that I venture to place before the readers of "Stray Feathers" an account of my observations on the nidification of some few birds in the "Eastern Narra."

I feel that I am very ignorant of ornithology as a science, having only lately directed my attention to the subject; but, on the other hand, I have been very fortunate in discovering the breeding haunts of several species, of whose nidification in India, little or nothing has been hitherto known, so that a brief record of the results of my discoveries may not be altogether valueless.

I have, therefore, at the request of the Editor, strung together a few notes on the subject in which I have endeavoured to put the information I have gathered into as concise a form as possible.

Any little success which has attended my efforts is due first to the assistance I have received from my friend, Captain E. A. Butler, and secondly to the kindly interest taken in my work by Mr. Hume.

I propose to divide my paper into three sections, and, as the "Eastern Narra" is probably a *terra incognita* to many, will begin by giving a brief description of it.

Section I.

The Eastern Narra: Its Geographical position, its physical features, and a tentative list of the birds which breed there.

The Eastern Narra is supposed formerly to have been a branch of the Indus. At present, however, except in years of flood, its only connection with the river is by an artificial channel some twelve miles in length, taking off from the river at Rohree. For the first two hundred miles of its course the Narra runs through the territory of H. H. Meer Ali Murad, the banks on both sides being a sandy desert. In about north latitude 26°15′ it debouches into the plain, and hugging with its left bank the sand hills along the desert, it runs in a southerly direction parallel to the Indus, and at a distance of about 80 miles from it, until it finally empties itself into the Ruun of Kutch at Lukput.

The river, thus briefly described, gives its name to a tract of country bounded on the east by the deserts adjoining Jeysulmeer and Marwar, and on its west by the Hydrabad districts.

The physical features of the country are, I may say, quite different to the rest of Sind. Instead of the bare dry plain of which the greater portion of the province consists, there is here a carpet of evergreen grass with a dense tamarisk, babool and kundy *(Acacia sp.)* jungle, interspersed with large deep lakes running miles into the sand hills, and having a perennial stream of water running through the valley. The consequence is, that the district is a perfect paradise to all aquatically-inclined birds, which breed and thrive there, in the greatest profusion. The following is a list of all the birds which I believe to breed in the district. Of those entered in italics, I have not actually taken the eggs, but from personal observations I have every reason to believe that they are permanent residents and do breed there.

Tentative list of Birds breeding in the Eastern Narra.

No. in Jerdon.	Scientific Name.	Months in which Eggs were taken.
2	Otogyps calvus, *Scop.* ...	... 15th February to 15th April.
5	Pseudogyps bengalensis, *Gm.*	... 15th November to 15th December.
6	Neophron ginginianus, *Lath.*	... March, April.
11	Falco jugger, *J. E. Gr.*	... 1st to 15th February.
16	*Falco chiquera, Daud.* ...	... March.
23	Astur badius, *Gm.* ...	... April.
28	*Aquila clanga, Pall.* ...	... November, December.
29	Aquila vindhiana, *Frankl.*	... January.
33	*Nisaëtus fasciatus, Vieill.*	... December.
38	*Circaëtus gallicus, Gm.* ...	... May, June.
42	Haliaëtus leucoryphus, Pall.	... November, December.
48	Butastur teesa, Frankl. ...	... April.
55	*Haliastur indus, Bodd.* ...	... March.
56	Milvus govinda, Sykes. ...	... November to April.
59	*Elanus cæruleus, Desf.* ...	... August.
70	Bubo coromandus, Lath....	... December.
72	*Ketupa ceylonensis, Gm.*	... December.
76	Carine brama, Tem. ...	... March, April.
84	Hirundo filifera, Steph. ...	... May to September.
89	Cotyle sinensis, J. E. Gr.	... February.
100	*Cypsellus affinis, J. E. Gr.*	... May, June.
113	Caprimulgus mahrattensis, Sykes.	... February to August.
117	Merops viridis, Lin. ...	... April.
118	*Merops philippinus, Lin.*	... July.
123	Coracias indica, Lin. ...	... April, May.
129	Halcyon smyrnensis, Lin.	... April.
134	Alcedo bengalensis, Gm....	... March, April.
136	Ceryle rudis, Lin. ...	... March, April, and October.
148	Palæornis torquatus, Bodd.	... May.
158	*Picus sindianus, Gould.*...	... April.
160	*Picus mahrattensis, Lath.*	... April.
182	Brachypternus dilutus, Bly.	... April.
212	*Coccystes jacobinus, Bodd.*	... June, July.
217*quint*	Centrococcyx maximus, Hume.	... June, July.
234	Cinnyris asiatica, Lath. ...	... May, June.
256	Lanius lahtora, Sykes. ...	... April.

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Tentative list of Birds breeding in the Eastern Narra.—(Contd.)

No. in Jerdon.	Scientific Name.	Months in which they breed.
267	Lanius erythronotus, Vig.	... April.
260	Lanius vittatus, Valenc.	... April, June.
278	Buchanga atra, Herm. ...	... April, May.
385	*Pyctoris sinensis, Gm.* ...	... July, August.
432	Malacocercus terricolor, Hodgs.	... June.
438	Chatarrhæa caudata, Dum.	... March to October.
439	Chatarrhæa earlii, Bly. ...	... March to October.
443	Laticilla burnesi, Bly. ...	... March, June, and September.
459	Otocompsa leucotis, Gould.	... May to August.
462	Molpastes hæmorrhous, Gm.	... July, August.
470	*Oriolus kundoo, Sykes.*	... July, August.
480	Thamnobia cambaiensis, Lath.	... April.
481	Pratincola caprata ...	... April to August.
532	Prinia flaviventris, Deless.	... March, June, and September.
543	Drymœca inornata, Sykes.	... March.
550	Burnesia gracilis, Licht.	... March, June, and September.
551	*Franklinia buchanani, Bly.*	... April.
589	*Motacilla maderaspatensis, Gm.*	... April.
600	Corydalla rufula, Vieill.	... April.
663	Corvus splendens, Vieill.	... July, August.
674	Dendrocitta rufa, Scop.	... May.
681*bis*.	Sturnus minor, Hume.	... February to June.
684	Acridotheres tristis, Lin.	... May, June, July, and August.
685	Acridotheres ginginianus, Lath.	... May.
694	*Ploceus philippinus**, *Lin.*	... July, August.
695	Ploceus manyar, Horsf.	... July, August.
696	*Ploceus bengalensis, Lin.*	... July, August.
703	Amadina malabarica, Lin.	... April to September.
706	Passer domesticus, Lin.	... January to December.
711	Gymnoris flavicollis, Frankl.	... May, June.
760	*Pyrrhulauda grisea, Scop.*	... February, March.
760*bis*	*Pyrrhulauda melanauchen, Cab.*	... February and March.
761	*Calandrella brachydactyla, Leisl.*	... April and May.
769	Galerita cristata, Lin.	... April and May.
788	Columba intermedia, Strickl.	... February to December.
795	*Turtur suratensis, Lin.*	... April.
796	Turtur risorius, Lin.	... March to September.
797	Turtur tranquebaricus†, Herm.	... April.
802	Pterocles exustus, Tem.	... February, March, April.
803	*Pavo cristatus, Lin.*	... July.
818	Francolinus vulgaris, Steph.	... April and October.
822	Ortygornis pondicerianus, Gm.	... April.
829	*Coturnix communis, Bonn.*	... May, June.
840	Cursorius coromandelicus, Gm.	... July.
842	Glareola orientalis, Leach.	... May.
842*bis*	Glareola pratincola, Lin.	... May.
855	Lobivanellus indicus, Bodd.	... April, May, June.
858	*Æsacus recurvirostris, Cuv.*	... April and May.
859	Œdicnemus scolopax, S. G. Gm.	... April and May.
873	Rhynchæa bengalensis, Lin.	... May, June.
898	Himantopus candidus, Bonn.	... June.
901	Hydrophasianus chirurgus, Scop.	... July, August.
902	Porphyrio poliocephalus, Lath.	... June, July, August.
904	*Gallicrex cinerea, Gm.*	... June.
905	Gallinula chloropus, Lin.	... June.
907	Erythra phœnicura, Penn.	... June.
917	Xenorhynchus asiaticus, Lath.	... October, November, December.
923	Ardea cinerea, Lin.	... June to September.

* Entered as *P. baya*, S. F., V., 323, the proper assignment of the two names not having then been ascertained.—A. O. H.

† Entered erroneously as *humilis*, S. F., I., 218, the two species not then having been discriminated.—A. O. H.

Tentative list of Birds breeding in the Eastern Narra.— (Concld.)

No. in Jerdon.	Scientific Name.	Months in which Eggs were taken.
924	Ardea purpurea, Lin.	... June to September.
925	Herodias torra, B. Ham.	... July, August.
926	Herodias intermedia, Hass.	... July, August.
927	Herodias garzetta, Lin.	... July, August.
929	Bubulcus coromandus, Bodd.	... July, August.
930	Ardeola grayi, Sykes.	... June, July.
931	Butorides javanica. Horsf.	... June, July, August.
932	Ardetta flavicollis, Lath.	... June, July.
933	*Ardetta cinnamomea, Gm.*	... June, July, August.
934	Ardetta sinensis, Gm.	... June, July, August.
935	Ardetta minuta, Lin.	... June, July.
937	Nycticorax griseus, Lin.	... June, July, August.
938	Tantalus leucocephalus, Forst.	... October, November.
939	Platalea leucorodia, Lin.	... October, November.
940	Anastomus oscitans, Bodd.	... August.
941	Ibis melanocephala, Lath.	... October, November, December.
942	Inocotis papillosus, Tem.	... June to November.
943	Falcinellus igneus, S. G. Gm.	... June, July.
952	Dendrocygna javanica. Horsf.	... June, July.
953	*Dendrocygna fulva, Gm.*	... June, July.
959	Anas pœcilorhyncha. Forst.	... May, June, September.
975	*Podiceps minor, Gm.*	... July, August.
985	*Sterna seena, Sykes.*	... June, July.
987	Sterna melanogastra, Tem.	... June, July.
1005	Phalacrocorax carbo, Lin.	... November.
1006	Phalacrocorax fuscicollis, Steph.	... July to December.
1007	Phalacrocorax pygmæus, Pall.	... June to December.
1008	Plotus melanogaster, Penn.	... June to December.

Section II.

*"Detailed notes regarding certain species the nidification of which has not previously been noticed in India."**

SPECIES NOTICED.

(1) 113. *Caprimulgus mahrattensis**
(2) 443. *Laticilla burnesi.**
(3) 681 *bis. Sturnus minor.**
(4) 690 *Pastor roseus.*
(5) 842. *Glareola orientalis.*
(6) 842 *bis. Glareola pratincola.**
(7) 932. *Ardetta flavicollis.*
(8) 943. *Falcinellus igneus.**
(9) 1005. *Graculus carbo.*

(1.) 113.—Caprimulgus mahrattensis.

This Night Jar is the only permanent resident of the genus in these districts; *C. unwini* appears in September, as a migrant, but stays for a very short period. The eggs of *C. mahrattensis* are always two in number, of a light pale stone ground-colour, with large blotches of neutral tint; these latter fade considerably after the egg is blown. The nest which is merely a slight

* Of these nine species Mr. Doig is really only first for the five after which I have placed a star.

hollow scraped in the ground is nearly always situated on a bare piece of "*kuller*" or salt ground, sometimes under a small bunch of grass, at others under a dry bramble, or at times right out in the open without any attempt at concealment. The size of the eggs varies from 1·10 to 1·20 in length and from ·75 to ·85 in breadth, the average of 12 eggs being 1·13 in length and ·80 in width.

(2.) 443.—Laticilla burnesi.

This bird is in certain localities very numerous, but invariably confines itself to dense thickets of reed and tamarisk jungle. The discovery of my first nest was as follows :—

On the 13th March, while closely searching some thick grass along the banks of a small canal, I heard a peculiar twittering which I did not recognise. After standing perfectly still for a short while, I at length caught sight of the bird which I at once identified as *L. burnesi*. Leaving the bed of the canal in which I was walking and making a slight detour, I came suddenly over the spoil bank of the canal, on to the place where the bird had been calling. My sudden appearance caused the bird to get very excited, and it kept on twittering, approaching me at one time until quite close, and then going away again a short distance. I at once began searching for its nest, and out of the first tussock of grass I touched, close to where I was standing, flew the female who joined her mate, after which both birds kept up a continuous and angry twittering. On opening out the grass I found the nest with three fresh eggs in it, placed right in the centre of the tuft and close to the ground.

The eggs were of a pale green ground colour, covered with large irregular blotches of purplish brown, and not very unlike some of the eggs of *Passer flavicollis*. After this I found several nests, but they were all building, and were one and all deserted, though in many instances I never touched the nest, often never saw it, as on seeing the birds flying in and out of the grass with building material in their bills, I left the place and returned in ten days time, but only to find the nest deserted. In one case where a single egg had been laid, I found that the bird before deserting the nest had broken the egg. In July I again got a nest and shot the parent birds ; the eggs in this nest were quite of a different type, being of a very pale cream ground colour, with large rusty blotches, principally confined to the larger end.

The nests of this bird are composed of coarse grass, the inside being composed of the finer parts ; they are 4 to 5 inches external diameter and 2½ inches internal diameter, the cavity being about 1½ inches deep. The months in which they breed

are, as far as I at present know, March, June, and September. The eggs vary in size from ·65 to ·80 in length and from ·50 to ·55 in breadth. The average of 7 eggs is ·72 in length and ·54 in breadth.

(3.) 681 *bis.*—Sturnus minor.

Last year I mentioned to my friend, Captain Butler, that I had noticed Starlings going in and out of holes in trees along the "Narra" in the month of March, and that I thought they must be breeding there. He said that I must be mistaken, as *S. vulgaris* never bred so far south. As it happens we were both correct—he in saying *S. vulgaris* did not breed here, and I in saying that *Starlings* did. My Starling turns out to be the species originally described from Sindh as *Sturnus minor* by Mr. Hume, and as I have now sent Mr. Hume a series of skins and eggs, I trust he will give us a note on the subject of our Indian Starlings.* In February I shot one of these birds, and on dissection found that they were beginning to breed. Later on early in March, I again dissected one and found that there was no doubt on the subject, and so began to look for their nests. These I found in holes in "kundy" trees growing along the banks of the Narra, and also situated in the middle of swamps. The eggs were laid on a pad of feathers of *Platalea leucorodia* and *Tantalus leucocephalus* which were breeding on the same trees, their young being then nearly fledged. The greatest number of eggs in any one nest was five. The first date on which I took eggs was the 13th March, and the last was on the 15th May.

The eggs are oval, broad at one end and elongated at the other; the texture is rather waxy, with a fine gloss, and they are of a pale delicate sea green colour.

The birds during the breeding time confine themselves closely to their breeding ground, so much so, that except when close to their haunts, none are ever seen.

The size of the eggs varies from 1·00 to 1·10 in length, and from ·70 to ·80 in breadth. The average of 12 eggs is 1·03 in length and ·79 in breadth.

(4.) Pastor roseus.

Although I have not as yet discovered the breeding place of this bird, I think it as well to put on record what little I have noticed, in the hope that it may be of assistance in eventually finding out where it goes to breed. I began watching the birds in the middle of April and every week shot one or two and dissected them, but did not perceive any decisive signs of their breeding until the 10th May, when I shot two males, both of

* *Has been already done; vide* ante, p. 174.

which had their testes as highly developed as they could possibly be, being fully an inch long and ¼ inch wide each. Again on the 15th May out of seven that I shot in a flock, six were males, the generative organs fully developed, the seventh was a young female in immature plumage, the ovaries being quite undeveloped; the birds were feeding in the bed of a dried up swamp, along with flocks of *Sturnus minor*, and were constantly flying in flocks, backwards and forwards, in one direction. Unfortunately, important work called me to another part of the district, and when I returned in a fortnight's time, I could not see one. Where can they have gone? And they remain away such a short time! I have seen the old birds return as early as the 7th July accompanied by young birds barely fledged, and I should not be at all surprised if these birds are found to breed in some of the native states on the *east* of Sind. That they could find time to migrate to the Caspian Sea and Central Asia to breed and return again by the middle of July I cannot believe, especially after having found them so thoroughly in breeding trim, while still in the east of Sind.

Another suspicious circumstance is the absence of females in the flocks I met with. Perhaps some of my readers may have an opportunity of finding out whether *Pastor roseus* occurs in the districts lying to the east of Sind, in the month of June, as there is no doubt that the breeding time lies between the 20th May and the commencement of July.

(5). 842.—Glareola orientalis.*

(6). 842 *bis*.—Glareola pratincola.

On the 4th May I came across a lot of birds which were new to me, and so I shot some to identify; from the persistent way in which the others kept flying round and round I concluded that they must be breeding, and on searching for their nests I found some half dozen all empty, and so thought that they were beginning to lay. I accordingly left the place, and returned on the 7th, when I found after searching about that what I had taken for new nests were really old ones, the place round about being covered with the broken egg shells, however by patient searching I collected over fifty eggs. The breeding ground was about 15 acres in extent, (the actual portion where most of the nests were placed, was only about an acre) and was a salt plain with patches of coarse sedge here and there on it, the whole being surrounded by dense tamarisk and rush jungle, and was situated about half a mile from the bank of the "Narra."

* See also Mr. Oates' account of the nidification of this species, S. F., VII., 49.

The nests were slight hollows scraped in the ground, and were generally situated close to where the soil had been rooted up by wild pigs, or in the centre, or by the side of a lump of dried cow dung; this latter was the favorite situation. The greatest number of eggs in any nest was three. This seemed to be the normal number, but some contained only two, and one had a single egg and one young one just hatched. I shot several specimens which I have preserved and sent* to Mr. Hume for identification along with their eggs. As one or two of the specimens appear to me to be undoubted *orientalis*, I have entered this note against both, as I conclude that both must have been breeding in company. I also found *Cursorius coromandelicus* and *Lobivanellus indicus* breeding in the same place.

These birds have a most peculiar habit of lying stretched on the ground with their wings spread out; they not only did this while I was visible searching for their eggs, but when I had disappeared and lay hid in the dense jungle I saw them through my glasses going through the same antics. As far as I could judge it was done when any other birds approached the nest or young, and was evidently a sign of anger. Two birds which I shot while thus extended were both males. The ground colour of the eggs is a light dirty green in some, in others a drab, covered all over with dark purple blotches denser in some than in others and sometimes forming a zone at the broader end; some are in shape broad ovals, others nearly spherical; they vary in length from 1·1 to 1·35, and from ·80 to 1·05 in width, the average of 52 eggs being 1·26 in length and ·95 in width.

(7.) 932.—Ardetta flavicollis.

In January last Captain Butler in Upper Sind, and I in these districts, both about the same time, thought we saw this bird. On the 4th May, however, I shot a pair and saw some dozen more; since then I have found them in three different places very numerous. Once the sun is well up, they are seldom seen unless actually beaten out of the dense tamarisk and reed jungle in which they lie hid. My plan was to go out some time before day-break, and paddle up in my canoe into the middle of the swamp and hide in some bunch of rushes and wait till day-light. As day began to dawn birds of various kinds began to appear returning from the scenes of their night's dissipation; some came along in flocks making a great noise, apparently quite satisfied with their night's work; others came flitting silently along the tops of the reeds, as if they were very much ashamed of themselves for being out so late. Among the latter were *A. sinensis*, *A. minuta*, and *A. flavicollis*.

* Unfortunately they have not yet come to hand.—A. O. H.

By remaining hid I could mark down the different thickets into which the birds disappeared, and when I thought the birds had all returned I began searching one thicket after another. In this way, I got numerous nests, in each case taking the eggs myself and flushing the birds off the nest. The nests are formed of tamarisk twigs, with sometimes a few aquatic weeds on which the eggs are laid; they are generally placed about 5 feet over the water either in a dense tamarisk bush or thick clump of reeds, and are about 9 inches in diameter, and 3 inches in thickness, and have a very slight depression in which the eggs, always four in number, are laid. The eggs are for the most part very broad ovals, sharp at both ends and very nearly white in colour, but with a faint suspicion of a delicate pale sea green colour. The eggs vary in length from 1·5 to 1·85, and in width from 1·15 to 1·30, the average length of 53 eggs being 1·66, and width 1·26.

(8.) 943.—Falcinellus igneus.

Captain Legge, R.A., has recorded his finding a colony of these birds breeding in Ceylon, but was too late to obtain any eggs; having now found them breeding in the "Narra," and taken their eggs, I proceed to give a brief account of their breeding ground.

In May 1878, I observed these birds in pairs, and sent men after them to try and find out their breeding grounds, but in vain, and so being unable to go myself, in consequence of work, I was obliged to give up the search. This year, however, in June I was able to search myself, and found them breeding in great numbers on trees along the banks of the large lakes inside the sand hills, along the banks of the "Narra." The nests were placed on the tops of kundy trees, and were constructed of sticks, about the size of those of *Plotus melanogaster*: on the same trees, I found *Inocotis papillosus* and *Ibis melanocephala* breeding, while close by were numbers of nests of Herons, Egrets and Cormorants. The eggs are of a beautiful green colour, roughly pitted over, with slight indentations giving the shell a rough appearance; they are in shape ovals pointed at both ends. The normal number of eggs is three, and they vary from 1·8 to 2·15 in length, and from 1·3 to 1·55 in width, the average of 35 eggs being 2·01 in length and 1·40 in width.

(9) 1005.—Graculus carbo.

I have already given an account of the nidification of this bird, see S. F., Vol. VII., page 468, and so merely give here the measurements of the eggs. They vary from 2·30 to 2·65 in length and from 1·50 to 1·65 in width, the average of 12 eggs being 2·47 in length and 1·57 in width.

Section III.

A few species, in regard to whose nidification, although already described by others, I should like to add a few remarks.

SPECIES NOTICED.

(*a.*) 532.—*Prinia flaviventris.*

(*b.*) 550.—*Burnesia gracilis.*

(*c.*) 934.—*Ardetta sinensis.*

(*d.*) 934.—*Ardetta minuta.*

(*a.*) 532.—Prinia flaviventris.

This bird is tolerably common all along the Narra, but as it keeps in very thick jungle, it is not often seen unless looked for. I took my first nest on the 12th, and my second on the 17th of May. This evidently is the second brood, as I noticed on the same day a lot of young birds which must have been fully six weeks old. One nest was lined with horse hair and fine grasses. Four was the normal number of eggs, which were precisely as described in "NESTS AND EGGS."

(*b.*) 550.—Burnesia gracilis.

This little Warbler is very common. I took the first nest in March and again in May; they build in stunted tamarisk bushes; the nest is circular dome-shaped with the entrance on one side near the top; the inside is very beautifully and softly lined with the silky down of grass seeds. Four is the usual number of eggs in one nest.

(*c.*) 934.—Ardetta sinensis.

This little Bittern is very common here, during the hot weather; I have found their nests in May and again in August. Five is the usual number of eggs in one nest. The nest is sometimes situated in the centre of a tussock of grass, or in a bunch of reeds growing in the centre of a tamarisk bush in the water, and two nests I found in the middle of some rushes; the tops of the rushes had been bent down and tied together, forming a little platform, about 3 feet above the water, and on this the eggs were laid. Several nests which I found containing one egg I left, returning some four days after expecting to find five eggs, but in each case I found the nest deserted and the egg gone. One nest, which was in the middle of a lot of rushes

and was found by my man, contained two eggs. I went with him the next day, to see the nest, hoping it might be one of *A. minuta*. To my disgust on getting to the nest I found the eggs smashed and the parent bird (female) lying dead on the nest, and half eaten. What could have killed the bird I cannot say. The eggs of this Bittern are very nearly spherical in shape, and are, when first blown, of a delicate pale sea-green, but after a time they get almost white. They vary from 1·15 to 1·25 in length, and from ·90 to ·95 in width, the average of 21 eggs being 1·19 in length and ·95 in breadth.

(*d.*) 935.—Ardetta minuta.

Last year, though Captain Butler and myself several times searched one of the swamps here, we never came across either this Bittern or *A. flavicollis*. This year, in the same swamp, there are numbers of both. I took my first nest of this bird on the 26th May; it contained four fresh eggs. They are elongated ovals, sharp at both ends, and pure white. The eggs vary from 1·3 to 1·4 in length and from ·95 to 1·05 in width, the average of seven eggs being 1·34 in length and 1·00 in breadth.

Note on Horornis fulviventer, Hodgson.

By W. E. Brooks.

In Vol. IV. of Stray Feathers, page 497, the Editor raises the question as to the identity of his *Horeites brunnescens* with *H. fulviventer* of Hodgson.

I have an accurate copy of Hodgson's drawing, No. 878, of his *H. fulviventer*, and in this drawing is a diagram of its wing, to show the proportion of the primaries. This wing is decidedly that of a *Phylloscopus* of the *fuscatus* class, and shows much too great a space between first and second primaries for any *Horornis*' or *Horeites*' wing. The wings of the latter genera, which are really only one genus and should be all *Horornis*, are much more rounded and *Prinia*-like.

Hodgson's drawing has evidently* been made from an undersized specimen. The legs are coloured *very dark*, and those of *brunnescens* are *not dark*. The upper coloration, so far as visible, owing to the raised wing of the "side elevation" view of the bird, is *very dark*, like *fuscatus*, the tail included. The

* Why evidently? How is it possible to infer this? I dare say he is right, but I wish my friend would explain the ratiociniative process by which he arrives at this certainty.—Ed.

lower surface is pale, even paler than that of a young *fuscatus*, but deficient colouring of the lower surface was one of Hodgson's artist's faults. The tail is also too much rounded for either *Horornis* or *Phylloscopus fuscatus*; but this was another of Hodgson's draughtsmen's faults in drawing. There are dimensions of a specimen on the back of the drawing (at all events I have them on the back of my copy, and it is possible they may be on the face of the original). These dimensions are as follows:—Tip of bill to tip of tail, $4\frac{7}{8}$; bill to gape, $\frac{9}{10}$; tail, $1\frac{7}{8}$; closed wing, $2\frac{1}{8}$; "expanse," omitted; tarsi to sole, $\frac{3}{4}$; central toe and nail, $\frac{11}{16}$; hind toe and nail, $\frac{1}{2}$; weight omitted.

As a whole *H. brunnescens*, as well as I remember it, appeared to me to be a smaller bird than the above dimensions show, which are those of a bird *larger* than *Horornis fortipes*. Of the latter Hodgson gives $4\frac{5}{8}$ as total length; bill to gape, $\frac{1}{2}$; tail, less, 2; a closed wing, $2\frac{1}{10}$; tarsi to sole, *plus* $\frac{5}{16}$; central toe and nail, less $\frac{1}{16}$; hind toe and nail, $\frac{9}{10}$; weight omitted. Thus, in total length and wing, *H. fulviventer exceeds H. fortipes* according to Hodgson's drawings and MS. notes. *H. fortipes* is decidedly a more robust species than *H. brunnescens*, and I therefore conclude that Hodgson does not describe nor depict *H. brunnescens* of Hume in his *H. fulviventer*. The rather short wing given by Hodgson is somewhat of a difficulty; but his *H. fulviventer* was procured *in September*, and a young bird would show a small wing. He did not apparently procure many of these birds, for he only gives the dimensions of one on the drawing, and speaks of three having been obtained. On the drawing of *H. fortipes*, he gives dimensions of *one* only, and notes "specimen lost." Under these circumstances I do not think so much of the want of full size for *P. fuscatus*, for I know how easy it is to shoot three or four of a brood and fail to get either of the old birds.

No matter what was found in the British museum—a discrepancy between the specimen and the written evidence given by Hodgson would not lead me to set aside the latter; for original labels have been improved upon in the British Museum, thanks to Curators who were anything but Curators. The Museum is however now in good hands, and the describer's label will be as carefully guarded as the specimen itself.

Horornis brunnescens, Hume, is a really good species,* and if it be ever overthrown, I shall be very much surprised.

* Although I threw out the suggestion above referred to, it having crossed my mind, and it behoving every man to be more suspicious of his own than other people's species, I have failed to find any confirmation of my doubts, and have *no* doubt, *now*, that *H. brunnescens* is a perfectly good and distinct species.—Ed.

On the Nidification of Dromas ardeola.

Despite all that has been urged as to the various affinities of this species, I am quite sure that every ornithologist who has ever watched them in life will agree with me, that so far as habits and manners and customs go, the Crab Plover is hardly to be separated from *Œdicnemus* and *Æsacus*.

Such being the case, it was natural to conclude that the Crab Plover would lay two eggs with a brownish or yellowish stone-colored ground, blotched, streaked and spotted with blackish-brown, and would lay them in some small depression on an open sand bank. Accordingly, when Layard sent an egg extremely like one of *Œdicnemus scolopax* as belonging to this species, I saw no reason to doubt the genuineness of the egg, save that it seemed to me somewhat small for the bird.

Nothing, however, is more certain now than that the Crab Plover lays *one* and *not* two eggs; that this egg is quite abnormally large for the bird, and pure white in color; and, lastly, that it lays this egg not in a small depression in the open, but at the extreme end of a burrow running for some four feet into the sand.

These remarkable facts, which naturally again raise the question as to what the real affinities of this species can be, were first set forth by von Heuglin, and have now been fully confirmed by Captain E. A. Butler.

Baron Heuglin says (Orn. Nordost-Afrika, p. 1045) :—

"During my second journey along the coasts of the Red Sea, I had already enjoyed many opportunities of acquiring information in regard to the nidification of the Crab Plover (*lit.* Heron-courser), and four years later I was able to complete this, though I never had the good fortune to find an entire egg.

"The nest places are situated on lonely flat coral islets, at varying distances from the shore, but always where thick layers of sand and fine shell debris have accumulated.

"Great numbers of Crabs of various species live in these same places in deep holes pierced obliquely into the ground. Precisely similar are the burrows which the Crab Plovers select for laying in. Whether they excavate these themselves, or take possession of crab holes for this purpose, I cannot positively say; but looking to their very small diameter, I think we may assume that they were originally crab burrows. A good many holes are usually together; they open commonly to the shore, and have a diameter of from 5½ to 6½ inches, and an extension of from 2 feet 2 inches to 4 feet 4 inches.

"No precise examination of the holes can be effected, as the sand falls in directly you begin to dig. The terminal third of the burrow seems generally somewhat bent towards the right or left, and the cauldron-shaped nest-room is very small. In most we found, (this was in July,) one, half-grown, young one. In front of the passage lay the fragments of the comparatively large, somewhat shortly globular, dirty white eggs, the shells of which are yellowish when looked through.

"The young seem not to leave the nest for a long time, although they are well able to run. They were obviously blinded by the day-light, "cheeped" like young chickens, and would run as fast as possible to any broken rocks or fragments of stone, and take refuge in the shade or any dark place."

Now Captain Butler writes :—

"I think, I am at last in a position to prove that the large white eggs which I sent you last year belong to the Crab Plover.

"In order that you may be satisfied as to their identity, I will relate fully the circumstances under which they were taken.

"About the 8th June 1878, my friend Mr. Huskisson, Superintendent, Indo-European Telegraph Department, who was then at Bushire, kindly sent some natives to see if there were any sea birds breeding on one of the islands off Tungistan about 40 miles east of Bushire, Persian Gulf, and they returned with a batch of large white eggs and two skins (a nestling in down and an adult) of *Dromas ardeola*, saying that they had found numbers of these birds breeding on the island, and that the eggs were laid in holes in the sand hills. The nests they reported as being a good deal scattered, and the eggs as a rule much incubated, many being on the point of hatching.

"On receiving these eggs, I must say, I was most incredulous, and thought, as you suggested, that in all probability they belonged to the Gulf Shearwater (*Puffinus persicus*, Hume). However, the skins of the adult and nestling Crab Plover showed that that species bred there, so I resolved to make arrangements to have the island explored again about May the following year. In the meantime I received another letter from Mr. Huskisson saying that he had re-visited the island on the 13th July *himself*, and dug out many of the nests which were in holes in the sand hills, and that most of them contained a single young bird, almost ready to leave the nest.

"The following year, 1879, according to arrangement, my friend, Mr. Nash, of the Telegraph Department, visited an island named 'Montafie,' about 20 miles east of Bushire at the end of May, and made the following report: 'I visited the island off

Tungistan, as requested, at the end of May (I was unable to go earlier) with the following result:—I secured about 3 dozen Crab Plovers' eggs, but could only blow a few of them as they were so hard set. The eggs are large and white, about the size of a duck's egg. The bird burrows into the sand hills about four feet and in the shape of a bow.

"'The passage runs about a foot below the surface of the ground, and the entrance is usually near or under tussocks of grass or low shrubs—the egg, which is solitary, is laid on the bare soil at the end of the hole without any sign of a nest.

"'There can be no possible doubt about the identity of the bird, as I saw several of them fly out of the nest holes myself, and they are those peculiar black and white birds with a black swallow tail mark on the back, a skin of which I sent you from Ormarra last year to identify.* I have compared the eggs now taken with some of the eggs taken last year, and of which Mr. Huskisson forwarded you a batch, and they correspond exactly, so that you were mistaken in supposing they were Shearwater's eggs. I saw no Shearwaters anywhere near the island, and do not think they breed about here.

"'I went on a donkey along the shore until I got opposite to the island, and then at low tide waded across to it a distance of about a mile.'

"Later on I received another letter from the same gentleman, in which he says:—

"'On the 10th June I visited another island about 40 miles down the coast, named 'Allah.' This is probably the one from which Mr. Huskisson procured you the eggs last year, and in addition to two species of Terns that were then breeding (*Sterna albigena* and *Sterna anætheta*), I saw a lot of Crab Plovers and found numbers of their broken egg-shells.'

"Mr. Nash further observes that the nests were usually 'all in a heap,' by which I conclude he means that several nests are placed close together.

"Now, however incredible it may appear to ornithologists that the Crab Plover (*Dromas ardeola*, Payk.) burrows into the ground, and lays a single white egg, with the above facts before us resulting from observations, made at my request, by two utterly disinterested persons two years running, I cannot see how we can arrive at any other conclusion."

Taken in conjunction with von Heuglin's account, there can be no earthly doubt that these eggs *are* those of the Crab Plovers.

It would seem that they begin to lay at the end of April or very early in May, and that by the middle of July the

* The skin referred to belonged to *Dromas ardeola*.—E. B.

young have not yet permanently left the nest holes, but are still always found in these during the *day* time at any rate. Whether they come out to feed during the night, has yet to be discovered. Some old birds once passed within a few yards of me about midnight, and possibly they are partially nocturnal in their habits, and if so as there are no jackals or other animals on the coral islets where this species breeds, and as there are no birds of prey about in these places at night, it is far from improbable that, though still haunting their burrows during the *day time* until quite full grown and able to fly as well as their parents, they *may* nevertheless come out to feed during the night as soon as they are able to run well, and this they seem to be within ten days of being hatched.

The eggs of this species are extremely like those of Shearwaters and are large for the size of the bird. They are rather elongated, slightly pyriform ovals; the shell is compact, but very distinctly granulated; in colour they are pure white, without any spot or markings of any kind. Held up against the light the shell is of a pale greenish yellow. Some of the eggs exhibit a very slight gloss.

In size the eggs vary from 2·42 to 2·66 in length, and from 1·73 to 1·85, but the average of twenty is 2·54 by 1·77.

These dimensions are large for the size of the bird. If we compare the following species:—

Name of species.	Average weight of the Bird.	Average dimensions of Eggs. Length.	Breadth.
Æsacus recurvirostris.	1 lb. 12 ozs.	2·15	1·6
" *magnirostris*...	2 lbs. 4 ozs.	2·55	1·75
Œdicnemus scolopax small Indian race	0 lb. 12 ozs.	1·9	1·39
Dromas ardeola ...	1 lb. 0 ozs.	2·54	1·77
Hæmatopus ostralegus	1 lb. 6 ozs.	2·2	1·6

we see that, though almost the smallest bird of the lot, its eggs are almost the biggest, quite as large as those of *Æ. magnirostris*, which weighs 2¼ times what it does and *very* much larger than those of *Æ. recurvirostris*, which weighs nearly double what it does.

And moreover the eggs do not bear the smallest resemblance to, and have nothing, absolutely, akin to those of any one of, the above mentioned species which have usually been considered its nearest allies.

If I was to name any genus, I should say that the eggs and breeding habits of the Crab Plovers were closer to those of the Shearwaters than to those of any other birds with which I am acquainted.

A. O. H.

Further observations on Phylloscopus viridanus & Phylloscopus plumbeitarsus, also on Reguloides humii.

By W. Edwin Brooks.

I have procured a good number of *Phylloscopi* this spring, and some as late as the 30th of April. They are principally *viridanus* and *nitidus*.

The wing bar of *viridanus* is often of a dull buff, as in the young bird that I saw from Tjabuk in the Ural Mountains. I rather think that the new feathers of the greater wing-coverts are always tipped with this colour, which very rapidly fades to dull white. Certainly the bulk of my late spring birds, that have passed through the moult, or are still in it, have dull buff tips to the wing-coverts. Not one example of *viridanus* shows any sign of an upper, or second wing bar, as is always the case in *plumbeitarsus;* and as the late spring plumage, after the moult, may be taken as summer plumage of *viridanus*, the autumn plumage of which we know quite well, it follows that we may very safely conclude that it is quite distinct from *plumbeitarsus*.

From the bill alone of *plumbeitarsus* I should never have dreamt of uniting the two birds.

I think it is pretty sure, that an observer of *plumbeitarsus* in life will be able to throw more light on the subject as regards different voice and habits as compared with those of the other bird.

The spring tone plumage of *viridanus* is rather different from the autumnal one; darker and more inclined to brown. The same may be said of *Reguloides humii*, which assumes a browner spring dress, particularly as regards supercilium, head, and sides of neck, also the cheeks. In spring plumage, those of the Muddapur country come much closer to the North-West examples, in fact are then almost, if not quite, inseparable.

There is a printer's mistake in my last paper, at which I am much concerned. At page 510 of Vol. VII., line 40, please omit the article "a" before "desiderata."

Further Additions to the Sindh Avifauna.

By Capt. E. A. Butler, H. M's. 83rd Regt.

Mr. Doig and I have now eight more species to add to the Sindh list, and I have a few further remarks to record in regard to the birds of this province.

Additional Species.

[118.—Merops philippinus, *Lin.*

Observed by Mr. Doig in the Eastern Narra districts, and believed by him to breed there.]

532.—Prinia flaviventris, *Deless.*

I found this tiny and beautiful little Grass Warbler in the neighbourhood of Sukkur, in low tamarisk jungle interspersed with bright Pampus grass,* and managed to secure two specimens just before I left, one of which I sent to Mr. Hume to examine.

I only observed it in one strip of jungle, where there were several pairs, but have no doubt it occurs all over that neighbourhood. I had never seen the bird before, and had no books with me to refer to; but its conspicuous canary yellow flanks and abdomen enabled me at a glance to identify it. Measurements as follows:—

Sex.	Length.	Weight.	Tail.	Bill at Front.	Bill from Gape.	Expanse.	Locality.
Male	4·75	1·75	2·25	·37	·50	5·50	Sukkur
Female	4·75	1·68	2	·37	·56	5·50	20th Feby. '79

Irides light brown; legs and feet very pale, brownish or yellowish flesh; bill blackish plumbeous.

Mr. Doig has also, I understand, met with this species in the Eastern Narra districts. So that it is clearly entitled to a place in our list.

[600.—Corydalla rufula, *Vieill.*

Observed and found breeding by Mr. Doig in the Eastern Narra districts.]

784.—Palumbus casiotis,† *Bp.*

I saw a bird in a swamp near Sukkur, on the 19th January, which I can, without hesitation, assert to have been a true Wood

* Not *really* Pampa Grass (*Gynerium argenteum*) which is S. American, but one of the *Andropogons*.—Ed.

† Capt. Butler entered this as *P. torquatus*, the European form, but I have taken the liberty to alter his text, because, though *torquatus* does occur in Asia Minor and Palestine, and indeed has been sent from as far east as Baghdad and the Caspian Provinces of Persia; from Afghanistan and Southern Persia as far west as Shiraz, at any rate, it is *casiotis* only that I have seen, and the Sindh bird could, therefore, scarcely by any possibility be *torquatus*.—Ed.

Pigeon. It passed me twice in the open within 60 yards with the sun shining full on it, and subsequently I examined it carefully with my glasses whilst it sat on the top of a stunted tamarisk tree. There is no other genus that it could possibly have belonged to. It was of the same size as *P. torquatus*, had the same white wing bands, and after settling raised its tail up and down in the same way exactly as the English bird, of which I have shot hundreds, and which I need hardly say I could scarcely confound with any species of any other genus. I may add that there is a specimen of *Palumbus torquatus** in the Frere Hall Museum, Karachi, which I examined last year. It was labelled *Columba livia*, but I pointed the mistake out to Mr. Murray, the Curator, who informed me that it was procured in Sindh (!). I expressed my doubts on the subject at the time, as the bird was not then recorded from that province, and was mounted on a board *in exactly the same way as a pair of Grouse and some other English birds* in the Museum that had evidently been sent from England. However, now that I have seen a bird of the same, or some very closely allied species myself in Sindh in a wild state, it is *just* possible that Mr. Murray *may* have been correct, and that the bird referred to was really (though I still doubt the fact) obtained in Sindh.

[842.—Glareola orientalis, *Leach.*

Observed and found breeding, I understand, by Mr. Doig in company with *G. pratincola*, in the Eastern Narra districts.]

920.—Dissura episcopa, *Bodd.*

A White-necked Stork was shot near Sukkur by a soldier, 83rd Regiment, in January 1879, which I examined and identified. I have heard of no other instance of its occurrence in Sindh as yet, and it must therefore be a *rara avis* in these parts.

950.—Sarkidiornis melanonotus, *Penn.*

A friend of mine wrote to me a few days ago saying that he had shot a Goose on the 18th January this year (1879), corresponding exactly with Jerdon's description of *S. melanonotus*, at a place called Badin, about 63 miles south-east of Hyderabad (just inside the eastern limits of Sindh in fact), and that none of his party, all of whom were Sindh men who know and shoot in those districts regularly, had ever seen the bird before. I wrote to him for further particulars, and have no doubt from his reply that the bird was a "*Nuktah*." It was solitary at the time, and probably only occurs as a straggler even in these

* Is Capt. Butler sure that this also is not *casiotis*? The two differ mainly in the colour of the neck patches, white in *torquatus*, buffy in *casiotis*. If really *torquatus*, I believe we may safely say it did not come from Sindh.—Ed.

eastern parts of the province, as I have heard of no other instance of its occurrence in Sindh.

999 *bis.*—Sula cyanops, *Sund.*

Whilst *en route* to Vingorla this year in March from Karachi, two or three White Boobies of the present species followed our ship along the coast of Sindh to the Gulf of Cutch, after which they were seen no more.

ADDITIONAL REMARKS.

996.—Phaeton indicus, *Hume.*

This species has been already recorded in Mr. Hume's first list, but it may be well to record that I noticed three or four tropic birds of this species this year in March along the coast of Sindh. They followed our ship (*The Czarewitch*) as far as the Gulf of Cutch, after which they disappeared.

There is a specimen of 904.—*Gallicrex cinereus*, Gm., in the Karachi collection, said (by Murray) to come from the Muncher. If correct, this confirms Bishop's discovery in the Narra. ("S. F.," V., 247.)

I noticed another bird in the Karachi Museum, *viz.*, 857.—*Hoplopterus ventralis*, Cuv., also *said* by Murray to have come from the Muncher Lake. It is *possible* that this may be the case, but I do not think we should enter it as yet in the list.

NOTE BY THE EDITOR.

I can certainly not admit this latter species into our list without further confirmation. *H. ventralis* is essentially a bird of the banks of large rivers—not a lake-shore bird at all. Of course, Mr. Murray may be right, but while admitting his merits as a hard-working collector, my feeling is, that he is very careless about localities, and accepts whatever is told him without any sufficient attempt to verify the statements of his informants.

If we now review our list we find that it stands thus :—

My first list, S. F., I., 148, contained (including *Sturnus minor*, now proved to be a permanent resident of Sindh, and *Sylvia minuscula* (olim *minula*) and *althæa* now proved to be good species, *vide* S. F., VII., 58, *et seq.*) 271* species and 4 doubtful ones.

My resumé of additions (S. F., V., 328) added 52 species and 2 doubtful ones, and mentioned a third doubtful one.

Mr. Murray's list, S. F., VII., 113, added 19 species and 5 doubtful ones. Capt. Butler's list (S. F., VII., 173) added 13

* One of these entered as 217.—*C. rufipennis*, (S. F., I., 173) should stand as 217 *quint.*—*C. maximus.*—A. O. H.

species. Mr. Doig's list (S. F., VII., 503) included 4 species, to which I added 4 others; 8 in all. Now this present list of Capt. Butler's adds 8 species, and 1 doubtful one.

Our total therefore up to date is 378 ascertained species and 13 doubtful ones.

These 13 are as follow. No doubt as time goes on, the total will not fall short of 400, but we now have to rely mainly on my friend Mr. Doig, as we have unfortunately for Sindh lost Capt. Butler.

Doubtful species.

65.—Syrnium ocellatum, *Less.*, S. F., I., 163; VII., 179.
147.—Palæornis eupatrius, *Lin.*, S. F., I., 170.
168 *bis.*—Dryocopus martius, *Lin.*, S. F., I., 171.
669 *bis.*—Garrulus melanocephalus, *Géné.*, S. F., I., 206.
845 *bis.*—Charadrius pluvialis, *Lin.*, S. F., V., 247; VII., 174, 186.
985 *bis.*—Sterna dougalli, *Mont.*, S. F., V., 327; VII., 174.
469.—Irena puella, *Lath.*, S. F., V., 327, 330; VII., 114.
497 *ter.*—Ruticilla mesoleuca, *Ehrb.*, S. F., VII., 114.
259 *bis.*—Lanius auriculatus, *P. L. S. Müll*, S. F., VII., 117.
490 *ter.*—Saxicola leucomela, *Pall.*, S. F., VII., 118.
720 *quat.*—Emberiza miliaria, *Lin.*, S. F., VII., 121.
751 *ter.*—Linaria cannabina, *Lin.*, S. F., VII., 122.
857.—Hoplopterus ventralis, *Cuv.*, S. F., VIII, 388.

} S. F. VII, 527.

A. O. H.

Description of another new Reguloides.

By W. Edwin Brooks.

Hume's Dark-headed Shillong Reguloides, Reguloides Mandellii, *N. Sp.*

Description.—Top of head dark olive brown, darker than that of *erochroa*, and browner; there is a greenish coronal streak, very well marked as in *erochroa*. The brown of the head is darkest, and almost a blackish brown immediately above the supercilium, and ends abruptly at the nape of the neck, where it expands a little, much after the mode of the dark markings on the head of *Reguloides occipitalis*. Back rich olive green, brighter and paler on the rump; wings and tail dark brown; primaries and secondaries edged with bright olive green; tertials broadly edged with pale greenish grey, this edging forming a regular border to the feather, and not an external drop or long oval spot on the outer edge near tip, as in *erochroa* and

maculipennis. In mode of edging to tertials the new bird strongly resembles *proregulus*, *superciliosus*, *humii*, and *subviridis*; in fact the four wings are very much alike, except that those of *mandellii* and *superciliosus* are brighter coloured; tail feathers edged with light olive green; supercilium a warm dusky buff, with sometimes a slight greenish tinge, and differing from the dusky greenish one of *erochroa*; cheeks dusky pale buff, mottled with brown; a dark brown streak through the eye; lower parts dusky albescent, much tinged with yellow; ridge of wing sulphur yellow, and axillaries a somewhat paler yellow.

Bill dark brown, with basal half of lower mandible dull orange yellow; legs and feet pale yellow brown, the feet much tinged with yellow; the second primary is generally about equal to the ninth.

I obtained three examples in the flesh, of which I give the measurements below; also of three examples in Mandelli's collection :—

No.	Sex.	Long tot.	Wing.	Tail.	Tarsus.	Bill at front.	Bill from centre of nostril.
1	♂	4·25	2·25	1·72	·75	·33	·25
2	♂	4·10	2·07	1·65	·75	·33	·25
3	♀	3·9	2·06	1·6	·73	·33	·25
4	about	4·25	2·23	1·72	·72	·32	·25
5	„	3·9	2·10	1·6	·7	·32	·25
6	„	3·9	2·10	1·66	·72	·32	·25

The fine rich coloration and its blackish brown head, together with the yellow on lower mandible of bill, and the pale yellowish legs and feet, at once separate this bird from *R. humii*. Again, it appears to be a scarce local eastern hill species, and non-migratory; while the other is a migrant, and well-known almost all over India. It has also a very distinct note from *R. humii*, which must have left Darjeeling before I got there in the end of October, for I never heard its well-known note. The note of the new bird is more of a chirp. I heard this note on one occasion a number of times before I shot the bird.

No. 6 is an April example from Sikhim, and the wing bars are much worn, and faded to a dull white; the light edges to tertials are also almost worn away. At a first glance the tone of the bird much resembles *erochroa*, but there are no white feathers in the tail, and the wing spots are not orange. *Reg. superciliosus* is a bird of much greener tone, and it has a silvery white belly, not unlike that of *sibilatrix*; the bill too of *superciliosus* is shorter and blunter.

If the new bird were in poor plumage, and an inferior skin, it would not be easy to discriminate it, but a newly-killed bird is very easy to make out. The principal characteristic is the very dark head, but in a faded specimen this would not be so apparent.

When describing *Reguloides humii* in STRAY FEATHERS, Vol. VII., 1878, pp. 128 to 136 and 236 to 238, also 475 to 478, I referred to the dark-headed Shillong bird; and I supposed it was only a variety of *R. humii*. Since I have seen the dark eastern bird in life, the mystery is cleared up. My friend Mr. Hume was strongly of opinion that the Shillong bird was new, but I then persisted that it was not. He is, therefore, the discoverer of the new species, and he has been the primary cause of both birds being discriminated. I now understand why the dark richly coloured bird has not occurred in the plains. The rather dark ones I have referred to of *R. humii* fall very far short of the new bird, and I never got one in the plains with yellow bill and pale yellowish legs and feet. The legs and feet of *R. humii* are a dusky greyish brown and stouter made than those of *R. mandellii*.

Mr. Mandelli has had the bird long in his collection under the name of *superciliosus*. Some of them I sent to friends in England under that name. Latterly he had an idea that it might be female *erochroa*, but when at Darjeeling I shot a few *erochroa*, and *the female does not differ from the male*.

The four closely affined *Reguloides—superciliosus*, *humii*, *subviridis*, and *mandellii*—form an interesting little group, the more so, as they formerly all stood under one name. Old and inferior skins would puzzle the best ornithologist to separate, but with the fresh bird, or with the eyes shut, and only hearing the very different notes, separation is easy and sure. There may be attempts to suppress one or more of the recently described species, but they will stand while the world lasts with those who know them in life.

I heard the note of *erochroa* at Darjeeling a sort of chirp and not *Phylloscopine*. I also heard *R. maculipennis*, the most abundant of Darjeeling *Reguloides*. It has a very feeble little chirp, so feeble it might be thought the note of an insect, a single "tsip" often repeated. It rather put me in mind of a Goldcrest. I once heard the "*Weest*" of *R. superciliosus*, as Seebohm aptly expresses its note: but I only heard this one bird at Darjeeling. In the plains now, I frequently hear it; and the "*Weest*" is a good guide towards obtaining specimens.

I have now heard the notes of a good number of *Phylloscopi* and *Reguloides*, and they are all thoroughly different. The Wagtails are the birds where little or no assistance can be obtained from the note.

I subjoin a diagnostical table, very unscientific and "popular" no doubt, but which will still, I hope, help others to discriminate several closely-allied members of this genus.

	Bill.	*Coronal streak.*	*Rump.*	*Supercilium.*
R. proregulus ...	Very dark brown.	Dull yellow, and well defined, not blended into colour of head.	Clear pale yellow, abruptly separated from olive of back.	Broad and well defined, dull yellowish.
R. subviridis ...	Brown, and light yellow brown on lower mandible, except tip, which is brown.	Exactly like that of *proregulus*.	Of the same colour as back, but paler somewhat and blended into colour of back.	Pale yellow and brighter yellow anteriorly.
R. humii ...	Very dark brown, pale earth brown at base of lower mandible.	Faint greyish brown and blended into brown of head. In skins the coronal streak is often lost.	A shade or two paler than back and blended.	When newly moulted, a pale brownish buff. In old birds or skins it fades to dull brownish white.
R. mandellii ...	Dark brown, with base of lower mandible dull orange yellow.	Greenish grey, and blended with blackish olive of head. This very dark blackish olive of head is characteristic. In the dark sides to top of head, abruptly ended at nape, it resembles the broad-billed *Reguloides*, like *trochiloides*.	Light olive, a shade or two lighter than back and blended into color of back.	Brownish buff.
R. erochroa ...	Dark brown, with base of lower mandible brownish orange.	Greenish grey, and blended into dark greenish olive of head.	Light olive yellow, but of lesser extent than in *proregulus*, and blended into olive of back.	Dusky greenish yellow.
R. maculipennis ...	Bill wholly black and short; sometimes showing a little dull orange at base of lower mandible.	Head very dark greyish brown, coronal streak well defined, brownish white, not blended.	Clear pale yellow and abruptly defined from olive of back.	Clear brownish white.
R. superciliosus ...	Brown; lower mandible dull yellow at base.	Greenish grey, and blended into colour of head.	Colour of back, but a shade or two lighter.	Pale greenish yellow, *but in old plumage the yellow fades to dull white.*

Wing bars.	*Edgings to Tertials.*	*Legs and feet.*	*Note.*	*Remarks.*
Both distinct and dull yellow.	Dull yellowish white, a continuous border to outer edge of feather.	Slender and pale brown.	Very feeble and *Regulus*-like	A hill species, moving only from the Alpine districts to the Lower Himalayas in winter.
As in *proregulus*, but upper one not so distinct.	As in *proregulus*.	Pale brown and slender.	A distinct "tisyip" or true *Phylloscopine* call of two notes, the latter one rising considerably. The call is feeble, shrill and tinkling.	A migrant, coming to the plains of North-Western India in the cold weather. It arrives a month later than *R. humii*. It has been procured at Gilgit in Cashmere in April.
Lower one distinct and dull yellowish, upper one indistinct and of the green colour of upper plumage. It, however, sometimes fades to whitish and then two distinct bars are shown.	As in the two above, and perhaps better defined as a rule.	Dark brown or dark greyish brown, and strongly made.	A pure *Phylloscopine* "tisyip" or double slurred note, clear, sharp and ringing; very loud for the bird.	Migratory, breeding in the Alpine Himalayas in summer, and spreading all over the plains of India in the winter.
Dull yellowish, as in *humii*, upper one greenish, and indistinct.	Precisely as in *humii*, *proregulus* and *subviridis*.	Pale yellow brown, soles of feet yellower.	A chirp, utterly unlike that of *humii*. In other words, it is not *Phylloscopine*.	Appears to be a permanent hill species. It has only as yet been obtained at Darjeeling and Shillong. *There are no white feathers in the tail.* The lower surface is much more tinged with yellow than in *humii*, and altogether it is a bird of much richer and brighter coloration.
Lower one dull orange yellow, upper one greenish and indistinct.	The pale greenish white forms a drop or spot of oval shape at outer end of feather.	Pale brown and sometimes tinged strongly with plumbeous as in *viridanus*.	A chirp, and not *Phylloscopine*.	A hill species, retiring from the Alpine districts to the lower hills in winter. *It has white lateral feathers in the tail.*
Clear & pale yellow, upper one is a little duller and inclined to greenish.	An oval drop at outer end of feather as in *erochroa*.	Generally pale yellow brown, feet paler, with yellow soles.	A feeble *Regulus*-like chirp often repeated.	A permanent hill species, breeding in the Alpine districts and retiring to the lower hills in winter. It has white lateral feathers in the tail. *The breast is pale grey.*
Pale yellowish, as a rule both upper and lower one distinct, but in new feather the upper is of the greenish colour of back, but it soon fades to whitish.	Edging to tertials, a continuous outer border as in *humii*, *proregulus* and *subviridis* and *mandelliii*. There are also little bright white tips to secondaries and some of the primaries.	Very pale yellowish brown and soles of feet often quite yellow.	A prolonged shrill one, not unlike that of a Yellow Wagtail, but less clear. Mr. Seebohm aptly calls it "*weest*."	Strictly a migrant, breeding in Siberia and coming to the plains of India and Burmah for the winter. It is also found in China in winter. It probably extends to Southern India.

Novelties.

Larus innominatus, *Sp. Nov.*

Like Larus ichthyaëtus, *Pallas, but very much smaller, more black on the primaries, and no white ring round the eye.*

I have, for the last three years, had by me an adult female in full summer plumage of a bird which I cannot doubt is the *Larus ichthyaëtus minor* of Schlegel.

Knowing that Mr. Howard Saunders was engaged on a Monograph of the Gulls, I did not think it necessary to describe the species, but as his monograph appears to contain no reference to this very distinct species, I think it as well now to call attention to the bird and bestow on it a separate name.

Of course Schlegel's trinomial appellation cannot stand, nor can we adopt the name *minor*, dropping the middle term of Schlegel's designation, and I think it best, therefore, to bestow upon it a totally new name.

This species occurs in the Bay of Bengal, from which, however, as far down at any rate as Amherst on the Tenasserim Coast, we also have the true *ichthyaëtus*.

The specimen which is the type of the present species, an adult female in full summer plumage, was procured on the 20th March 1876, by my friend Mr. Davison, at Gopalpore on the Ganjam Coast.

He measured it and recorded the colors of the soft parts, but the ticket was unfortunately lost, and we have therefore only the specimen to go by.

Subsequently he has seen the bird in the harbour at Akyab, and I had previously seen it at the Sandheads, but we have been unable to procure any other specimens.

The first point by which this species is distinguished is its much smaller size.

Compared with an average female of *ichthyaëtus* it is simply less than half the bulk. The bill is so much smaller that there is no comparison betwen them, and the tarsi are just two-thirds of the circumference of those of *ichthyaëtus*. The comparative dimensions may be gathered from the following, an average female *ichthyaëtus* having been selected :—

	Wing.	Tail.	Tarsus.	Circum. of Tarsus.	Mid toe and claw.	Bill from gape.	Culmen.
L. ichthyaëtus, Female.	19·0	7·8	3·1	0·95	2·4	3·51	3·15
L. innominatus, Female.	16·5	7·0	2·51	0·62	2·2	3·0	2·7

The second point is, that the adult bird in summer plumage entirely wants the broad white line on the posterior two-thirds of the upper and lower eyelid.

In the third place, though we have unfortunately no exact record of the colors, the legs and feet appear to have been differently colored; the terminal dark band on the bill is not half the width it is in *ichthyaëtus*, and the rest of the bill behind the mandible appears to have been very much redder than in *ichthyaëtus*. I think too that perhaps the head and neck are a more intense black.

In the fourth place, there is very much more black on the primaries (and this Schlegel notices) as I have attempted to show in the following comparative statement:—

Larus innominatus.

1*st*.—Outer web and nearly terminal half black, broad white band across both webs near tip, much less extended on outer web, small white tip.

2*nd*.—Terminal 2-5th black, a round white spot on inner web near tip, small white tip.

3*rd*.—Less black, no white spot, narrow white tip.

4*th*.—Less black, otherwise similar.

5*th*.—Less black, otherwise similar.

6*th*.—Black reduced to band ¾ wide.

Note.—In the 2nd, 3rd and 4th the white of the inner web runs down into the black, towards the middle of the web, about 1·5 in the 2nd, 2·0 in the 3rd, and 1·0 in the 4th.

The inner webs of 5th and 6th are decidedly tinged with grey, and there is a trace of this towards the base on the inner web of 4th and the outer webs of 5th and 6th.

Larus ichthyaëtus.

1*st*.—Outer web and a broad band about 2·5 broad blackish brown, tipped for 2·5 white, in some immaculate, in some with small black band near tip on inner web.

2*nd*.—Terminal 2-5th of outer web black, less black on inner web, a huge white patch on inner web near tip, a small white tipping.

3*rd*.—Less black, otherwise similar.

4*th*.—Black reduced to band of less than 2·0 on inner webs, though running a little higher up the inner margin, and on the outer web.

5*th*.—Similar, the band on inner web less than 1·5.

6*th*.—Band about 0·5.

Note.—Some specimens have much less black than this, the 6th primary in some has merely a trace of a black band, while in 2nd primary the spot on inner web is not a mere spot, but is continuous with the white of the upper part of the inner web, and there is a patch on the outer web as well.

I have not the slightest doubt that this is a perfectly distinct species, and I cannot make out how Mr. Saunders, who doubtless examined all the specimens in the Muséum des Pays Bas, did not notice it.

Sturnia incognita, *Sp. Nov.*

Most resembling S. burmanica, *but naked eye space much more prolonged posteriorly. Head and crest earthy brown, more or less dusky; mantle nearly black. Upper tail-coverts and a broad nuchal collar, pinky buffy white.*

Mr. Mandelli sends me three specimens of a Myna collected between our Frontier and Bangkok in Siam, which I am unable to refer to any known species. It is very likely that it has already been described, as it was collected more than a year ago, and many specimens were, I believe, sent to Europe, but it seems just as well, as it not improbably may occur also within the Tenasserim border, to give a full description and thus draw attention to it.

The following are the dimensions taken from dried skins :—

Length, 9·0 to 10·0; wing, 4·75 to 5·1; tail from insertion, 3·0 to 3·4; tarsus, 1·28 to 1·4; bill from forehead, 1·0 to 1·1.

The bill appears to have been orange, redder at the base, yellower at the tip, no black at base of lower mandible as in *burmanica;* the legs and feet yellow, dusky on the feet; the cheeks below the eye, and a band extending for more than half an inch behind the eye bare, black in the dry skin, perhaps deep blue in the fresh bird.

In this respect, as also in the shape of the bill, the bird resembles *Sturnia burmanica,* but has a greater development of the bare patch.

The lores dusky; the forehead, crown and occiput, including the filamentous crest and the sides of the occiput, a sort of dull earthy brown, in some specimens becoming dusky towards the occiput; chin, throat and sides of the head below the bare patch dirty white and in specimens which are dusky on the crest, with more or less of a blackish dusky patch at the base of the throat, extending in one specimen well on to the breast. I cannot be certain whether this is the natural color of the feathers, or whether this black color is due to some stain.

A broad nuchal collar of a dirty pale pinkish buff or yellowish vinous; breast, upper abdomen, sides and flanks vinous, much the same color as in *burmanica,* but dingier; middle of lower abdomen, vent, tibial plumes, lower tail-coverts, sullied white, with,

in some specimens, a faint vinous or buffy tinge; axillaries, wing lining and the extreme basal portions of the primaries nearly pure white, as are the primary greater wing-coverts; primaries black, brownish on their inner webs; secondaries and their greater coverts bronzy brown; interscapulary region, scapulars, back and lesser wing-coverts black, with in some lights faint greenish reflections; upper tail-coverts a pinky white or very pale vinous buff; tail feathers black, all but the central pair more and more broadly tipped with white as they approach the exterior; the central tail feathers narrowly tipped white, and with a faint metallic reflection.

This species is quite distinct from all the many species known to me, and if it has not been recently described, it is, I think, new. In the huge bare space behind the eye it approaches nearest to *Gracupica nigricollis*, but in every other respect its nearest ally is decidedly *Sturnia burmanica*, though the crest is somewhat less full than in that species.

Catalogue of the Birds in the British Museum, Vol. IV.

By R. Bowdler Sharpe, &c., &c.

Mr. Sharpe's new volume, containing the Cuckoo Shrikes and the Flycatchers, reached me too late for notice in the last number.

Like its predecessors, it is a most valuable contribution to ornithology, and widely as many ornithologists will differ from our author, alike as regards the general classification adopted, and the particular conclusions arrived at, no one can deny the enormous value of the work as a whole, or dispute that each successive volume constitutes a new point of departure for scientific ornithology in regard to the families of which it treats.

As in the case of preceding volumes a very considerable number of the species referred to are Indian, and it possesses, therefore, a special interest for Indian ornithologists.

It seems useless to repeat that, so far as the text is concerned, the book has been got up with the greatest amount of care. Indeed no one, who has not themselves been engaged in similar work, can conceive the enormous amount of wearisome labour that this one volume of less than 500 pages represents, or the vast amount of other people's labour which it is calculated to save.

But "grieved to condemn, the Muse must still be just," and I am compelled to say that several of the plates are by no

means up to the standard of the illustrations furnished in former volumes.

I see that these are all by Mr. Keulmans, and that Mr. Keulmans *can* draw most beautifully when he chooses to take the trouble, I should be the last to deny.

Since Mr. Wolff has retired, no one quite equal to Mr. Keulmans has, to my fancy, appeared. But these present drawings are by no means creditable to him. No one would credit that they were the work of an old and experienced artist. They look like the early efforts of some beginner—a promising beginner, no doubt, destined to turn out good work hereafter, but as yet quite wanting finish, softness of touch, and delicate appreciation of colour. Nothing can be more harsh and crude than some of them. They remind one of some of the illustrations in Jardine's works.

If Mr. Keulmans is going to draw in this style in future, it will be a national misfortune. If it were any one else it would not signify, but if he, foremost in the ranks of ornithological artists, is to set such an example, it will certainly materially tend to lower the high standard which has, of late years, been attained. How my friend Mr. Sharpe ever put up with some of these plates, I cannot understand. *I* have had to accept far worse, no doubt, in the "Game Birds of India," but then I was out in India, and was compelled to accept what the artists and chromo-lithographers chose to favour me with; but when one has the artists at once's elbow, and can check every stage in their proceedings, it is widely different.

I must again call attention to the apparent hopelessness of the completion of this Catalogue within any reasonable time. I think it was early in 1873 that Mr. Sharpe commenced work, so that it has taken six years to compile these four volumes. No one, I am sure, could have possibly done more within the same period, with the assistance available to him, than Mr. Sharpe has done; but at the same time the fact remains that somewhat less than 1,400 species and sub-species have been dealt with in six years, so that at the present rates, reckoning the total number of species and sub-species now known, at between 14 and 15,000, it will take between 50 and 60 years to complete the work. I am aware that one volume, at any rate, has been undertaken by Mr. Seebohm, but this will not materially affect the progress of the work, and no great number of volunteers will, I apprehend, be found to follow Mr. Seebohm's example. Mr. Howard Saunders might, perhaps, be induced to do the Gulls, and Mr. Harting some sections of the Waders, and there are one or two others who might perhaps similarly assist in particular groups. But if the British Museum authorities want the Cata-

logue completed within any reasonable period, they must afford Mr. Sharpe material assistance, and put at least half a dozen competent men under his direction. As it is, every one knows that Mr. Sharpe's services have been very inadequately recognised; that he has neither received any material assistance nor any reasonable advancement as a reward for his exceptionally good and hard work; and I must say I shall be surprised if, after the discouragement he has met with, Mr. Sharpe continues to labour day and night, as he has done in the past, to bring out these Catalogue volumes; and, unless the authorities of the British Museum amend their ways, I myself do not in the least believe that this Catalogue will be completed within 50 years.

One point more: If the British Museum authorities were well advised, they would keep the type of all these volumes standing, and year by year, print off corrected editions, so that in every group the British Museum Catalogue might always represent the exact state of our knowledge up to date. This system of keeping the type standing is, I find, far preferable to stereotyping, when large and constant additions are likely to be made. It only involves the initial outlay on a good many tons of type, and plenty of space in the basement (which the Museum authorities certainly have, or at least used to have,) in which to store away the forms.

ALLAN HUME.

A Monograph of the Cinnyridæ, or Family of Sun-Birds.

BY CAPT. G. E. SHELLEY, &c., &c.

SECOND NOTICE.

ON a former occasion (Vol. V., p. 67,) we noticed the first three parts of this splendid monograph. Since then the publication has been proceeding pretty steadily; but owing to some mistake somewhere, it is only quite recently that we obtained Part IV, though Parts V and VI reached us long ago. It is these three parts only that we propose to notice on the present occasion. We hope at an early date to receive six more parts which, we understand, will have been published by the close of the year, and shall then notice these also in detail.

Even admitting the superior claims of the Humming Birds and the Birds of Paradise, the Sun-Birds, as a group, certainly come third in the order of beauty; and the drawings which illustrate this present work, and which shew how Mr. Keulmans

can draw when he pleases, are as a rule well worthy of the subjects they represent.

In my former notice of the earlier parts of this work, I duly noticed the excellence of the text, and the great care which had been bestowed in working out the synonymy and such other details, and I have only to say that these present parts are fully up to the high standard of the earlier ones.

Part IV. appeared on the 15th of May 1877.

pl. 1. *Nectarinia tacazze.*—This was described in Part III. The female is here figured for first time.

pl. 2. *Cinnyris andamanicus.*—Here figured for first time; it was described in Part III.

pl. 3. *Cinnyris rhizophoræ*—Is here, I believe, figured for first time; it was described in Part III.

pl. 4. *Cinnyris bouvieri.*—Both male and female are figured; they were described as new in Part III.

pl. 5. *Cinnyris bifasciatus.*—The adult male and female and young male are here figured, and although Captain Shelley, when he wrote his article upon this species (Part I), deemed a figure of it unnecessary, I think he is quite right in having decided to give one.

— *Cinnyris hasselti.*—Captain Shelley published the illustration of this bird in Part I under the older title *brasilianus*, which he here discards as not being appropriate to a Malay bird, in accordance with the opinion expressed by Mr. Salvin (*Ibis*, 1877; p. 124); as already noticed I cannot agree with this view.

The following additional references may be included in the appendix:

Leptocoma hasseltii, Bp. Comptes Rendus, 1854, p. 265.
Nectarophila brasiliana, Stoliczka, J. A. S. B., XXXIX, p. 300 (1870).
Nectarophila hasselti, Blyth, Mamm. and B. of Burma, p. 142 (1875).

pl. 6. *Cinnyris speratus.*—The female and young male are here figured for first time.

— *Anthreptes simplex.*—Captain Shelley refers my *Anthreptes xanthochlora* to this species, and I am disposed, now that I know the species better, and understand the great variation in size to which it is subject, to agree with him. *Arachnothera simplex*, Gray, from Lombock should, Captain Shelley now tells me, be erased from the synonymy: it does not belong to this family.

pl. 7. *Cinnyris minimus.*—This is the first time that the species has been well figured, or that any detailed account has been given of its habits, &c.

— *Cinnyris reichenbachii.*—The true female plumage is here, according to Captain Shelley, described for the first time; for he considers that Mr. Cassin's description of the female should be referred to the young male, or male in moult.

— *Æthopyga gouldiæ.*—Here fully described, and its distribution correctly stated.

— *Æthopyga flavostriata.*—*Æ. beccarii* is considered to be the young male of this species.

— *Eudrepanis duyvenbodei.*—The Sanghir Yellow-backed Sunbird described.

pl. 8. *Chalcostetha insignis.*—The genus *Chalcostetha* is here restricted to this single species. The locality Celebes for this species rests upon Dr. Brüggeman's authority.

pl. 9. *Cinnyris asiaticus.*—Captain Shelley entirely rejects the generic title *Arachnechthra*, and places our common Indian species at the head of what he terms the "dark metallic group" of *Cinnyris*, which includes the type of the genus *C. splendidus*. My *intermedius*, and Blanford's *brevirostris*, are, in accordance with the views I have often expressed, looked upon as mere varieties. Captain Shelley thinks that the *Certhia cirrhata*, Lath., should most probably be referred to *zenobia*.

— *Cinnyris grayi.*—The author refers this species to his "black" group, which is equivalent to *Hermotimia*, Reich., and follows Count Salvadori in dividing that group into two divisions:—

1*st.*—Species with the metallic portions of the wings and lower back steel blue.

2*nd.*—Those species with the above named parts of the plumage metallic green (often more or less shaded with blue).

pl. 10. *Cinnyris porphyrolæmus* } The illustration represents
— *Cinnyris sangirensis,* } the adult males of these two species, the former being here figured for the first time.

Part V. appeared 22nd September 1877.

pl. 1. *Eudrepanis duyvenbodei.*—Both sexes are here figured for the first time. They were described in Part IV.

pl. 2. *Cinnyris reichenbachii.*—The male, female and young male are here figured for the first time. They were described in Part IV.

pl. 3. *Cinnyris sangirensis.*—In this plate are represented, for the first time, the adult female, and what the author terms "male in moult" and "young male;" the latter is charac-

terised by the throat being strongly shaded with orange-yellow. The adult male was figured on pl. 10 of Part IV.

pl. 4. *Cinnyris auriceps* and *C. morotensis*.—The adult males of each are here figured for the first time. The author tells me that the illustration is not quite satisfactory, and that the characteristic greener crown, and the green instead of lilac gloss in the metallic portions of the throat, wings, and back in *morotensis*, are not sufficiently marked in the illustration; *Nectarinia porphyrolæma*, Brügg., should be struck out of the synonymy as it refers to *Chalcostetha insignis*, and not to *Cinnyris auriceps*. The locality Celebes for *C. auriceps* rests upon Dr. Brüggeman's assertion that Dr. Fischer collected it there.

— *Cinnyris morotensis*—Is described as a new species from Morty Island, very closely allied to *C. auriceps*.

pl. 5. *Cinnyris nigriscapularis* and *C. salvadorii*.—The adult males of both are here figured for the first time, and the latter species is here described as new from the island of Jobi in the Bay of Geelwink. I should not be surprised if the acquisition of more specimens should void this supposed species.

pl. 6. *Cinnyris proserpinæ*.—The male and female are here figured for the first time.

pl. 7. *Cinnyris aspasioides* and *C. aspasiæ*.—The adult males of these species are figured, the former for the first time. The "larger size" of *C. aspasioides*, "as shown by the greater length of the culmen and tail," is given as one of its characters, but is not apparent. I do not know the birds, but they seem very closely allied in the illustration. *Chalcostetha goramensis*, Salvad., it appears, belongs to this species.

— *Cinnyris aspasiæ*.—In the synonymy we find *Nectarinia amasia*,* S. Müll, and *Chalcostetha chlorocephala*, referred to this species. Captain Shelley gives the range of this species as: "Waigion, Koffias, Mysol, Salwatti, Aru Islands, and New Guinea, and eastward to the Duke-of-York Island." Captain Shelley, therefore, differs from Count Salvadori who considers the Duke-of-York Island bird as distinct.

— *Cinnyris jobiensis*.—Here described.

pl. 8. *Cinnyris maforensis* and *C. mysorensis*.—The adult males of these two species are here figured for the first time, and both are as fully described and dealt with as available materials permit.

* A mere *lapsus calami* as Salvadori has pointed out for *aspasia*.

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pl. 9. *Cinnyris theresæ.*—The adult male, and male in moult, are here figured and described. The female is still unknown.

pl. 10. *Cinnyris lotensis*—Is here fairly well figured and fully dealt with. I quite agree with Captain Shelley that it is not desirable to make separate species of the Ceylon and Southern Indian races.

— *Cinnyris flagrans.*—Here described.

Part VI. only appeared 15th February 1878. The publication of this part was delayed, Captain Shelley says, for the illustration of *Urodrepanis christinæ*, which was finally replaced by

pl. 1. *Cinnyris osiris* and *C. erythrocercus.*—Two species from North-east Africa. The former is here figured for the first time, and was described in Part I.

pl. 2. *Cinnyris jugularis.*—The male and female are here figured.

pl. 3. *Cinnyris pectoralis.*—Male and female figured.

pl. 4. *Anthreptes simplex.*—A male and female from Borneo are figured, as well as the female, which was the type of my *xanthochlora.*

pl. 5. *Æthopyga nicobarica.*—The male and female are here figured for the first time.

pl. 6. *Æthopyga saturata.*—Both male and female are figured and described.

pl. 7. *Æthopyga sanguinipectus.*—Both male and female are figured here for the first time, and fully described.

— *Æthopyga nipalensis*—Fully described.

— *Æthopyga horsfieldi*—Is dealt with as fully as our present knowledge permits.

— *Æthopyga siparaja.*

pl. 8. *Æthopyga cara.*—The male and female are figured here for the first time, and the species is satisfactorily described and dealt with.

pl. 9. *Arachnothera longirostra.*—The male and female are here figured and described. The author divides the Spider-hunters into two genera:—*Arachnothera*, with the culmen compressed into a somewhat sharp keel, and *Arachnoraphis*, Reich., with the culmen flattened or rounded. He observes: "In the case of the Spider-hunters we cannot depend upon dimensions for specific characters, as the measurements are extremely variable in individuals of the same species; and in some instances it would appear that the bill does not cease to grow after the bird has attained

its full plumage." He informs us that the locality Celebes for this species is extremely doubtful, for he believes that there is no specimen of a Spider-hunter in any collection, the collection of which in Celebes rests upon good authority.

— *Anthreptes rhodolæma*—Is described as a new species, from Malacca and Sumatra. Closely allied to *A. malaccensis*, but "easily recognised by the rufous colouring of the throat, sides of the head, and of a large portion of the wings, as well as by the olive shade of the breast, which contrasts strongly with the bright yellow pectoral tufts." I note that I have a fine specimen of this species from Sarawak.*

pl. 10. *Anthreptes malaccensis.*—Male and female figured with the nest. The range of this species is limited to Arracan, Southern Burmah, Siam, Cambodia, the Malay Peninsula, and the Island of Penang, Sumatra, Java, Madura, Flores, Borneo, Labuan and Palawan. A specimen from Madura is described as a variety.

— *Anthreptes celebensis*—Is described as a new species from Celebes and the Sula Islands. It is a representative form of *A. malaccensis*, in which the chief character in the male is the strong olive shade of the breast, while the female differs, it is said, very conspicuously from that of *A. malaccensis.*

— *Anthreptes chlorigastra*—Is another form closely allied to *A. malaccensis*, differing, it is said, from that species in its larger size and in the breast being strongly shaded with olive green. It was originally described by Mr. Sharpe from the island of Negros in the Philippines, and Captain Shelley here identifies the Sanghir Island birds as belonging to the same species.

A History of the Birds of Ceylon.

By Captain W. Vincent Legge, R.A., &c., &c.

Second Notice.

A second part of this really beautiful work has, by this time, appeared in England; and an early copy, kindly sent me by the author, has arrived just in time to enable me to announce its appearance in this present number.

The first part, as will be remembered, contained the Accipitres and Picariæ. The present part contains the Passeres and

* I am doubtful whether this will prove to be a good species.

COLUMBÆ. The two parts contain 730 pages of closely-printed letter-press and 24 plates, and with the third part, soon to issue, they will make a very thick Royal Quarto Volume, containing 1,000 pages of letter-press, or more, and some 32 plates.

Everything about the work—paper, printing, plates and letter-press—are first class. It is certainly one of the very best provincial ornithologies ever issued. Indeed, I do not think that, taking it as a whole, I have seen any work of the kind so entirely satisfactory.

It is decidedly cheap, as ornithological works go. The price of the entire work is only £6, say 72 rupees, and it includes the great majority of the species met with in Southern India. Indeed to all collectors in the Peninsula of India, it would prove almost as useful as if it was an Ornithology of Southern India. I am, therefore, very much surprised to learn from the author that scarcely any Indian ornithologists have taken copies. For my part I do not know any work that I could more conscientiously recommend to any one taking up the study of ornithology in Southern India, than this excellent work; and I sincerely hope that it will receive from Indian ornithologists the support that it so emphatically deserves.

It is quite impossible, at this late period, to offer any detailed criticism of this elaborate work; and, indeed, so far as I have been able to examine it, though there is much to praise and admire in it, there is extremely little to criticise. Of course in a work of this magnitude a very great number of questions are raised, in regard to which differences of opinion will arise; and some day, when I have time, and when the work is complete, I shall hope to be able to submit my views in regard to some of these; not as supposing that I am likely to be any more correct than Captain Legge, but because it is always useful to have both sides of every question on record; and there are certain points on which I differ widely from the conclusions at which our author has arrived.

In the meantime, I must again most strongly recommend all Indian ornithologists to provide themselves with copies of this work. A very limited number of copies have been issued, and the work will not be long in the market. The care with which descriptions, measurements, distribution, habits and nidification have been worked out for each species treated of, is in the highest degree creditable to Captain Legge, and cannot fail to be of the greatest service to all really engaged in working at the ornithology of Ceylon, of Southern India, or the Indian Empire generally.

ALLAN HUME.

Notes.

In my Second Notice of the Birds of the Western Half of the Malay Peninsula, (*ante* p. 158), I mentioned that we had obtained near Malacca a specimen of Rallina manderina, *Swinh.*

Now, owing to the kindness of my friend Professor Alfred Newton, who has sent me an exact translation of Ljungh's Paper, which I have for years been vainly endeavouring to procure, I am enabled to suggest with much confidence that Rallina manderina, *Swinhoe*, is nothing but Rallina paykulli, *Ljungh.*

The British Museum has apparently* specimens of this latter from both Batavia, (whence came the type) and Malacca. I have *manderina* from Malacca. Ljungh's description fits *manderina* perfectly. I do not think that there can be any doubt as to the correctness of this identification.

The following is the translation of Ljungh's paper, taken from the "Kongl. Vetenskaps Akademiens Handlingar, för Ar. 1813" (Stockholm, 1813) p. 258, sent me by Professor Newton:—

"*A new Bird, 'Rallus paykulli,' described by* Sven Ingemar Ljungh, 21*st July* 1813.

"In the collection of birds left by the late Johan Brande, the Provost and Pastor of the Lutheran Church at Batavia, which, by favour of the heir, came into my hands, are many extremely rare species, and some even hitherto altogether unknown. Of the latter, have I now chosen this very pretty Corncrake (*Rallus*) to give a short description and figure of it to the Royal Academy of Sciences. The genus *Rallus* is already very large, and Gmelin, in his edition of the Linnæan System of Nature, enumerates not less than 31 species in it. Notwithstanding this, however, according to all indications, this species is still undescribed.

"From the notes and statements of Provost Brande, this bird has its home on the Great Sunda Island of Borneo, especially near the town of Banjarmasing, and on the Island of Java, particularly round the town of Batavia, in their widely extending rice fields, where morning and evening its remarkably powerful creaking [p. 259] and often repeated note, *Haerr, Haerr*, is constantly heard, but it very seldom comes forth to view, and still more seldom lets itself be caught or shot, so that one may, with all means, say of it what the Archiater [Chief Physician] Von Linné, declared of our own Common

* That is assuming Mr. Gray's identification of the specimens correct.

ZOOLOGICAL GARDENS 1875. CUTTA

Corncrake (*Rallus crex*), namely that thousands have heard it well, but scarcely one has properly seen it. The above is the reason why this species is not found in the numerous European collections of birds, or has not before been noticed. However, one of Provost Brande's slaves, after many vain attempts, succeeded in shooting this specimen, one day at sunrise. The remains in its intestines shewed that it lived upon grains of rice and various insects.

"The species can be determined as follows :—

"*Rallus paykullii* supra totus fusco-olivaceus, immaculatus, fronte, lateribus colli pectorique ferrugineis; abdomine crisso alisque subtus albo-nigroque fasciatis.

"And further it may be described thus :—

"*Rallo porzana* paullo major. Rostrum pedesque fusci uti etjam apices alarum subtus. Remiges olivacei margine interiore tribus vel quatuor maculis transversis albis. Rectrices breves olivaceæ immaculatæ. Femora seminuda. Fascias transversas majores albas abdominis interjacent aliæ lineæ parvulæ albæ et alæ ante apicem albo-maculatæ fasciis absoletis.

"The figure is executed by a masterly hand from Nature and of the natural size. The bird, stuffed by myself, has been given by me to the rich Paykull bird collection, after whose owner, so zealous and learned in Natural History in general, and in Ornithology in particular, the Canzlie-Rad [Chancery Councillor] and [p. 260] Knight of the Royal Order of the North Star, Herr Gustaf Paykull, I as a due mark of gratitude take the liberty of naming this rare bird.

"In connexion herewith, I have the honor to state that *Rallus porzana*, Gmel., Syst. Nat. Linn. 1, 2, p. 712, No. 3 [here follow some references to older writers] which by Herr Thunberg in the Royal Academy's Handlingar [Memoirs] for 1798, p. 182, No. 5, and by Herr Retzius in his Fauna Succica, Part I, p. 202, No. 177, is named as Swedish, is found on low meadows around Jönköping, and is called there the Gräsknarr [Grass-Crake] and has a note like *Tjärrk*, *Tjärrk*, which it is continually crying throughout the night.

[A Latin description of *R. porzana* follows.]

"Tab. V. represents the above described *R. paykullii* (uncolored.)"

It is very desirable, I think, that some one in Europe should now carefully work out the Geese. Considerable confusion seems to exist in regard to the number and names of the species, and our latest and best authority, Mr. Dresser, has by no means entirely cleared up the matter.

Mr. Dresser, for instance, figures as *Anser cinereus* the bird with the pink bill; but, as far as can be judged, there are two distinct species of Grey Lag Geese, both with flesh-coloured feet, both with white or yellowish white nails to the bill. One with the bill orange, the other with the bill pink fleshy, livid purplish pink, &c. I take it that this difference in the color of the bill is of specific value, because I have killed thousands of Grey Lag Geese in India, and all have invariably had pinky bills.

Now the true *cinereus*, as described by Meyer, has the bill "pale orange red." Naumann, too, both figures and describes the bill in the same way. He says distinctly:—"Bill orange, without black, naked eyelids and feet pale flesh color." Macgillivray, too, gives the bill as yellowish orange; this too is *ferus* of Stephen, who says, beak orange yellow.

This then appears to be the true *cinereus*, and not the bird figured by Mr. Dresser, and I may note that apparently these yellow-billed birds have the front of the neck and breast a great deal more conspicuously barred than is ever the case with the species figured by Mr. Dresser.

The species figured by Mr. Dresser appears to be *vulgaris* of Pallas, who says, "bill, feet and eyelids reddish;" and it is also of course the *rubrirostris*, of Hodgson.

This too is the bird described by Yarrell, who says, "bill of a pink flesh color."

Apparently, therefore, there are two species of the Grey Lag Goose, both of which occur in Europe, but only one of which, so far as I can ascertain, occurs in Asia; but this is a point in regard to which I can only throw out suggestions; the matter can only be properly cleared up by ornithologists in Europe. It is not altogether impossible that the *cinereus* form may be the summer plumage, and the *vulgaris* the winter.

Then I notice that Mr. Dresser quotes *Anser sylvestris*, Briss., Orn. VI., p. 265, as a synonym of *cinereus*, whereas clearly *sylvestris* of Brisson is the true *segetum* of Bechstein, for Brisson says, "bill blackish from the base for nearly half its length, then saffron yellow, and black at the tip." How Mr. Dresser could imagine this description to refer to the species he figures as *cinereus* I cannot understand.

Then I notice that Mr. Dresser includes, though with a note of interrogation, Naumann's *Anser segetum* as a synonym, of *brachyrhynchus*, which, however, he says is not the *segetum* of Gmelin. Now the *segetum* of Naumann is, it appears to me, certainly the *segetum* of Bechstein, and it is also, I should say, the *segetum* of Gmelin, "*pedibus croceis, rostrum medio rubescens, basi et apice nigrum.*" And, judging from Naumann's explanation, I should guess that his *Anser arvensis*, which is what most

English ornithologists, if I am correctly informed, accept as the true *segetum*, was a good species distinct from the true *segetum*.

But the more I look into the works of such authors as I have access to, the more hopeless seems the confusion; and it is to be hoped that some European ornithologist will, with the aid of their grand museums and libraries, work out the whole of this group. I confess that I am unable to come to any conclusion on the subject here.

BLYTH AND OTHER ornithologists have identified our Burmese HEMILOPHUS FEDDENI, *Blanford* apud *Blyth*, J. A. S. B., XXXII, p. 75, with PICUS CRAWFURDI, *J. E. Gray*, Griffith's English edition of Cuvier's Animal Kingdom Birds, Vol. II, p. 513.

Not having this latter work to refer to I had adopted this identification. Having now referred to Gray's plate and description, I may say at once that this identification cannot be adopted.

I must first explain that Mr. Gray's plate and description are taken from one of the pictures prepared from fresh specimens by a native artist for Mr. Crawfurd, Junior. From a similar picture was taken the plate and description of the (until recently) unknown *Geocichla avensis* lately re-discovered by us in the Malay Peninsula, *vide* S. F., VIII., p. 38 *et seq.*

The plate of *avensis*, though stiff and inartistic, is a very faithful one, and there is therefore a strong presumption in favor of the accuracy of the plate of *Picus* (*Thriponax*) *crawfurdi*. Now Mr. Gray's description of *crawfurdi* is as follows:—

"The whole upper part, except the crest, is deep dark brown, sprinkled with grey on the sides of the neck; across the breast is a large lunuled patch of slate color with small dark waves; the belly is yellow with the like crescent-shaped spots, and the crest is deep red."

Now the plate accurately corresponds with this description. The bird is not black on the back wings and tail, but deep brown; the wings are distinctly separated so as to show the centre of the back, rump, and upper tail-coverts, and these are all blackish brown, whereas in *crawfurdi* the lower back and rump are uniform yellowish white. This alone destroys the possibility of the identity of *feddeni* and *crawfurdi*. But there are many other points of difference. First the general color of the bird already referred to; second, the broad slaty pectoral band, of which there is no trace in *feddeni*; third, the entire

absence in the drawing of any trace of the narrow white tips to the earlier primaries, always more or less conspicuous in *feddeni*; fourth, the color of the legs and feet, which in *crawfurdi* are carefully shown as lead color, with the soles and the back of the tarsi pale yellow, while in *feddeni* these parts are all uniform lead color; fifth, the specimen figured must have been either a male or a female; if it was a male it agrees with *feddeni* in having the red of the head extending to the forehead, but differs in entirely wanting the huge red mandibular patch; if it was a female it agrees with *feddeni* in wanting this mandibular patch, but differs from it in having the entire crown and almost the whole forehead red, whereas in female *feddeni* only the occiput and quite the posterior portion of the crown are red.

There can be no doubt, I think, that *crawfurdi* represents an as yet undiscovered species of this genus of the *javensis* type with the black rump and upper tail-coverts, and that our Burmese species must bear the name of THRIPONAX FEDDENI, *Blanford*.* It is quite true that on the strength of Jerdon's remarks, BIRDS OF INDIA, I, 285, Cabanis (Mus. Heine, Vol. II, Picidæ, p. 105, *note*) named the Pegu bird *T. jerdoni*, but the page on which this occurs was only *printed* on the 15th July 1863, and the paper itself was not *published* till January 1864, while Blyth's description was read, I believe, in 1862, and was published in April 1863.

I DO NOT know whether the plumage of old adults of *Butorides javanicus*, (*chloroceps*, Hodgson) has ever been noted. It is quite sufficiently distinct to lead any one to suppose that they had got hold of a new species.

In the ordinary adult, such as we most commonly procure them, the whole neck all round, breast, and rest of the lower parts including wing lining, are grey. There is a broken white stripe down the centre of the throat continued into the middle of the breast, a white stripe behind the eye, and an obscure white stripe at the base of the lower mandible; more or less of the lower mandible is yellowish horny, and all the wing-coverts and secondaries are conspicuously margined with pale buff, buffy white or occasionally on part of the wing white.

In the old adult the neck all round, breast, and lower parts are a dusky sooty grey with a reddish tinge on the breast, becoming a chocolate brown on the abdomen, vent, &c., including wing lining. There is no white stripe down the middle of

* Though often quoted as *T. feddeni*, Blyth, even by Mr. Blanford himself in the *Ibis*, 1870, p. 464, Blyth himself, when describing the species, J.A.S. B., 1863-75, gives Blanford as the authority for the name *feddeni*, and the name must, therefore, stand as Blanford's.

the throat, no white behind the eye, the cheeks and the whole space behind the eye being black. The entire bill is black; there are no pale margins to any of the feathers of the wing which are a rich dark metallic green.

The two birds look so different that it is only the possession of a large series bridging over the difference between the two forms that has enabled me to make certain that they are one and the same species.

Of course the young again are quite as different from the ordinary adult as is the old adult from this latter, but the young I have already noticed on former *occasions* (*ante*, II., 310, &c.)

It may be well to note that, re-examining my Swifts, I find that those from Kurrachee, the Mekran Coast and Muscat are *C. pallidus*, of Shelly, while all our Swifts from Kandahar, Murri and Cashmere are identical with specimens from Pekin sent to me as *pekinensis* by Mr. Swinhoe.

I must say however that I doubt the expediency of separating this latter. This much may be said that, as a whole, *pekinensis* has a larger extent of white on the throat and foreneck than *apus*, and that its general color is a trifle lighter than that of *apus*. Generally the interscapulary region in *apus* is perceptibly darker and blacker than the same parts in *pekinensis*, but I have a female from Hampstead, killed on the 20th June 1869, that so far as color goes is absolutely identical with a Pekin specimen killed on the 7th June 1868—the only points of difference that can be selected being the slightly paler forehead and the somewhat greater extent of white on the throat. I must say I doubt the propriety of separating the Chinese and Indian birds from *apus* on such very slender grounds.

Mr. Chill has recently sent me a fine male of *Querquedula falcata*, making the fourth male of this species that I have obtained or received. I have been rather puzzled at getting no females, but on examining the only female of this species that I possess, I have no doubt whatsoever that these are universally passed over as female Gadwalls.

Indeed the two birds are so extremely like each other, and the bills are so very nearly the same size and shape, that this is not to be wondered at, although in the female *falcata* the whole upper mandible is uniformly dark coloured, whereas in the female Gadwall it is only dark along the culmen. But it is in the speculum of the wing that the difference between the two species is most readily discernible.

In the female Gadwall the entire visible portions of the later secondaries are pure white, the terminal portions of their larger coverts, black.

In female *falcata*, the visible portion of all the later secondaries are black, with a metallic green reflection, narrowly tipped with white, and the terminal portions of *their* greater coverts are white.

If these distinctions are borne in mind, there will be no difficulty in discriminating the females of the Gadwall and Falcated Teal.

I may add that the female Gadwall is the larger bird of the two, with a wing of at the least 9·6, against 9·0 in the Falcated Teal.

ALTHOUGH THERE is no record of the fact, it seems to me highly probable that the European Great or Solitary Snipe *(Gallinago major)*, which certainly occurs in Persia, will also prove to occur in Sindh, the Western Punjab, Affghanistan, and Kelat. Indeed I have heard tales of huge Snipe being shot in these parts, which I am inclined to suspect refer to this species.

Though much larger than the Common Snipe, weighing from 7 to 9 ozs., or even more, with a wing of 5·5 inches, the bill is a trifle shorter and slenderer than in the Common Snipe. The bird is a fan-tail, like the Common Snipe, not a pin-tail; but it has the axillaries very broadly and regularly barred black and white, as in the pin-tail, only more broadly.

The upper plumage is very similar to that of the Common Snipe, but all the wing-coverts, especially the primary greater coverts, are much more conspicuously tipped with pure white, and the whole of the front and sides of the neck and entire breast are very distinctly spotted with dark brown, not blurred and clouded, as in the Common Snipe.

In the fresh bird the weight and the length of wing would generally suffice for the immediate identification of the species.

THE FEMALE of the Clucking Teal, *(Q. glocitans)* might perhaps be mistaken for that of *Querquedula crecca*, but it has a much broader bill. In *crecca* the upper mandible at its widest point near the tip, does not exceed 0·55; in some specimens it is not above 0·5, while in the present species it exceeds 0·6. The bird is altogether larger, having a wing of about 8·0, against about 7·0 in *crecca*. Then, in this species, the lower back and rump are a grey brown, nearly uniform, a little darker at the

shafts; while in *crecca* these parts are very dark brown, each feather conspicuously margined with white, greyish white or buffy white.

The wing specula are very similar, but in *crecca* the tippings of the secondary greater coverts are broader, and are white, only tinged with buff posteriorly. In the present species they are narrower and rufous buff throughout; again, the white tippings of the secondaries themselves are much broader in this species than in *crecca*.

I DON'T KNOW whether Mr. Seebohm is right in re-naming the Black-backed Black-line-through-the-eye Wagtail (see *Ibis*, 1878, p. 345, pl. 9), but I have a beautiful specimen of this species from Mr. Swinhoe, labelled by him, "No. 1302, *Hakodadi, Japan, Male, May, Motacilla japonica B.*," showing, I think, that this was the bird he intended by his name *japonica*. I have another specimen collected by H. G. St. John shot in Tapan, China, May 1866, also from Mr. Swinhoe labelled by him *Motacilla japonica*. I cannot think that Mr. Seebohm is right in ignoring this name.

I MAY NOTE that the Grey-backed Black-line-through-the-eye Wagtail (*M. ocularis*) is excessively common in the cold weather about Moulmein, where Davison secured about 50 specimens in a very short time, quite identical with Mr. Swinhoe's specimens.

Letters to the Editor.

SIR,

As a matter of justice I hasten to disclaim the arrangement of Carinate Birds, ascribed to me by my friend Mr. Lydekker in the number of STRAY FEATHERS (VIII, pp. 27, 28) which has this day reached me. Mr. Lydekker seems not to have noticed the initials "W. K. P.," which are subscribed (at page 728) to the *first* part of the article "Birds in the new edition of the 'Encyclopædia Britannica.'" That *first* part is the work of one whose train-bearer I am proud to be—one who is the most original anatomist the world has seen since John Hunter, whose successor he is worthy to be, I mean my excellent friend Mr. W. K. Parker, F.R.S., and Hunterian Professor in the Royal College of Surgeons of England.

ALFRED NEWTON.

MAGDALENE COLLEGE, CAMBRIDGE,
9th August 1879.

SIR,

IN Vol. VII., p. 168, you noted the occurrence of *Halcyon chloris* on the West Coast, as found by me in a mangrove swamp in a village at the extreme north of the Ratnagiri District. I have since found a small colony of these birds in a similar place close to the Ratnagiri station, some sixty-five miles south of the locality from which I first obtained the species. I have also *seen* a specimen on the Vashishti river intermediate between these two localities. I have no doubt now that it will be found to occur sparingly all down the Coast in the swamps at the estuaries of the numerous creeks. As the bird, however, keeps pretty close within the cover of thick mangroves, and feeds only when the tide has left the mud flats exposed, it easily escapes observation.

G. VIDAL.

RATNAGIRI,
June 30th, 1879.

SIR,

WHEN a few weeks ago I received the concluding number of Vol. VII. of STRAY FEATHERS, containing (p. 506) your remarks on Pennant's 'Indian Zoology,' I resolved that, on the first opportunity which occurred to me, I would try and determine the points to which you called attention. Last week I was at the British Museum, and—thanks to the kindness of Dr. Günther—I was able to satisfy my curiosity. The Museum contains a copy of the original, but incomplete, edition of that work from the Banksian Library, and for the convenience of any one wishing to consult it, I may mention that its press-mark is 460. *b* 2. It is a folio with no title page, nor is any wrapper bound up with it, but on a fly-leaf is written in pencil "Indian Zoology, by Thomas Pennant, Esq.," and the first page bears the book-stamp "Jos. Banks." The head line throughout is "Indian Zoology." The descriptions are given in English and French in parallel columns, and the plates are coloured. The species are described and figured under Latin names as follows:—

Sciurus macrourus, p. 1, pl. i.
Falco melanoleucus, p. 2, pl. ii.
Otus bakkamœna, p. 3, pl. iii.
Picus miniaceus, p. 4, pl. iv.
Trogon fasciatus, p. 4, pl. v.
Cuculus pyrrhocephalus, p. 6, pl. vi.
Columba melanocephala, p. 6, pl. vii.
Motacilla sutoria, p. 7, pl. viii.

Gallinula phœnicurus, p. 10, pl. ix.
Tantalus leucocephalus, p. 11, pl. x.
Anser melanotus, p. 12, pl. xi.
Ahinga melanogaster, p. 13, pl. xiii.

Page 14 ends with "Of the Bird of Paradise and the Phœnix," and the catchwords are "these" and "*Ces oiseaux.*"

Should you think the foregoing worthy of a place in the pages of your periodical, you are perfectly welcome to make that use of it.

ALFRED NEWTON.

MAGDALENE COLLEGE, CAMBRIDGE,
25th June 1879.

SIR,

IT may perhaps interest you or some of your readers to know that *Elanus cæruleus* (No. 59) bred here twice this season. The bird used to be a rare one in the district, but since the famine a very great deal of land has returned to its pristine condition, and this little Kite is now the commonest bird of prey. In April, when I came back here, I found pairs all over the district, several accompanied with young. I also found several nests then with nearly full-fledged young.

In June, the birds again commenced to build, and the eggs appear to have been laid as a rule during the last week of that month. I was unluckily detained in a place where there are no Kites for the fortnight from June 28th to July 10th, but I have seen at least 25 nests, mostly with young, almost all along the sides of nullahs on small babool trees 15 feet or so from the ground. The eggs or young were almost invariably four, and the former varied much. One nest contained three highly-coloured ones and a nearly pure white one which might have passed for a miniature *H. indus*. Another nest contained two fresh eggs which were exactly like small eggs of *A. nisus*.

J. DAVIDSON.

SHOLAPUR DISTRICT,
September 2nd, 1879.

SIR,

I WROTE to STRAY FEATHERS about the way *E. cæruleus* has invaded the district, and its breeding in the hot weather, and again in the rains (June and July); but now I got a nest yesterday (September 21st) with a fresh egg, evidently the produce of a pair whose nest I knew, and whose young were sitting on an adjoining tree barely able to take care of themselves.

Similarly, I found the Common Eagle of the district, identified by me as *A. vindhiana* breeding in April (well-grown young), and now again they have fresh eggs. Formerly they bred as a rule late in November, and I have noticed many changes in the times of breeding, and probably the seasons really vary enormously, and if any one stayed in one station for a great length of time he would find this out.

J. Davidson.

Dear Sir,

In your book on eggs you say that little is known of the breeding of the Black-winged Kite.

Now about Poona they are very common, and I give you the dates of the nests I have taken this year, since I began collecting :—

February 2nd	...	4 young.
June 16th	...	4 eggs.
„ 21st	...	4 eggs.
July 1st	...	1 egg.
„ 3rd	...	Nest, but did not get up to it, bird sitting.
„ 14th	...	1 egg.
„ 19th	...	4 eggs out of nest. I took one on the 1st.
„ 29th	...	Young.
August 17th	...	2 nests, 4 eggs each.
September 4th	...	3 eggs.
October 10th	...	5 eggs.

The nests were rather loosely made, lined with dry grass and placed generally on a thin branch, from 12 to 20 feet from the ground.

They were nearly all on babul trees, two or three on another thorny tree in thin jungle, and one on a small mangoe tree. In most cases the eggs could be seen through the nest from below.

If I have given any new information about the bird, I shall be glad to hear it, and shall be happy to send you the eggs if you should wish for them.

J. H. Yule, *Captain*,
2-11*th Regiment.*

Poona,
October 11*th*, 1879.

Dear Sir,

Your zeal and industry have just taught me a lesson. I have had for ten years the skin of an Owl from Mt. Sinai, which I could not identify, and which I felt sure was

undescribed. Some of our friends were sure it was *Otus abyssinicus*, of which there is not a specimen in England. At length I compared my bird with the description, and found it was perfectly distinct. By Mr. Gurney's advice I exhibited it the other day at the Zoological Society, and proposed to name it *Syrnium sinaiticum*.

The next morning Mr. Gurney directed my attention to STRAY FEATHERS, 1878, p. 316, which he had just come across, and which, I must confess, having only recently received I had not read, and there I find an exact and admirable description of my bird, under the name of *Asio butleri*, under which name it of course now stands. Only it is decidedly (teste Sharpe) a *Syrnium*, and must be quoted as *Syrnium butleri*, (Hume). You have thus very properly punished me for my ten years' delay.

May I add a note on your remarks on my *Caprimulgus tamaricis*, of which you have oracularly pronounced 'Delenda est'? But on what grounds? It is unfortunate that our friend Brooks should have based his and your decision, not on the type, which he might have seen, and I believe did see, in my collection, or on the other type B. Mus., where there is also a second specimen obtained by Mr. Jesse in Abyssinia, but on the plate in the '*Ibis*.' Had he compared any of the specimens with *C. asiaticus* he would not have come to the conclusion he has. It is difficult, nay impossible, as we all know, to represent accurately in a cut the delicate markings of the plumage of this family. But the species is as distinct in character of markings from *C. asiaticus*, as *C. ægyptius* is from *C. ruficollis*. In fact they are parallel pairs of species in these differences as well as in their identity of measurements. I must, therefore, demur to your editorial sentence, pronounced without the presence of the defendant at your bar.

H. B. TRISTRAM.

COLLEGE, DURHAM,
14*th June* 1879.

[Doubtless *Mr. Tristram* is correct.—*Ed.*]

SIR,

THE note of Mr. Gurney in your last (August) No. regarding the (supposed) difference in the irides of *Otogyps calvus*, induces me to relate that a friend of mine some years ago had a pair of White-necked Stork (*Dissura episcopa*, Bodd.), the irides in one of which, I think the male bird, were of the normal reddish color, while in the other they were of a very pale, almost whitish, hue. The owner was inclined to

suspect that it was a sexual difference, but I thought the pale-colored irides to be simply abnormal.

H. JAMES RAINEY.

SIR,

WITH regard to what Mr. Cripps says in STRAY FEATHERS, Vol. VII., page 305, on the extraordinary habit of *Porphyrio poliocephalus* laying up in holes in the ground, it may interest your readers to hear that I once captured a Water Hen, (*Gallinula chloropus*,) in a similar retreat.

I was out shooting on the Ganges near Allahabad, in a punt, and was within a few yards of the right bank, which was here composed of stiff clay interspersed with large nodular masses of kankar, a "kankar bank" in fact, when I saw a bird just peep out of a moderately-large hole and then retire. I landed as soon as I could, and thrusting my arm into the hole, which was about 2′ 6″ deep, pulled out a lively Water Hen which fought tooth and nail.

The direct cause of this individual taking to this subterraneous mode of life, was doubtless want of suitable cover in a place where it found abundance of suitable food (its stomach was full of small shells,) but bearing in mind the affinity of this group to the *Struthionidæ*, an extinct member of which was supposed to be troglodyte in its habits, I would suggest that this habit, if it receives further confirmation, is a reversion to an ancestral trait in some extinct progenitor of the family who thus habitually dwelt.

CALCUTTA,
25th February 1879.

J. COCKBURN.

SIR,

OUR Lucknow Museum has a specimen of the Pink-headed Duck, which Dr. Bonavia probably purchased in the Lucknow market. I have not myself been able to obtain a specimen; but in December last, I saw two of them on a jheel at Rahimabad, about 25 miles from Lucknow. I watched them through my binoculars for a considerable time, but failed to get a shot at them.

GEO. REID.

SIR,

WITH reference to the assertion made by the late Colonel Tickell, that he was able to sex eggs, I send you an extract from the "Leisure Hour," for February 1879, p. 80, which shews that such a feat is not only possible, but that the sexing of eggs is habitually practised by some poultry raisers:—

"*How to select Eggs for Sitting.*—In a recently published number of the 'Transactions of the Natural History Society of Northumberland and Durham,' Dr. Embleton, in an interesting paper on Eggs, makes the following important statement. He says: "My nephew, Mr. H. C. Embleton, informs me that if you hold the round end of an egg to a lighted candle in a dark room you will observe the air-cavity to be sometimes exactly at the end, and sometimes on one side of the end. Those eggs that have the air-cavity at the end are female, and those with the air-cavity on the side are male eggs. I gathered this information from the 'Journal of Horticulture' about two years ago. We always act on this information in selecting our eggs for sitting, and seldom find it to fail."

EUGENE W. OATES.

PEGU,
18*th March* 1879.

[This is exactly what our henwives always averred at home, and carefully watching the results of many sittings, I came to the conclusion that the rule did *not* hold good.—ED.]

(*Reprint.*)

TO THE EDITOR OF THE ASIAN.

DEAR SIR,—At least six species of true Geese visit different parts of India during the cold season.

These are—

1. The Grey Lag.
2. The White-fronted Goose.
3. The Dwarf Goose.
4. The Bean Goose.
5. The Pink-footed Goose.
6. The Barred-headed Goose.

Of course the "*Nukhta*," though often *called* the Black-backed *Goose*, is not included in these, it not being a Goose at all, but a true Tree *Duck*, which it is best to follow Southern Indian sportsmen, in designating "The Comb Duck," the other name unfortunately adopted by Jerdon being calculated to convey an erroneous idea of the real affinities of the species.

To return. Of these six species of true Geese, several are undoubtedly very rare. I myself have never shot either the Dwarf or the Bean Goose. Of the former I have specimens procured by Dr. Bonavia near Lucknow, and by Mr. N. W. Chill near Sultanpur, in the Goorgaon District, some thirty miles south of Delhi. Of the Bean Goose I have never succeeded in securing an Indian-killed specimen, though Mr. Gould had a specimen sent him from somewhere in the Deccan,

and one or two other specimens have been recorded as obtained in Upper India.

The White-fronted Goose is a rather rare visitant, I know, to Oudh, and probably other parts of Upper India and Assam, and is not very uncommon on the rivers of the North-West Punjab.

The Pink-footed Goose I have shot, but only once, and then in the Etawah District. Colonel Irby obtained specimens near Lucknow, and Colonel Graham tells me that he believes it to be not uncommon in Assam.

Both the Grey Lag and the Barred-headed Goose are common over large portions of the Empire. Even of these last two species, the distribution in India is very imperfectly known, and in preparing the third volume of the GAME BIRDS I find myself quite unable to state, as regards many parts of the country which I have not myself visited, whether they are or are not frequented by these species.

As regards the other rarer species scarcely anything is known of their distribution in India, and this is probably due to the fact that they are not readily distinguished by sportsmen.

To facilitate the identification of these several species of Geese, I append below a table which will enable any sportsman, I believe, to distinguish the species of any one of these six Geese which he may shoot, and I would urge all who have the opportunity during this next cold season to shoot all the different kinds of Geese they can, make sure of their species, and kindly let me know what species they have obtained, and in what districts.

But beyond this I would ask all those sportsmen who are fortunate enough to procure specimens of either the Pink-footed or the Bean Goose to preserve the skins and forward them to me. The reason is, that under the general name of Bean Goose at least three, and perhaps four, well-marked sub-species are included, differing in size and tone of color, size and shape of bill, and amount and distribution of black and yellow on the bill, namely, *arvensis*, *segetum*, *obscurus*, *middendorffi*,—and we are still quite in the dark as to which of these it is, and whether more than one of them occurs in India, and nothing but the examination of skins by a competent ornithologist can decide this point.

In the same way there are, *I suspect*, two separable species included under the title of the Pink-footed Goose. The two specimens I shot were unfortunately not preserved (it was many years ago I got them), and I have never since succeeded in meeting with other Indian-killed specimens for careful examination.

It is extremely likely that other species of true Geese occur in India, especially in Assam. Skins of any such should of course be preserved, however roughly, for examination.

For instance, according to the *Bengal Sporting Magazine* of April 1836, page 247, four Geese were seen near Nagpore which can hardly have been anything but *Bernicla ruficollis*, a true Goose. Length about 20 inches; wing 14·5. Bill and feet black. A patch on each side of the head, and the whole front of the neck and breast deep brick-red to chestnut (these parts paler and more buffy in females), and the rest of the plumage mingled black and white in males, brown and white in females. Similarly there are two or three other species, the occurrence of which I have reason to suspect; and, with the co-operation of sportsmen in different parts of the Empire, we should very soon be able to ascertain, conclusively, not only the exact limits within which the known species occur, but also which other, at present unrecorded, species visit us.

TABLE.

Name.	Nail of Bill	Rest of Bill.	Legs and Feet.	Wing.	Bill at front from margin of feathers to tip of nail.
The Grey Lag. (*A. cinereus.*)	White or whitish.	Varies from creamy white, through fleshy pink, to dingy livid purplish red.	Same as bill	15·75 to 19·0	2·4 to 2·8
The White-fronted Goose. (*A. albifrons.*)	White or yellowish white.	Livid fleshy to yellow, in either case with more or less of an orange tinge.	Bright orange, sometimes tinged reddish.	15·0 to 17·0	1·7 to 1·9
The Dwarf Goose (*A. erythropus.*)	Whitish ...	Reddish to livid fleshy; (? at times yellow, varying to orange.)	Fleshy red or pink; (? varying to orange.)	13·0 to 14·1	1·3
The Bean Goose. (*A. segetum* and allied subspecies.)	Black ...	Black, with orange, or orange-yellow in varying proportions.	From yellow to orange.	16·5 to 19·5	2·0 to 2·45
The Pink-footed Goose. (*A. brachyrhynchus.*)	Black ...	Black, with pink, varying to red with a somewhat orange tinge.	Pink or orange pink, varying to fleshy red.	15·5 to 17·5	1·65 to 1·85
The Barred-headed Goose. (*A. indicus.*)	Blackish or black.	Orange, greenish towards nostrils.	Bright orange.	16·0 to 19·0	1·8 to 2·1

Allan Hume.

STRAY FEATHERS.

Vol. VIII. DECEMBER 1879. No. 6.

Notes on Falco atriceps and Falco peregrinator.

By J. H. Gurney.

Mr. Hume has kindly sent me for examination the type specimen of *Falco atriceps*. It is a male shot at Kotgurh near Simla in July 1868, and is fully adult, unless the rufous bases to many feathers of the nape are, as I suspect, the remains of immature plumage. With this exception, the entire upper surface and sides of the head, and also the neck, are of a dark blackish brown, except on the sides of the neck, where the fulvous white of the breast extends into a double indentation, of which the anterior and larger portion runs in behind the blackish brown ear-coverts and adjacent confluent moustache, and the second and posterior portion slightly indents the blackish plumage of the neck further back, so that there is about half an inch of dark plumage between the apex of the two indentations; the scapulars and interscapulars are slaty grey, crossed transversely with slaty black, these transverse bars being darker and also occupying a larger portion of the feather on the upper part of the mantle than on the lower. This remark also holds good as regards the wing-coverts, and in the feathers of those parts adjacent to the edge of the wing, the dark tint (which is brownish-black) prevails to the exclusion of the paler slate color; the tertials resemble the lower scapulars, but are mottled with whitish along the edge of their inner webs; the primaries and secondaries are dark blackish brown, with transverse bars of greyish or brownish white, mottled with brown on their inner webs; the lower back and upper tail-coverts resemble the lower scapulars, but on the coverts the transverse dark bars are darker and more distinct than on the lower back; the tail is slaty grey on the basal, and slaty black on the apical half, the latter hue increasing in intensity as the tip of the tail is approached; all the rectrices have, however, a slight whitish tip, except the central pair; the tail is

crossed by darker bars of slaty black, increasing in width as they approach the tip, the sub-terminal one adjoining the whitish tip being about twice as broad as the one that precedes it, and about four times the breadth of those near the base: the number of transverse bars on the central rectrices is eleven.

The under surface, from the chin to about the lower edge of the sternum, is fulvous white, increasing in intensity as it extends downwards, the chin being almost pure white, and the opposite or sternal extremity of this fulvous plastion being a dull rufous. This plastion is immaculate, except a very few small black spots towards its lower boundary, and it should be added that it extends about two inches lower at the centre of the breast than it does at the sides. All the parts below the fulvous plastion, the flanks, tibiæ, abdomen and crissum, are marked with narrow dark bars, between which are pale intervals of fulvous tinged with grey, the fulvous tint predominating along the centre of the abdomen and crissum, as well as on the inner side and front of the thighs, and the grey hue prevailing elsewhere, and not only modifying the complexion of the interspaces, but also affecting the transverse bars and rendering them slate colored rather than black. The under wing-coverts and axillaries are pale fawn color, crossed with dark brown, and in places very slightly tinged with grey.

I have taken the following measurements from this specimen:—

Wing	...	...	11·3
Tarsus	...	...	1·7
Mid-toe, S. W.		...	2·

I have only seen two specimens (both of which are adult) that seem to me to be indubitably identical with the type of *F. atriceps*. One of these is a male from the Jullunder district of the Punjab, which is preserved in the Norwich Museum, and the other is a female, presented to the British Museum by Captain Pinwill who obtained it at Simla, and briefly referred to in the article on *Falco peregrinator* in Captain Legge's work on the Birds of Ceylon.

The specimen from the Punjab in the Norwich Museum appears to me only to differ from the type of *F. atriceps* in the following particulars:—The fulvous white on the sides of the neck extends on to the lower hinder portion of the ear-coverts, being there co-mingled with black on the same feathers, but with the fulvous white predominating; the feathers of the nape are not rufous at the base; the slate color of the wing-coverts, scapulars and back, is darker, and in consequence, the blackish transverse bars, though perceptible, are less dis-

tinctly visible; the tail is also darker as regards the pale interspaces between the blackish cross bars; the breast is more rufous, especially the upper portion of it, and the thighs and flanks are more decidedly tinged with slate color, though not to the exclusion of a slight tint of rufous. This bird measures :—

Wing	...	...	10·9
Tarsus	...	...	1·9
Mid-toe, S. W.		...	1·9

Captain Pinwill's Simla female resembles the Punjab specimen at Norwich in the distribution of the fulvous white on the sides of the head, the blackish brown on that part being less confluent than in the type of *F. atriceps*, but it agrees with the latter in having rufous bases to the feathers of the nape, and, indeed, scarcely differs from it in coloring, except as above, and excepting also in the greyish interspaces between the dark bars on the flanks and thighs, especially on the latter, being slightly more tinged with rufous, and those on the abdomen and crissum decidedly so. This specimen measures :—

Wing	...	...	13·0
Tarsus	...	...	1·9
Mid-toe, S. W. ...		...	2·2

I am indebted to the kindness of Captain Legge for the loan of an adult pair of *F. peregrinator* from Ceylon which I have carefully compared with the type specimen of *F. atriceps*, with the following results :—

The Ceylon male, which was shot at Sakka Rock, 13th May 1876, has the crown of the head, the dark portion of the cheeks, ear-coverts, and moustache, and also the nape, a decided black, without the slight tinge of brown, which is perceptible in those parts in the type of *F. atriceps*; there are no rufous bases to the feathers of the nape; the lower posterior portion of the ear-coverts is of a creamy white like the throat, and the feathers immediately behind and adjoining that portion of the ear-coverts are mostly cream colored also, but some of them are variegated with black, and a very few of them are wholly black; between the ear-coverts and the carpal joint the posterior indentation of fulvous white is very much more developed than in the type of *F. atriceps*, extending from the similarly colored upper breast for about an inch in the direction of the nape; the dark portion of the wing-coverts are black without the tinge of brown which characterizes them near the edge of the wing, in the type of *F. atriceps*, and they are only edged with slate color and not barred with it, though such a barring

appears indistinctly in the tertials and also the lower scapulars; the primaries and secondaries are, as in *F. atriceps*, except that the spaces between the transverse bars on the inner webs are decidedly more rufous especially on the primaries; the interscapular region is of a blacker slate color than in *F. atriceps*, and the transverse dark bars on the feathers of that part are in consequence less conspicuous; the lower back and upper tail-coverts closely resemble those of *F. atriceps*, but the tail is darker, and, except at the base and on the inner web of the lateral rectrices, very much so, the exposed portion of the rectrices being dark blackish brown on their apical moiety, and the transverse bars, which are indistinct in the middle portion of the tail, becoming undistinguishable towards its tip, which is narrow and rufous on the lateral rectrices and apparently worn off from the central pair; the upper breast resembles that of the type of *F. atriceps*, and the under wing-coverts and axillaries are crossed with dark narrow bars as in *F. atriceps*, but these bars are somewhat less regular, and the spaces between them are decidedly rufous, instead of a pale fawn color; the remaining under parts are a rich rufous, excepting that most of the abdominal feathers have paler centres; this portion of the plumage is entirely immaculate, with the exception of a single blackish brown feather on the lower breast, (probably a relic of immaturity,) of about seven small and rather ill-defined transverse blackish marks averaging about a quarter of an inch in length on either flank, and a few similar, but more indistinct bars, across the lateral feathers of the under tail-coverts. This specimen measures:—

Wing	...	11·6
Tarsus	...	1·8
Mid-toe, S. W.	...	1·9

The female specimen from Ceylon, which was shot on Pigeon Island on the 6th October 1874, closely resembles the male, but the transverse bars on the lower scapulars are more distinct, and the pale portions of the upper tail-coverts are a lighter grey than either in the Ceylon male or in the type of *F. atriceps*. The tail is also somewhat less dark than in the male, and shows ten black transverse bars, the last of which is indistinct and subterminal, and is succeeded on all the rectrices by a white tip strongly tinged with rufous, and broader than the corresponding tip in the male; the under surface is of a richer rufous than in the male, and the centres of the abdominal feathers, though lighter than their tips, are much less pale than in the male. The dark bars on the under wing-

coverts are somewhat more strongly marked than in the male bird; the breast is immaculate, but the flanks and under tail-coverts are slightly barred as in the male, and there are small irregular dark spots on a few of the lower abdominal feathers; some similar spots are observable on the outer side of the thighs, and on that of the right thigh there is a single remarkable feather, very different from those of the surrounding plumage; it has a dark slaty shaft mark, and five narrow transverse bars of a pale slate color, the interspaces being rufous, tinted with grey, and the tip pure rufous; two or three adjacent feathers are somewhat similarly marked, but not to the same extent.

The following are the measurements which I have taken from this female:—

Wing	...	12·8
Tarsus	...	1·9
Mid-toe, S. W.	...	2·1

I have seen no fully adult South Indian example of *Falco peregrinator*, but a presumed female, obtained by Mr. Hodgson in Nepal, and preserved in the British Museum, bears a close resemblance to Captain Legge's Ceylon female, and I think must be referred to the same race of *F. peregrinator*. This specimen has the abdominal region of a rich rufous, even deeper than is the case in the Ceylon female; the bars on the flanks and thighs are small and not numerous, and are scarcely at all tinged with grey. This specimen appears, notwithstanding its immaculate breast, to be barely adult, as it was killed whilst moulting, and several of the old feathers remaining in the mantle are brown, and as it seems to me, differ more from the new feathers than is to be accounted for merely by use and fading; the bases of the feathers on the nape are also rufous; the newly-acquired feathers are blackish brown on the wing-coverts, scapulars and interscapulars; on the lower back and upper tail-coverts they are grey, barred transversely towards the base with dark slate color.

This specimen measures:—

Wing	...	12·45
Tarsus	...	1·9
Mid-toe, S. W.	...	2·3

Mr. Hume has kindly lent me a female killed by Mr. W. E. Brooks near Allahabad in March 1865, which also resembles the Ceylon female, but with the following differences:—The crown of the head and nape are slightly tinged with brown as in the type of *F. atriceps*, and a few of the feathers of the nape retain the rufous base; the dark transverse bars on the

interscapulars, scapulars, wing-coverts, and tertials are much more distinctly apparent than in the Ceylon female, though less so than in the type of *F. atriceps*; the tail is decidedly paler than in the Ceylon bird, and eleven dark cross bars are visible on the central rectrices, the last of which, adjoining the fulvous tip, is, in this instance, not broader than the two which immediately precede it. The rufous of the abdomen is somewhat richer and darker than in the Ceylon bird, but is more interrupted with dark markings which assume the form of transverse bars on the flanks, the lower abdomen, the outer sides of the thighs and the crissum, but of spots or points, on the upper abdominal region; on the thighs and the crissum these transverse bars are decidedly tinged with slaty grey, and the barred tibial feathers bear a considerable resemblance to the isolated barred feather on the thigh of the Ceylon female.

The following are the measurements of this specimen :—

Wing	...	13·1
Tarsus	...	1·9
Mid-toe S. W.	...	2·2

Two other adult females which I have seen appear to me to exhibit a phase of plumage immediate between the Ceylon specimens of *F. peregrinator* and the type of *F. atriceps*. One of these, which was obtained by the late Mr. A. Anderson in November 1870, in the Futtehgurh district, is in the possession of Mr. Hancock, and I have unfortunately been prevented by that gentleman's absence from home, from now comparing it with the type of *F. atriceps;* but I was indebted to his kindness for an opportunity of examining it a few years since, and I then compared it with the Punjab male of *F. atriceps* in the Norwich Museum, and made a note that it only differed from that specimen as regards coloration, in having hardly any tint of grey on the under parts, and in those parts being more distinctly marked with transverse striations; also in having the dark transverse bars on the axillaries broader, and the spaces between them tinged with bright fawn instead of with grey, as well as in the greater breadth of the darker transverse markings on the lower back and upper tail-coverts.

This fine specimen measures as under :—

Wing	...	13·4
Tarsus	...	2·0
Mid-toe, S. W.	...	2·4

The other of these two females was obtained at Dharmsala in April 1870, I believe by Mr. W. E. Brooks, and is in the collection of Canon Tristram, to whose kindness I am indebted

for the loan of it. In this specimen the crown and sides of the head, the nape, neck, and throat, closely resemble the corresponding parts in the type of *F. atriceps*, but all the wing-coverts, excepting those near the edge of the wing, the scapulars, interscapulars, and tertials are much darker, more tinged with brown, and show the transverse bars less distinctly; the lower back, upper tail-coverts, tail, and secondary wing feathers, are very similar in the two specimens, but the interspaces between the bars on the inner webs of the primaries are much more rufous in the Dharmsala bird. The tail exhibits twelve dark transverse bars, of which the last is the broadest, and is succeeded by a narrow fulvous tip. On the under surface, the upper breast only differs from the type of *F. atriceps* in the presence of fine dark shaft marks on the feathers of its lower portion; from thence downwards the ground color of the under parts is decidedly more rufous than in that specimen, and the central part of the lower breast and abdomen are more profusely spotted; the under wing-coverts, axillaries, flanks, thighs, lower abdomen, and crissum are transversely barred as in the type of *F. atriceps*, but on all these parts the interspaces between the bars are much more rufous, and on the under wing-coverts, thighs, and crissum, the transverse bars are more strongly marked.

The following are the measurements which I have taken from this example :—

Wing	...	...	12·95
Tarsus	...	...	2·
Mid-toe S. W.		...	1·95

The inference which I am disposed to draw from the above data is, that *Falco atriceps* is a geographical race of *Falco peregrinator*, chiefly distinguishable by its abundant transverse markings, lack of rufous coloring and prevalent grey tints on the abdominal and tibial plumage,* and thus differing conspicuously from specimens like those I have examined from Ceylon, in which these parts are decidedly rufous and almost immaculate; but that the two phases of plumage are so much connected by the occurrence of individuals of intermediate and ambiguous coloration, that they do not admit of the races being defined with sufficient precision to merit the position of separate and distinct species. I may add that Sundevall's type specimen of *Falco peregrinator* appears to me, from his description, to have been a specimen of this intermediate character as to markings and coloration. The typical *F. atriceps* appears to be

* Jerdon apparently refers to such a specimen, a female from the N. W. Himalayas, in the Museum of the Asiatic Society—*vide* Birds of India, Vol. I, p. 26.

limited to North-Western and Northern India, and towards its eastern limit to inosculate with the race which has the under parts more rufous and more nearly immaculate, and of which the range extends from Nepal to Ceylon. I do not recollect having ever seen an adult specimen from Burmah, but by the kindness of the late Lord Tweeddale I had an opportunity, two years since, of examining an immature bird in change, obtained at Tounghoo, and recorded by him in a note to Blyth's Catalogue published in the Journal of the Asiatic Society of Bengal for 1872, part 2, p. 59.

This specimen bore a strong resemblance (as indeed is frequently the case with immature examples of *F. peregrinator*), to the immature dress of *F. melanogenys*, but I did not take down any detailed memoranda as to its markings or coloration. The materials at my disposal do not enable me to hazard an opinion as to whether any perceptible difference exists between *F. atriceps* and the other races of *F. peregrinator* in their immature dress, but I have noted the following particulars of specimens in that plumage which I have recently examined.

Mr. Hume has been good enough to lend me a young bird marked "Madras, March 1877," which, from its small size, is evidently a male—measuring as under:—

Wing	...	... 11·2
Tarsus	...	... 1·9
Mid-toe, S. W.		... 1·9

I suppose this to have been a nestling, perhaps a late hatched one, of 1876, and as the state of the skin shows some indication of its having been kept in confinement, I attribute to that cause the circumstance of its nestling plumage being apparently less faded or worn than is the case in any other specimen which I have examined. In this bird the cheeks, anterior portion of the ear-coverts, and moustache, are black, as also is the crown of the head, with the exception of slight rufous edgings to the central feathers; the feathers on the nape are similar, but broadly and conspicuously bordered with rufous; the upper interscapular feathers are blackish brown, with scarcely any perceptible rufous edging; the remainder of the mantle is similar, but with less of a blackish tint, and with more decided rufous edgings which are broadest on the lower back and upper tail-coverts; the quill feathers of the wing are blackish brown, tipped with rufous, and transversely barred with the same on the inner web; the tail is dark brown, with the rectrices showing on their outer webs from six to eight rufescent spots, which on the inner webs assume the form of transverse bars, but these bars are much less distinct,

and also less rufescent on the central than on the lateral rectrices; the tips of all the tail feathers are rufous, paling into white at the extreme points; the chin and throat are an immaculate fulvous white; the hinder part of the ear-coverts are fulvous mingled with black; the sides of the neck are fulvous with well-marked black shaft marks; on the lower breast, flanks, abdomen, and outer sides of the thighs the portion of the feather not occupied by the black shaft mark is a rich rufous, the shaft marks being broader on the flanks than elsewhere; the lower abdomen is an immaculate fulvous. The crissum fulvous, transversely barred with blackish brown; the axillaries are blackish brown, with about six fulvous spots on each web, and the under wing-coverts are transversely, but irregularly, barred with dark brown and different shades of fulvous.

I am also indebted to the kindness of Mr. Hume for the loan of two other immature Madras specimens; one of these, apparently a female, was obtained in the month of November. It measures:—

Wing	...	12·9
Tarsus	...	2.
Mid-toe S. W.	...	2·1

This bird closely resembles the young Madras male, but though probably actually younger, has apparently in consequence of being at large, and therefore more exposed to the action of the elements, receded somewhat from the nestling plumage which (if my view is correct) the young Madras male retains almost in perfection. Thus in the present specimen the brown of the upper parts is much less tinged with black than in the preceding one; the nape is less conspicuously rufescent, and the rufous edgings to the feathers of the mantle have disappeared almost everywhere, except on the lower back and upper tail-coverts; the rufescent markings on the lateral rectrices are small and less rufous than in the young male, and on the central pair the corresponding markings are of a greyish brown, and very indistinct; the lower parts scarcely differ from the young male, except in all the tints being slightly duller, and in the lower abdomen being rufous with dark brown shaft marks to the feathers.

The Norwich Museum possesses a very similar female from Northern India, but with rufous spots on the inner webs of the tertials, and indistinct greyish spots on the outer webs of those feathers; also with six rows of rufous spots on both webs of all the rectrices, but more distinctly marked on the lateral feathers than on the central pair. In this specimen

only some feathers of the upper tail-coverts are edged with rufous, and those but slightly, but some of these feathers show from two to three rufescent spots on each web; the under surface is less richly tinged with rufous than in either of the Madras birds, and some of the abdominal feathers show two brown transverse bars across both webs in addition to the shaft mark.

In the same collection is another female, also from Northern India, where it was obtained by Captain Marshall in a state of plumage almost precisely similar to the last-named example, but with scarcely any indication of spots on the outer webs of the tertials, and with no transverse bars on the abdomen. These two females respectively measure:—

Wing	...	13·1 to 13·2
Tarsus	...	1·9 to 1·9
Mid-toe S. W.	...	2·1 to 2·2

The third Madras specimen, lent to me by Mr. Hume, is marked as a female, but has a shorter wing than is usual in that sex, its measurement being:—

Wing	...	12·1
Tarsus	...	1·9
Mid-toe S. W.	...	2·1

The upper surface of this specimen much resembles that of Mr. Hume's second Madras bird, but the brown tints of the mantle are somewhat more faded; some of the rufous edgings of the nestling plumage remain to a slight extent on the wing-coverts, and the rufous markings on the tail are decidedly more distinct; but the under surface indicates, if I mistake not, a nearer approach to maturity than exists in either of the other two Madras specimens. This consists in the contraction in width of the longitudinal dark shaft marks on the breast and abdomen, and is especially noticeable on the basal portion of the shaft mark, tending to reduce the apical moiety of the mark to a guttate spot, particularly, but by no means exclusively, on the upper breast, where a few new feathers are also visible, more rufous than their predecessors, and entirely whole colored and spotless; a few new feathers of a similar character may likewise be detected on the thighs.

A male, closely resembling the last-mentioned specimen and with similarly contracted sternal and abdominal shaft marks, but without any assumption of new feathers, is preserved in the Norwich Museum. In this specimen the tail is a whole colored dark brown, excepting a rufous tip and slight rufous markings

on the inner webs of the lateral rectrices. It is from Northern India, and measures :—

Wing ...	... 11·4
Tarsus ...	... 1·8
Mid-toe S. W.	... 2·0

The Norwich Museum possesses another male, unfortunately with no more exact locality attached to it than simply "India," which exactly corresponds with the male just mentioned, except that one new feather on the breast, rufous, and with no mark beyond the actual shaft of the feather, and also the coloration of the tail and upper tail-coverts indicates a slight further progress towards maturity. In the tail-coverts also, one grey adult feather is visible, and the remaining feathers of the immature dress in that part are alternately banded with transverse bars of dark and light brown, the latter in places slightly tinged with grey; the tail is tipped with rufous; the lateral rectrices have spots on both webs, rufescent towards the base, especially on the inner webs, but becoming greyish as they approach the tip; the central rectrices show indistinct alternate bars of light and dark greyish brown, the grey color prevailing, to the exclusion of the lighter, towards the tip of the tail, and the entire markings foreshadowing the more defined transverse bars on the tail of the adult bird.

The dimensions of this specimen agree exactly with those of the preceding one.

Very similar to the two last mentioned specimens are a male and female from Nepal which are preserved in the British Museum, but the transverse bars on the central rectrices are more distinctly visible: ten on those of the male, and nine on those of the female, increasing in breadth towards the tip of the tail in both instances. These birds measure as under :—

	Male.	*Female.*
Wing	11·4	13·7
Tarsus	1·7	2·0
Mid-toe S. W. ...	1·8	2·1

In all the five last-named specimens the contraction of the longitudinal marking on the under surface has made very perceptible progress, especially on the upper breast, but in others the adult plumage appears to be in course of attainment without this preliminary, and whilst the sternal and abdominal shaft marks still retain their original breadth, or very nearly so, I have seen three specimens which appear to me to be illustrative of this fact; the first of these is a female belonging to Mr. Hume, which was shot near Etawah in Northern India on the 2nd January 1869. In this specimen the sternal and abdominal

shaft marks are not more contracted than in the young Madras female, killed in November, to which I have already referred; but its greater progress towards maturity is marked by the appearance of numerous new rufous feathers on the breast, where they are immaculate, and on the thighs, where some of them show minute shaft marks, also by new feathers of the adult grey tint, banded with transverse bars of a darker grey, on the scapulars, and by similar feathers (but in some instances with a rufous tinge on the tips and pale interspaces) on the upper tail-coverts; the older feathers of the upper tail-coverts, and those of the lower back, are dark brown, edged and transversely barred with pale rufous brown. A similar barring is perceptible on the outer webs of the tertials; on the wing-coverts the immature fulvous edging to the feathers for the most part remains; the lateral rectrices are spotted with rufous on both webs, the spots on the inner web assuming the form of bars. On the central pair of rectrices the basal moiety is transversely barred with greyish fulvous, which becomes indistinct on the inner webs of the other portion of these feathers, whilst on the outer web it is represented by partially bar-shaped fulvous spots, the tips of all the rectrices being also a rufescent fulvous.

The following are the measurements of this specimen:—

Wing	...	12·9
Tarsus	...	2·0
Mid-toe S. W.	...	2·1

The Norwich Museum contains a female in a very similar stage of plumage to that last mentioned, which was shot by the late Mr. A. Anderson in the Futtehgurh District, on 25th January 1871, and was mentioned by that gentleman in the P. Z. S. for 1871, at page 678. This specimen shows, however, a larger proportion of new feathers on the upper breast than the preceding one, and on most of these feathers an extremely fine and inconspicuous dark shaft mark is perceptible; there are also no brownish tips to the new feathers of the tail-coverts, and the centre rectrices are less distinctly barred in their basal portion.

This female is rather a short winged one, measuring as under:—

Wing	...	12·6
Tarsus	...	1·9
Mid-toe S. W.	...	2·2

The absence of all cross bars from the new adult feathers on the under parts in the two Falcons last referred to, probably indicates that they would have resembled, when in full plumage, Captain Legge's Ceylon specimens, whilst the abundant presence of such bars in the next example to which I have to

allude, seems to show that this bird would have developed into a plumage more or less closely resembling *F. atriceps* on those parts, though it does not possess the confluent moustache which the type specimen of *F. atriceps* exhibits.

This example has also been kindly lent to me by Mr. Hume. It is a female obtained on the hills to the north of Mussooree, but the ticket attached to it unfortunately does not record the month in which it was obtained. On the upper surface it much resembles the young Etawah female just described, but the new grey adult feathers have much blacker transverse bars, and these blackish bars are also decidedly broader than in the Etawah specimen.

On the under surface, many of the old feathers, showing the longitudinal dark shaft marks, remain both on the upper breast and on the central portion of the lower breast; on the former they appear to have assumed a somewhat contracted aspect, but on the lower breast to have retained their original breadth; the new feathers on the upper breast are more rufous than the old ones, (the latter having probably faded), and the shaft marks are very much more slender and inconspicuous, being limited to the actual shaft, which is rufous in some of the feathers and blackish brown in the others. Across the lower edge of the upper breast, or region of the crop, there is an irregular double row of blackish brown spots, one on each side of the new rufous feathers, for the most part oval towards the centre of the row, and broad and somewhat crescentic towards its sides; on the central portion of the lower breast new feathers are appearing, with from one to three dark narrow bars on each feather, which contrast curiously with the longitudinal markings of the immature plumage that remain on the adjacent old feathers; on the abdomen and crissum similar cross bars prevail to the almost entire exclusion of the immature plumage; the thighs are partially clad with the old dress, but in great measure with the new, which exhibits three slaty black cross bars on each feather with rufescent fulvous interspaces.

The following are the measurements of this example:—

Wing	...	...	12·7
Tarsus	...	...	1·9
Mid-toe, S. W.		...	2·0

It would seem, therefore, that both the barred phase of plumage on the under parts, which is characteristic of *F. atriceps*, and the nearly immaculate aspect of these parts which is remarkable in some specimens of *F. peregrinator* though not, according to Sundevall's description, in the type, are assumed (at least in some instances) by a direct moult from the nestling

plumage, but that in the immature as in the adult birds, there is much individual variation, the limits of which it would be difficult to define, and probably impossible to formulate by rules that would apply accurately in every case.

Possibly opportunities may hereafter occur of bringing up young birds from the nest, and of thus ascertaining to what extent the peculiarities which distinguish the different adult phases of plumage in these Falcons are hereditary and constant, and to this point I would venture to solicit the attention of Indian Ornithologists.

P.S.—Since writing the above, I have had an opportunity of consulting the late Dr. Jerdon's "Illustrations of Indian Ornithology," published at Madras in 1847, and also the late Colonel Tickell's M.S. "Indian Ornithology," presented by the author to the Zoological Society.

Dr. Jerdon figures two specimens of *F. peregrinator*, an immature male and an adult female, the latter closely resembling on the cheeks and under parts Mr. Hume's female shot by Mr. Brooks near Allahabad in March 1865, to which I have already referred. Respecting this specimen, Dr. Jerdon writes as follows:—"The present figure was taken from a living trained female in my possession that had completed one moult; the subsequent changes consist in the whole of the spots on the lower surface gradually disappearing, and in the upper plumage becoming lighter and more slaty in hue."

Col. Tickell also figures an immature bird and an adult female, with a note appended, "Date and locality not noted." But I think there can be little doubt that his descriptions and figures were taken from Tenasserim specimens, as they are accompanied by the following remark:—"I have frequently observed it on the seaside, at Amherst (Tenasserim), where two or three pairs breed every cold season, building on high gurjon oil-trees along the shore. In India I have never met with it."

The probable locality of the specimens referred to by Col. Tickell adds to their interest, and I have therefore extracted his description of an adult male and female:—

Male.—Length ...	15″	Wing ...	10¾″	Tail ...	5½″
Female.—Length...	18½″	Wing ...	13½″	Tail ...	6¼″

Color.—*Male and female adult*, iris sepia; bill bluish neutral with black tip; lids, cere and legs yellow; claws black; crown and occiput with nape for a little way ashy black; frontals close to beak, a narrow supercilium, and all the face, throat, and neck white; a black vertical band from the eye down each

side of the neck for nearly half its length is joined by another prolonged from the ramus; the upper parts are full ash; the lower parts from the bottom of the breast are vinous or orange-brown, or deep vinous rusty; the quills are a shade darker than the rest."

The adult female figured by Colonel Tickell much resembles Captain Legge's Ceylon specimens on the under surface; above, the figure is colored a paler slate color, with dark edgings to the lesser wing-coverts and slight dark centres to the scapulars; the moustache is not confluent; the chin, throat, and upper breast is pure white; the rest of the under parts are represented as a rich orange-rufous and entirely immaculate. In accordance with the description, this figure represents the bird with a narrow white frontal line and supercilium, the two being connected and continuous; the younger bird is represented with no white frontal line, but with the supercilium, though the latter is less conspicuous than in the figure of the adult.

I have not observed this white supercilium in any of the specimens which I have examined, neither is it represented in Jerdon's figures nor in those given in Gould's Birds of Asia.

The narrow white frontal line (sometimes tinged with fulvous), I have occasionally met with, notably in both of Captain Legge's Ceylon specimens, and in three of Mr. Hume's females (from Mussooree, Etawah, and Madras), also in the Futtehgurh female belonging to the Norwich Museum, but it is absent in other specimens of both races which have come under my notice, including the type of *F. atriceps*, and the adult male *F. atriceps* from the Punjab in the Norwich Museum.

Should the presence of a white supercilium in Tenasserim specimens be substantiated by future investigation, the fact would, I think, be curious, and would probably indicate the existence of a distinct local race in that country.

Notes on Turdus dissimilis, Blyth.

By Henry Seebohm.

In the tentative list of the Birds of India, which has recently appeared in Stray Feathers, *Turdus dissimilis*, Blyth, appears preceded by a note of interrogation. I cannot find that its occurrence in India has ever been recorded in Stray Feathers. It is probably only a comparatively rare straggler so far west. Most of the specimens obtained have probably been examples of immature birds, and have been supposed to be old males of *T. unicolor*, Gould, a nearly-allied, but perfectly distinct

species, which in all plumages has the flanks brown, whereas in *T. dissimilis* they are in all plumages rich rusty chestnut.

This Thrush is very rare in collections in England. I have never seen more than two fully adult males, one in my own collection from China, and one in the Philadelphia Museum from Japan. Its history is very obscure, and its synonymy much confused. Its nearest allies are *T. chrysolaus*, Temm., *T. obscurus*, Gm., *T. pallidus*, Gm. and *T. unicolor*, Gould, which form, with a few other species, a compact group or subgenus of Thrushes, distinguished by the following characters :— The sexes are different ; the fully adult plumage of the male is alike unspotted above and below ; it is not assumed until after the second moult, so that immature males are frequently found breeding ; and the plumage of the immature male very closely resembles the plumage of the female, and is always spotted on the cheeks, generally more or less distinctly so on the throat, and occasionally obscurely so on the breast, but never on the flanks.

The species under consideration was first discovered by Blyth, and was for some time considered by him as the male of *T. unicolor*, Gould.* In 1847 he described it in the Journ. As. Soc., Bengal (p. 144) as *Turdus dissimilis*. The immature male was described as adult male, and the female said to resemble that of *T. unicolor*, Gould, which is not the case.

In 1850, Bonaparte, in his Conspectus (I., p. 273), described another immature male of this species as *Turdus pelios*, from a skin in the Leyden Museum from Central Asia. Bonaparte's name was, however, transferred to an Abyssinian Thrush, with which it was wrongly identified by some ornithologist, whose faith in the correctness of the Leyden localities was as small as his power of discriminating between allied species.

In 1863 Dr. Jerdon, in his Birds of India, (I, p. 521), added a third synonym to this species by describing the immature male as the female of *Turdulus cardis*, Temm.

In the same year, Dr. Sclater described the immature male and the female in the *Ibis*, (page 196), as a new species *Turdus hortulorum* from Amoy in South China.

In 1870, Cabanis described a female in the Journal für Ornithologie (p. 238), from the Amoor, reclaiming the name of *Turdus pelios*, Bonap., for the species, asserting that the locality of the skin in the Leyden Museum was doubtless correct, and pointing out that the Abyssinian bird, with which it had been wrongly identified, was *Turdus icterorhynchus*, Pr. Würt.

* Surely *Tickell* and not *Gould* is the authority for this name? *Tickell's* name dates from 1833, J. A. S. B., II, 569 *et seq.*, and was unquestionably applied to the very same birds as those obtained in the neighbourhood of Calcutta, which Blyth later named *dissimilis*. Of course *unicolor*, Gould, *may* be something different.—Ed., S. F.

In 1871, Hume described a Thrush from India in the *Ibis* (p. 411), as *Geocichla tricolor*, which appears to me to be a somewhat unusually dark example of the fully adult male of *T. dissimilis*, Blyth. I have in my collection similar unusually dark examples (an approach towards melanism) of *T. fuscatus*, Pall., and *T. iliacus*, Linn.

In 1873, Swinhoe described in the Ann. and Mag. Nat. Hist. (p. 374,) an alleged new species of Thrush from Cheefoo in North China, as *Turdus campbelli*. This skin is now in my collection, and is, in my opinion, the usual plumage of the fully adult male of the species under consideration.

In 1874, Swinhoe added yet another name to the list of synonyms with which this poor bird is burdened. Forgetting that he had already described it in the Annals, he re-described the same skin in the *Ibis* (p. 444), as *Turdus chrysopleurus*.

I have been thus diffuse in detailing the history of the synonymy of this bird, in the hopes that when the ghosts of *T. unicolor*, Gould apud Blyth, *T. pelios*, Bonap., *T. cardis*, Temm. apud Jerdon, *T. hortulorum*, Sclater, *Geocichla tricolor*, Hume, *T. campbelli*, Swinhoe, and *T. chrysopleurus*, Swinhoe, are effectually laid it may henceforth be known only as *Turdus dissimilis*, Blyth.

The species may always be recognised by the deep rich unspotted Indian red, or brilliant rusty chestnut of its axillaries, wing-lining and flanks. The female and immature male bear a superficial resemblance to the female of *T. cardis*, Temm., but in the latter the flanks are always spotted, which is never the case in *T. dissimilis*. From *T. chrysolaus*, Temm., *T. obscurus*, Gm., and *T. pallidus*, Gm., the grey axillaries and under wing-coverts of these species in all plumages is a character which will at a glance distinguish *T. dissimilis*, Blyth, with its rich rusty chestnut axillaries and under wing-coverts in all plumages.

This species has hitherto only been found in North India, Assam, South-East Siberia, China, and Japan.

The fully adult male is figured in the *Ibis* for 1874, Plate XIV, and the female or immature male in the *Ibis* for 1872, Plate VII.

[On a future occasion I shall have to discuss this paper more in detail. At the present it will suffice to say that *Geocichla tricolor* is utterly distinct from *dissimilis*, and that, whatever *Geocichla dissimilis*, apud Seebohm, may be, *G. dissimilis*, Blyth, according to his six types in the Calcutta Museum, seems to me at present to be identical with *G. unicolor*, Tickell.—Ed., S. F.]

Accipiter virgatus.

By R. Bowlder Sharpe.

The following is the description of a Sparrow Hawk forwarded to me by Mr. Hume under the belief that it would be found to constitute a distinct species. Its habitat is Native Sikhim, and Mr. Hume tells me that he has no less than six others, all precisely similar, and all "presumed" males, with the wing about eight inches long, while a "presumed" female has the wing nine inches long.

Adult.—General colour brown, with a bronzy gloss; the feathers of the back somewhat greyish on their edges; head deep slaty grey; sides of face and ear-coverts chocolate brown; the hinder part of the cheeks somewhat washed with tawny where they adjoin the sides of the neck; throat white, with a few ashy blackish feathers forming a streak down the centre; the cheeks also slightly streaked with ashy black; rest of under surface white; the under tail-coverts entirely so; the breast blotched with pale tawny rufous; in the centre feathers these markings being in the form of broad streaks, in some of them broken up into bars, forming an uniform surface on the sides of the upper breast; the whole of the breast, belly, and flanks barred with pale tawny rufous; the bars of about equal width; under wing-coverts yellowish white, spotted with brown, the greater series and axillaries barred across with brown, resembling the inner lining of the quills, which are yellowish white at base, greyish at tip, crossed with distinct broad bars of darker brown; wing-coverts above brown like the back; quills light brown, barred across with darker brown, the bars being six in number on the primaries, not including the dark end of the feather; tail feathers ashy brown, crossed with *four* broad blackish bands, on the outermost feather seven, not counting the dark ending to the feather. Total length, 13·5 inches; culmen, 0·95; wing, 8·35; tail, 6·8; tarsus, 2·3; middle toe, 1·55.

It will be noticed that the sex of this bird is not known for certain, and on this question hangs all the result, for I am of opinion that the bird is not a male at all, but an adult female. The changes in plumage are not the same in these two sexes, for, however much the nestlings may resemble each other, there is a decided difference in the way by which the adult plumage is gained.

The adult male of *A. virgatus* differs from the female in being nearly uniform bright rufous below, whereas in the female there

is always a more or less regular barred under surface, the breast-feathers having equidistant bars of rufous and white, the chest being longitudinally blotched with rufous; the thighs are more narrowly barred; the under tail-covert pure white. In very old females the rufous on the sides of the body coalesces and becomes uniform, while the chest and fore-neck are barred with rufous, but the most adult specimen that I have yet seen still preserves sufficient remains of transverse bars to render it easily distinguishable from the male. It is this radical difference in the adult plumage of the sexes, proved by a large series in the British Museum, that makes me say that Mr. Hume's bird is a female. If this conjecture proves correct, then the measurements do no more than to shew that, as in the case of *Astur trivirgatus*, a large Himalayan race exists. I subjoin the measurements of some old female *A. virgatus* in the Museum :—

			Wing.	Tarsus.	Mid-toe.
a.	ad.	Philippine Islands (cunning)...	7·4	2·2	1·35
b.	ad.	Madras (*Jerdon*) ...	7·5	2·25	1·4

In my 'Catalogue of Birds' I, page 151, I united *A. gularis* of Japan to *A. virgatus*, as well as *A. stevensoni* of China. Mr. Gurney, in his *Critique* on my work, goes fully into the question, and he is inclined to separate *A. gularis* as a large race of *A. virgatus*, while *A. stevensoni* is, in his opinion, a good species. I have therefore re-examined all the material in the Museum, largely increased since the publication of the Catalogue three years ago, and I append measurements of all our adult specimens. Only the adults are measured, and I include the dimensions of the birds in the Leyden Museum, enumerated in Schlegel's Catalogue (page 32).

			Wing.	Tarsus.	Mid-toe.
a.	♂ ad.	Java (Mus. Leyd.) ...	5·8	1·9	1·15
b.	„	Sumatra „ „ ...	5·85	1·9	1·1
c.	„	Etawah (Mus. Brit.) ...	6·8	1·95	1·2
d.	„	Malabar „ „ ...	6·2	1·95	1·2
e.	„	Ceylon „ „ ...	6·25	1·95	1·2
f.	„	Cochin China „ „ ...	6·55	1·85	1·1
g.	„	Darjeeling „ „ ...	6·8	2·05	1·3

All the above appear to be adult *A. virgatus*, with the exception of the last, which may be a male of the larger form from Sikhim. The Javan birds are slightly smaller than the Indian, which accords with Mr. Gurney's experience. The latter gentleman also includes a specimen from Malacca, but the only adult bird which I have seen from there is referable to the paler form (*A. stevensoni*). The following measurements refer

to specimens which Mr. Gurney would call *A. stevensoni*, all the birds being, as before, adult males :—

			Wing.	Tarsus.	Mid-toe.
a.	♂ ad.	C. Nefoo (*Swinhoe*) ...	6·45	1·85	1·1
b.	„	„ „ ...	6·6	1·85	1·1
c.	„	„ „ ...	6·8	1·85	1·1
d.	„	Malacca (*Wallace*) ...	6·75	1·85	1·1
e.	„	E. Timor „ ...	6·4	1·85	1·1

From the above table of measurements it is evident that the Chinese bird runs a little smaller, and has the middle toe shorter than in true *A. virgatus*. As regards the females of the two species, I am not able to speak with certainty, as the Museum has no fully adult specimens of the hen bird of *A. stevensoni;* but Mr. Gurney's remarks would lead us to infer that it is white below barred with brown, and without the rufous of *A. virgatus*. These are questions to be determined by the acquisition of a larger series.

Meanwhile I may state that my conclusions are as follows :—

1. *A. virgatus* is the ordinary form of India and Ceylon, ranging through the Indo-Chinese countries to the Philippine Islands, and found in Java, where it is rather smaller.
2. In the inner Himalayas there is a larger race.
3. *A. stevensoni* is a paler breasted form of *A. virgatus* with a shorter middle toe, the female being barred underneath with brown, but not with rufous. It ranges from China down the Malayan Peninsula, to Java and Timor, visiting these localities in winter.
4. In Japan and (according to Mr. Gurney) in Formosa there is a large form, in colour resembling *A. stevensoni*, but as large or larger than *A. virgatus*.

[This note received, I fear fully eighteen months ago from my friend Mr. Sharpe, was unfortunately mislaid. I have now, I am glad to say, found it, and hasten to publish it, the more so that it treats of the same large race of *Accipiter virgatus* or *gularis* which is discussed by Mr. Gurney in the next article.—Ed., S. F.]

On Accipiter gularis and Accipiter virgatus.

By J. H. Gurney.

In the *Ibis* for 1875, at pp. 480 and 481, I gave a series of measurements of *Accipiter virgatus* and *A. gularis*, and remarked that "these measurements lead to the inference that northern specimens (of *A. virgatus*) are, on the average, larger than those from more southern localities, and this excess in size is still more apparent in the race inhabiting Japan and Formosa, which has been separated under the title of *A. gularis*." It was then, and is now, my impression that *A. gularis* may, on account of its decidedly larger size, be admitted as a geographical race sub-specifically distinct from *A. virgatus*; but that the characters, independent of size, which had been supposed to distinguish it, *viz.*, the comparative shortness of the toes and of the fifth primary, were not sufficiently constant as distinctive marks, to admit of their being relied on as such.

Mr. Hume has been kind enough to lend me four specimens from Sikhim of a large form of *A. virgatus*, which he fancied might prove distinct, but which appears to me not to be separable from the Japanese *A. gularis*.

In my list of measurements of *A. virgatus*, given in the *Ibis* as above referred to, a specimen from Sind in the Norwich Museum is included with a wing measurement of 8·2 inches, which I am now disposed to refer, with Mr. Hume's Sikhim specimens, to *A. gularis*; and a large specimen from Nepal in the British Museum should probably be referred to the same race.

I do not think it needful to repeat the measurements which I have already given in the *Ibis*, but I annex a statement of such as I have subsequently obtained:—

Accipiter gularis.

	Wing.	Tarsus.	Mid-toe, S. W.
From Japan, (British Museum) presumed *male*	7·8	2·0	1·4
„ Tobien, China (ditto), ditto ...	7·7	2·2	1·4
„ Nepal (ditto), ditto ... (This may possibly be a very large female of *A. virgatus*.)	8·0	2·3	1·6
„ Native Sikhim, (Mr. Hume's Collection) immature, presumed *male* ...	7·4	2·2	1·5
„ Native Sikhim, (Mr. Hume's Collection) adult presumed *male*	7·9	2·4	1·6
Native Sikhim, (Mr. Hume's Collection) adult presumed *female*	8·3	2·1	1·6
„ Sikhim, (Mr. Hume's Collection) immature presumed *female*	8·5	2·1	1·6

ACCIPITER VIRGATUS.

	Wing.	Tarsus.	Mid-toe, S. W.
From Darjeeling, (Mr. Hume's Collection) immature *male*...	6·6	2·0	1·3
„ Darjeeling, (Mr. Hume's Collection) adult *male*	7·0	2·	1·4
„ Andamans (Mr. Hume's Collection) adult *female*	7·5	2·2	1·6
„ Andamans (Mr. Hume's Collection) immature *female* ...	7·5	2·2	1·6
„ Etawah (British Museum) adult presumed *male*	6·8	1·95	1·2
„ Ceylon (British Museum) adult presumed *male*	6·25	1·95	1·2
„ Ceylon (Norwich Museum) adult presumed *male*	6·0	1·8	1·1
„ Thyetmyo, Burmah (Norwich Museum) adult presumed *male*	6.4	2·0	1·4
„ Java (Norwich Museum) adult presumed *male*	5·7	1·8	1·15
„ Java (Norwich Museum) immature presumed *male*	5·85	1·7	1·1
„ Philippine Islands (British Museum) adult presumed *female*	7·3	2·1	1·4
„ At Sea off Nantura Islands (British Museum) immature presumed *female* obtained 14th November.	7·7	2·1	1·4

This last specimen is marked by Mr. Conrad, the Collector, as a *male*, but from its size it would seem erroneously, unless it be a *male* of *A. gularis*, which had accidentally wandered so far to the southward.

Note on Baza sumatrensis and Baza ceylonensis.

BY J. H. GURNEY.

MR. HUME has very kindly sent for my inspection the male *Baza* from South Tenasserim, described by him at p. 313 of STRAY FEATHERS for 1875.

Mr. Hume there states that he is "inclined to believe" that this specimen belongs "to Lafresnaye's *sumatrensis*."

Such is also my opinion, and Mr. Sharpe, who at my request has compared it with the specimen in the British Museum, agrees in this view and writes to me as follows:—"I do not

think there is a doubt, but that this is the same as *Baza sumatrensis*; it is rather an older bird than the one I figured."

The greater age of Mr. Hume's specimen is, I think, chiefly denoted by the presence of the chin and throat stripe, which is wanting in the British Museum specimen.* This stripe may perhaps be present in the type specimen, as the latter is described by Lafresnaye as "subtus gutture pectoreque pallide rufescentibus, *flammulis rufis et nigris variegatis*" which latter words may possibly be intended to apply to the throat stripe, though, if so, they do not describe it very clearly.

As regards the specimen in the British Museum, it may be remarked that the total length given by Mr. Wallace in the *Ibis* for 1868, p. 19, and probably taken by him in the flesh, agrees exactly with the corresponding measurement of Mr. Hume's male bird as given in STRAY FEATHERS from a note recorded when that specimen was in the flesh, which strongly confirms Mr. Hume's suggestion that the British Museum specimen is in reality a male, and was wrongly sexed by the Collector.

I am also indebted to the kindness of Mr. Hume for the loan of the *Baza* from the Wynaad, described at p. 151, Vol. VII, of STRAY FEATHERS for 1878. I have compared this skin with two specimens of *B. ceylonensis*, which are preserved in the Norwich Museum, and have no doubt as to its belonging to that species; it much resembles the younger of these two specimens which was presented to the Museum by Mr. S. Bligh, and is described at p. 95 of Captain Legge's "Birds of Ceylon," but it appears to be a slightly older bird as is chiefly denoted by the more rufous plumage of the crown of the head, the longer crest, and by there being one less transverse bar on the tail.

The Kohlass Pheasants of the Himalayas.

IN the October number of the *Ibis*, just received, appears the following interesting paper by Captain G. F. L. MARSHALL.

"Pucrasia biddulphi, *Sp. N.*

"*Male.*—Sides of the head and back of the neck, dark metallic green, with a blue gloss towards the neck; forehead and

* The absence of the stripe is one of Mr. Sharpe's characters for this species. It was the presence of this, and the fact, that my specimen, an undoubted male, was as large as the alleged British Museum *female*, that made me doubt as to my birds being really *sumatrensis*.—ED.

crown green, turning into sandy brown; mesial crest sandy brown, with the lateral sincipital tufts black, tipped with green; sides of the neck white; mantle black, some of the feathers edged with stone grey, and some with sandy brown; back grey, each feather with a black streak down the centre; upper tail-coverts and rump grey, each feather centred buff with a dark brown margin to the buff on each side. Tail—central feathers reddish brown, mottled with black; the remaining feathers deep brown, nearly black, mottled with chestnut on the outer web at the basal half, tipped with white, and narrowly edged with light brown; throat and forehead greenish black; centre of breast and abdomen deep chestnut, each feather narrowly margined with black; sides of the breast grey, with a broad black central stripe and black shaft to each feather; flanks similar to the sides of the breast in general style, but the feathers are white shafted, and the central stripe is much broader and has a brownish tinge instead of being pure black; thigh-coverts, somewhat similar to the flanks, but paler, and with a white central streak in the brown; under tail-coverts, deep chestnut, with a broad white tip, and a black bar dividing the white tip from the chestnut; scapularies and tertiaries brown, with yellowish brown edgings, and a narrow central streak of raw sienna, pale-shafted. Wings—quills brown, broadly margined with sandy yellow; the greater coverts, grey, narrowly centred with black, and having the shafts tipped with white; the lesser coverts of the same type as the scapularies.

"*Female.*—Somewhat similar to the female of *P. macrolopha*, but with all the markings more strongly pronounced, and of a generally darker hue. I have seen five specimens of the female of this species, but have none with me now, and I unfortunately omitted to take a detailed description at the time. In addition to the general description given above, the locality in which my specimen was obtained will be sufficient to fix the identity of the species; for the geographical distribution of this group of Pheasants is well marked.

"There are, including the species now described, six kinds of 'Pucras' or 'Koklass' Pheasants known, all of which inhabit the vast mountainous chain which extends across Asia from Afghanistan to near the Pacific Ocean in a more or less unbroken series of ranges. Each of its species has its own particular section of this tract, in which it occurs to the exclusion of the other species; but to what extent the range of each species overlaps that of the next in geographical order is, as yet, very imperfectly known, and it is not improbable that hybrids may be met with between any of the two species on the borders of

their respective ranges. It is also not impossible that they may, after all, be merely local races of the same species. The negative fact that no two different species have been found inhabiting the same locality, rather favors this view ; while, on the other hand, the fact that, so far from a regular gradation of colour from west to east being perceptible, the form inhabiting Nepal has its nearest ally in the Cashmere form, and its next nearest in that from the extreme west, while the intervening form in Kumaon* is most widely distinct from it, raises a presumption strongly in favour of the specific distinctness of the various races. A parallel case to this curious distribution is found among the long-tailed blue Magpies (*Urocissa*), in which the Bhotan form (*U. flavirostris*) is identical with the Cashmere form, while a distinct species (*U. occipitalis*) is found in Kumaon and the intervening region, and where it occurs the Bhotan form is absent.†

"The head-quarters, so to speak, of the six known species, commencing from the west, are as follows :—

"*P. duvauceli*, Northern Afghanistan and Kafiristan.

"*P. biddulphi*, Cashmere.

"*P. macrolopha*, Kangra to Kumaon.

"*P. nipalensis*, Nepal and Bhotan.

"*P. xanthospila*, Mantchuria and Western China.

"*P. darwini*, Province of Che-Kiang, China.

"*P. biddulphi* may be distinguished from *P. duvauceli* by the mantle, which is black, edged with grey, instead of deep uniform chestnut ; from *P. macrolopha* by the very broad black centrings to the feathers of the mantle and sides of the neck, and by the under tail-coverts and tail ; and from *P. nipalensis* by the absence of the central chestnut stripe on the feathers of the mantle and sides of the neck.

"The subjoined table gives the principal points of distinction between the Himalayan species :—

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* To me it appears that a regular gradation *is* observable from West to East. If the Mussooree Koklass is the true *macrolopha*, then the Kumaon form should not be alluded to as typical, for it is more or less intermediate between *macrolopha* and *nipalensis*, (see GAME BIRDS, I., p. 166). This *P. biddulphi* is the form I referred to (*tom cit.*, 167) when I said, "True *castanea* may be equally distinct, but the Western Cashmere specimens, which probably are only verging towards *castanea*, certainly are not so."—ED., S. F.

† This is not strictly correct, as we get *flavirostris*, in Gurhwal, British and Native, and throughout the Hills right away to Cashmere. I have had many specimens for instance sent me from the Hills north of Mussooree, and from Kotgarh ; but where it co-exists in latitude with *occipitalis*, it is *much* less common, and I *suspect*, from what I have seen personally, affects generally different valleys. Still close to Simla behind Mashaobra, we got both species out of the same dell.—ED., S. F.

Name.	*P. duvauceli.*	*P. biddulphi.*	*P. macrolopha.*	*P. nipalensis.*
Habitat	Afghanistan ...	Cashmere ...	Kumaon ...	Bhotan.
Male, length of wing ...	9″·75	8″·75	9″·37	8″·5.
Light mesial crest ...	½ to ⅓ shorter than the dark sincipital tufts.	Equal in length to the dark sincipital tufts.	About ⅓ shorter than the dark sincipital tufts.	About ⅓ shorter than the dark sincipital tufts.
Mantle	Uniform chestnut ...	Black, edged with grey, and tinged with rufous at back of neck.	Grey, with a narrow central black stripe on each feather.	Black, edged with rufous, with a narrow central stripe of rich rufous.
Lanceolate feathers at side of neck.	Deep uniform chestnut.	Black, broadly margined with pure ashy grey.	Grey, with a narrow central black stripe.	Brownish black, edged rufous or whitish, with a narrow central stripe of rich chestnut.
Under tail-coverts ...	Chestnut, with a black line, fringed with white at the top.	Rich chestnut with a broad tip of pure white, separated from the chestnut by a black line.	Black, with a streak of chestnut red down the tip, and a whitish fringe.	Rich chestnut with an oval spot of white at tip.
Tail	Margined and fringed with whitish at top.	Side feathers deep brown, conspicuously tipped with pure white.	Margined with grey, and stained with rufous at tip.	Inner web black, outer web and tip chestnut, the tip fringed with whitish.

"The new species, which is tolerably common in Cashmere, is named after the discoverer, Major John Biddulph, whose services to ornithological science are well known."

I have given this paper at full length because, although I do not myself consider that this so-called *P. biddulphi* (of which I had a specimen before me when I wrote the GAME BIRDS), is really entitled to specific rank, I think it only right that my readers should hear both sides of the question. As I said in the GAME BIRDS :—

"I incline to consider the whole of the Koklass, which are as yet known to occur in our hills as one and the same species, varying much according to localities, and somewhat also, as regards individuals even in the same locality, but all so running one into the other, and all accompanied by so many intermediate forms, that it is desirable to treat all as one species."

But whatever verdict may be pronounced as to the validity of the three previously described varieties—*nipalensis*, *macrolopha* and *castanea* (for the name *duvauceli*, cannot, as I have shown, S. F., VII., 124, be properly adopted for this species)—I must protest against the introduction of *more* species. This *biddulphi* is simply a form intermediate between *castanea* and *macrolopha*; if we accept *it*, we must also accept the form intermediate between it and the Mussooree *macrolopha*, which we have from Kullu, and again the Kumaon form which is intermediate between the Mussooree *macrolopha* and *nipalensis*. At the very least we shall have six species of Himalayan Koklass and directly we have *these*, intermediate forms will require, on like principles, to be similarly ranked as species.

I am quite certain that no competent ornithologist who studies a really large series of these Koklass from different portions of the hills will ever agree to make *more* than three species, even though, as a matter of convenience, he *should* tolerate the three.

Finally, I am unable to ascertain the authority on which Bhotan is given as a habitat of *P. nipalensis*, which is, I believe, confined to the westernmost portions of Nepal.

A. O. H.

Occasional Notes from Sikkim—No. II.*

By J. A. Gammie.

Birds' nesting is hard work in most parts of the world, but is particularly so in Sikkim, where the exclusively mountainous nature of the country, and the dense, often almost impenetrable, vegetation with its ticks, leeches and other troublesome creatures make this pastime possible only to those able to undergo considerable fatigue, and entertaining no great objection to ticks and leeches on their legs and bodies. To a fresh arrival these appear insufferable, but after a time he gets used to them, and can look on them as endurable, though disagreeable pests. The amount of annoyance that the man who rides any particular hobby hard can serenely endure from such like pests whilst assiduously following his pet amusement, is something marvellous when compared with the small matter that will put him in a towering rage at any other time. Though, no doubt, naturally clever, his pest remedy is generally simplicity itself, and admirably calculated to raise the pitying smile of the man without the hobby, who is consequently presumably sane, and not wholly beyond the reach of common sense. One, I knew, whose hobby was botany, discovered what he considered to be the very perfection of a cure for leeches. On his return one evening from a very leechy jungle with a bundle of rare plants, he, with a more than usually wise look, and with the air of a man who has made a most useful discovery, said, "Ah! I have found out the way to puzzle the leeches now." I at once was all attention, for although an old acquaintance of the leeches, I have never taken kindly to them, and could thoroughly appreciate a sovereign remedy for them. After chuckling with glee and pride over his *important* discovery, he delivered himself of his cure. "You," he said, "start in the morning with a pair of sharp pointed scissors in your pocket, and with your trousers doubled over the knees, leaving the legs bare; then, when a lot of leeches get fastened to your legs, cut the creatures in two and they drop off without leaving the bigger wound that pulling them off would cause; but mind, don't be in too great a hurry in removing the coagulated blood as that would open the wounds afresh." On seeing that I did not look on his discovery in so important a light as he himself did, his countenance expressed great disgust at my stupidity in failing to appreciate a really grand

* For No. 1, *vide* S. F., V., 389.

discovery. Although I could never see that his legs were less bitten—more they could not be—he continued to practise and admire his remedy, and made it known far and wide with that loving pride and satisfaction which a man feels when he knows how great a benefit he is conferring on his fellowmen. He has since rendered most important services to the scientific world, but these services will, I feel sure, always hold but a secondary place in his effections to his marvellous leech-cure discovery! I do not advise birds'-nesters to follow his plan, nor can I suggest anything perfect. Certain compositions smeared on the boots and gaiters keep leeches off the legs for a time if the rain is not too heavy and protracted, which it often is, however, in this part of the world about nesting time. The best way is to wear strong lace-up boots and tight-fitting gaiters, and every now and then whisk off the creatures before they get beyond the gaiters. Any substance offensive to leeches rubbed on the boots and gaiters is a partial preventive so far as leeches off the ground are concerned. Unfortunately, in the higher jungles especially, one gets any number on to one's head, neck, and clothes from the bushes one brushes against, so that they have to be endured to a certain extent. As long as one keeps to the paths the little pet plans about the boots and gaiters answer admirably, but they are lamentable failures when it comes to honest birds'-nesting through the undergrowth.

No one, so far as I know, has yet been hardy enough to suggest any plan for keeping out that most vile and insinuating pest—the tick.* One may get reconciled to being leech bitten, but to tick bitten never. It abounds among the small bamboos of the higher forests, and sparingly on the drier ridges under 4,000 feet. It must be borne as one best can.

But all the little hardships and inconveniences inseparable from birds' nesting in Sikkim are abundantly repaid by the knowledge gained of the many charming ways of birds in their domestic arrangements, and, let me add, of the better traits of your native companions, which only similar excursions can bring out. So long as the European keeps on horseback, and the native trudges on foot, or whilst the European directs the native in some civilized operation, they can have but little sympathy in common. But let the European trudge

* It is well to know how to get rid of ticks, as if not carefully dealt with they are apt to produce terrible sores. You come in, strip and find your legs, more especially about the knees and lower down, perfectly black with these wretches. Don't attempt to tear them off and dig them out. Get your bearer to bring his Hubble-bubble, and wash your legs well with the nicotine-impregnated liquid. Let it dry on. Ten minutes later all the ticks will be dead—the great majority will wash away, and the rest can be safely removed with tweezers.—A. O. H.

through the jungles with any of our hill tribes in quest of birds, birds' nests, &c., and he will find those children of nature to be most intelligent people instead of the dull machines he may have previously thought them; and often will feel that could he but barter some of his drier *book* knowledge for their more interesting knowledge of nature, he would be the gainer by the exchange. They—whether Lepchas, Bhutias or Nepaulese—are ever ready with their cheerful help to the European when undergoing the same labor as themselves, and try to save him as much fatigue as they can; and this, as can be readily discerned, not from any sordid motive, but for the pure pleasure of affording help. I do not allude to the knowing Pahariali, of whichever tribe, of the station, who cannot, under any circumstances, be considered a desirable companion, but to the unspoiled people of the outlying districts. Their knowledge of the names and habits of birds, plants, &c., is astonishing. One or two naturalists have pooh-poohed native names, giving as their reason the fact of their having got different names for the same species from different individuals. In every country there are people who will give some sort of a name rather than confess ignorance. I have heard even a scientific European give to non-scientific inquirers some extraordinary names more calculated to do credit to his powers of invention than to his love of accuracy, rather than own his ignorance. If one is not troubled with a too tender conscience this is a safe enough card to play with the ordinary run of people, who usually ask information of this kind for the mere sake of asking, or to convey the false impression that they take an interest in such things, and forget the answer the next minute, but because some natives more willing than able to give names take advantage of ignorance in the same manner, this is surely not sufficient reason for condemning the whole of the native nomenclature? I have found my very limited knowledge of such names most useful, and can strongly recommend intending birds'-nesters to pick up as much as they can in that way if they wish to save themselves many a long and useless trudge after nests they do not want, and so spare their strength and time to go after new nests. When the native names of the more conspicuous birds are mastered, it is an easy matter to make out from comparative descriptions most of the other birds. For instance, the other day one described a bird as the Thrush with the light-colored irides, from which it was at once known that he meant *Trochalopteron squamatum*. Jerdon describes this bird as having "red-brown irides," adding "(glaucous according to Hodgson.)"

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Hodgson in this is right, as he usually is in his descriptions.

It is interesting to see the very different ways different species have of leaving their nests, usually those that build in places fully exposed to view, fly but a very short way, and speedily return, making a great noise, either in a threatening or beseeching tone; whilst those that hide their nests cunningly among moss, leaves, &c., often take refuge in trees close by, and begin feeding in an unconcerned manner as if quite sure that no human eye could discover their dwellings. Those that nest on the ground, and are of an earthy color, slip quietly away by either hopping or flying within a few inches of the ground. Perhaps *Pomatorhinus erythrogenys* is our most notable example of this mode of escaping. I have seen it dozens of times leaving its nest, which is always on the ground, and usually among undergrowth where numerous dry tree leaves are lying about, and they, together with the brown soil, render it almost undiscernible, so well do their tints blend with the color of the bird, its brown ground color with the soil, and its rusty neck patches with the scattered decaying leaves. And as if it knew that the whitish colored under parts were its weak points, it drops its brown wings and tail to hide them, and hops and skims along close to the ground with a ludicrous rolling gait caused by its raising neither wings nor tail to balance itself for fear of exposing the white. It is an excellent example of protective coloration, and of the way birds conceal the parts likely to draw observation when occasion demands. I have quite as often caught the male of this species sitting on the eggs as the female. The numerous instances of males taking their turn at sitting are one of the first things to astonish a young birds'-nester in Sikkim, especially, if his previous nesting experience has been confined to the poultry yard, where the custom is for the female to do the sitting part entirely, and the male to strut about and make a noise. As a rule, when the pair are alike sombrely colored, the male takes a turn on the nest, as also when they are alike gorgeously clad, as in *Psarisomus*, but if the male be showy and his partner dowdy, he is much too fine a gentleman to assist in these little domestic affairs. Jerdon repeats the native statement that the female *Turnix taigoor* leaves the egg-hatching business entirely to her mate, and this is probably correct, for I have invariably found the male of *Turnix plumbipes*, the only Quail we have got in these hills, doing the sitting part. This appears to be a very anomalous state of affairs, which, no doubt, there are good natural reasons for, though I cannot conceive what

they can be. It is devoutly to be hoped that this alarmingly suggestive custom will be restricted to the Quail kingdom.*

On the 8th March of this year (1880), I found a nest of *Pomatorhinus erythrogenys* with three hard-set eggs. These are the earliest of the smaller bird's eggs I have got since 1875, and show that, in some respects at least, the season is in advance of average seasons. Probably the extra moisture we have had this year has had more to do with the earlier breeding than any difference in the temperature. Moisture would cause grubs and other similar creatures, which are the principal food of the Ground Thrushes, to hatch out, and abundance of the proper sort of food is the main incitement to lay. A very good guess can usually be made at the favorite food of birds on examining the kind of jungle they nest in. Food is, undoubtedly, the great determiner of the breeding season and place, much more so than temperature is. I can see no good reason, except the greater abundance of food, in the way of grubs and caterpillars, why, in tropical countries, spring should be chosen by the majority of birds for breeding in preference to the other seasons. Our latest breeding bird is, perhaps, *Munia acuticauda*, and the reason of the lateness of it appears to be that it waits the ripening of the rice, which is its favorite food, before venturing to raise a family. Probably if birds got abundance of forcing food all the year round, as domestic fowls get, they would behave in the same manner and lay more frequently. It has become the established practice with so many of them to lay only in spring that it might take a few generations to break them out of their forefathers' routine, but that such can be done the domestic fowl is a livingp roof.

Judging from the lively notes of several of the birds, they are breeding this moist year by the middle of March instead of waiting till April as in drier years. One of the first to call, after the Ground Thrushes, has been *Volvocivora melaschistos*, whose monotonous note is unmistakable. It is a whistling *whee-whee-wheeah*, rather slowly uttered; all the notes being well drawn out, and the last markedly so. I heard it first on the 8th March. This bird is a permanent resident of these hills; abundant up to 4,000 feet, and occasionally found at considerably higher elevations, but is rarely heard during the cold season, and, consequently, but seldom, observed then as its habit is to frequent densely-foliaged trees. Since

* You must not forget that in the Basque Provinces when the wife has been confined, she gets up and goes about her household affairs, but the *husband* goes to bed for a week and receives the congratulations of his neighbours—*Ed.*

the same date *Caprimulgus albonotatus* has been calling nightly up to 4,000 feet. It, too, is rarely found higher in Sikkim. I have frequently found its eggs in the Terai, where it is exceedingly common, and once nearly trod on one covering two newly-hatched young. It was pitiful to look on her great distress and anxiety; she grovelled in the dust with her drooping wings and tail, within a yard of me, and looked up in my face in the most beseechful manner. When she saw that no harm was intended either to herself or young, she returned to them at my feet. The eggs, as described in "Nests and Eggs of Indian Birds," are laid on the bare ground without any attempt at a lining for them to rest on. Captain Marshall there says that he got an egg on a little cleared spot among dead leaves. This accords with my own experience, which is that the surroundings of the eggs are always either dead leaves or the bare brown earth, never green grass or anything that would contrast strongly with the color of the bird and render it liable to detection. The color of the eggs, too, is beautifully adapted to concealment; the yellowish ground-color and brown blotches corresponding so truly with the bits of dry straw-colored grass and patches of brown earth between. A favorite place for this Night-Jar to lay is on the fresh soil of the newly-made cinchona seed beds.

Roughly speaking the eggs of those birds that lay on the ground, in open nests, are of a yellowish or earthy ground-color; whilst the eggs of those that also lay on the ground but in domed nests, where strong contrasts are not likely to lead to detection, are either white or otherwise colored regardless of the surroundings.

Than a course of birds'-nesting, there is no better training for distinguishing birds quickly. The little, though most characteristic differences in their mode of flight are, after a short practice, readily detected at the merest glimpse, which is usually all that can be got of many of the birds as they dart through the bushes. Also their different notes are eagerly listened for as a help to recognition, but these in many instances are so numerous and varied from the same individual, that long and close observation, and a quick ear—which, unfortunately, I have not got—are necessary before the identity of the caller can be decided on with any degree of certainty. Jerdon, as is too often the case, jumped to the conclusion when he heard two different calls from *Pomatorhinus schisticeps*, that one caller was the male and the other the female. But this, according to my experience, does not of necessity follow. I have never seen *P. schisticeps* about the Cinchona reserves, though it is

common enough near Darjeeling station. But the closely-allied species, *P. leucogaster*, is abundant with us. I listened to, and watched a single individual of it for nearly an hour one morning in April. It was flying from tree to tree feeding, and for about the first quarter of an hour its call was—*too-ta-toot;* then it broke into—*whoot-a-ha-hoot*, and later its call changed to *gouk-ur-r-r-r*, sometimes *gouk-gouk* only, and more rarely *ur-r-r-r* only without the *gouk;* it then reverted to its *too-ta-toot*, and when I left it had recommenced its *whoot-a-ha-hoot* and apparently intended going through the full series. When close to the bird the notes sounded interrupted, as it were, which was probably caused by the sound coming in contact with the curve of its long bill instead of straight from the throat as from birds with straight or shorter bills. It was feeding mostly on the fruit of *Carpinia*, and, like most long-billed birds when feeding on trees, almost always reached up for the berries instead of getting above them, and reaching downwards as shorter-billed birds usually do. One of this species, which I dissected, had swallowed, besides seeds and small grubs, a horrible stinking bug which was perfectly whole, and still as painfully odorific as it could ever have been in life.

Erismatura leucocephala.

Of all the Old-world Ducks there is perhaps no more remarkable form than *Erismatura leucocephala*, the White-headed Duck, with its enormously broad bill and lengthened, stiff, pointed, almost Woodpecker-like tail.

Hitherto this species has only been known to occur in Southern Europe, Northern Africa, Asia Minor, Palestine, and lastly Turkestan, where Severtsoff says that it is seen on passage, and even breeds.

No one has observed it in Mesopotamia or Persia, and its occurrence therefore near Kalat-i-Ghilzai, so much to the south and east of the previously known limits of its range, is well worthy of notice, and brings it within the limits of the British-Asian Empire and its dependencies.

On the 20th October 1879, Col. O. B. St. John, R.E., at that time, I think, Governor of Candahar, shot a couple of Ducks of a type quite unknown to him in the Jameh river near Kalat-i-Ghilzai, which he kindly forwarded to me with other specimens, that, despite incessant hard-work of all kinds, he has been steadily collecting ever since he went to Kelat and Afghanistan.

These Ducks proved to be an immature pair of the White-headed Duck.

Personally, of course, I know nothing of this species, but in order to give some idea of its habits, I may quote from the *Ibis* of 1875, Messrs. Danford and Harvie-Brown's remarks in regard to it, the result of their observations in Transylvania :—

"This curious bird, which we found in the Mezöség, is not very common. We met with a flock of nine or ten birds at a small reedy lake near Záh ; but, owing to the difficulty of paddling the wretched square-ended canoes or punts (*csónak*), the only substitutes for boats in the country, we found great difficulty in getting near them, and for some days only succeeded in shooting one male, and that at a very long range. A couple of days before our departure, however, we were more fortunate ; the birds were tamer, and let us get a number of long shots, by which we killed three more males and a female. They never attempted to leave the lake, but after a short, rapid, flight pitched again, generally about the same place. They swam very fast, keeping their stiff Woodpecker-like tails erect at right angles with the body, and when wounded, though they dived constantly, showed no disposition to escape, like other Ducks, by hiding among the reeds, but on the contrary avoided them.

"The bill of the male, when newly killed, is of a beautiful pale ultramarine; this colour extending even to the interior of the mouth. It soon fades, being merely connected with a thin, easily moved membrane ; and in twenty-four hours the bill loses its brilliant appearance, turning to a brownish grey."

In Southern Europe, the South of France, Spain, Italy, Austria, Greece, Turkey, and the larger islands of the Mediterranean, it occurs, though nowhere apparently in great numbers, but it is more plentiful in Southern Russia, especially in the Lower Volga.

It is also found, as already mentioned, in Asia Minor and Palestine, and throughout the North of Africa, Algeria, Tangiers, and Lower Egypt.

It is said to be entirely a fresh-water species, frequenting, as a rule, the larger lakes.

It is apparently very much of a diving Duck, often preferring to seek safety under water, rather than by flight; and Tristram tells us that both in flight and habit it more resembles a Grebe than a true Duck.

Whether the precise locality at which these two specimens were procured is likely ultimately to be included within our new "scientific frontier" I cannot say ; but it is quite certain now that whether within or without our nominal frontier, this whole tract will henceforth be included, like Kelat, within the list of British dependencies ; and the species should therefore be included in *our* list.

Moreover it seems to me just possible that it may be found to occur as a straggler during the cold season in both Sindh and the Punjab, west of the Indus; and it is therefore necessary to give a full description of it; I quote Dresser:—

"*Adult Male* (*Záh, Transylvania, 16th May*).—Crown black; forehead, sides of the head, including the space above the eye, chin, and nape pure white; below this white the neck is black, with a few buffy brown dots on the forepart; lower neck to the forepart of the back, except in the centre, chestnut-red; this colour extending to the foreneck and upper breast, where it is delicately marked with buffy white; back and scapulars ochreous or reddish buff; rump darker, brownish, all finely vermiculated with blackish; lower rump and upper tail-coverts chestnut-red; quills greyish black, the secondaries externally and the larger wing-coverts greyish buff, vermiculated with blackish grey; lesser coverts dull ashy, but slightly vermiculated; tail long and stiff and blackish in colour; underparts below the breast buffy white, obscurely marked with reddish brown; flanks dull chestnut brown, tinged with warm buff, and vermiculated with darker brown; bill much swollen at the base, pale ultramarine-blue in colour; iris dark brown; legs dull blackish plumbeous. Total length about 17·5 inches; culmen, 1·9; gape, 1·82; wing, 6·3; tail, 4·3; tarsus, 1·35.

"*Adult Female* (*Záh, 16th May.*)—Differs from the male in lacking the clear white on the head, and in being much more rufous in plumage; crown and nape blackish brown, with a chestnut-tinge; sides of the head similarly coloured, but marked with white; a white streak passes below the eye nearly to the nape; and the chin and upper throat are white, slightly dotted with blackish brown; general colour of the upper parts darker than in the male, being deep chestnut-red; underparts as in the male; bill dull plumbeous; iris dark brown; legs plumbeous black.

"*Young* (*vide H. Otto, 'Ibis,'* 1875, *p.* 428.)—Beak bluish black, with a swelling at the base; feet of a similar colour; plumage brown-black; from the base of the bill, under the eye, and continued over the ear, a white stripe; chin with a broad outward curve back under the cheek white, so that the brown cheek appears bordered underneath by this curve, and above by the eye-stripe; belly dirty white, which colour loses itself in the sides; under the shoulder a light spot on both sides, which hardly shines through, and in many specimens is wanting; tail-feathers slit up and spread out like a fan."

A. O. H.

Notes on the Nidification of some Hornbills.

By C. T. Bingham, Esq.

A few miles below the frontier town of Meeyawuddie, a large tributary, the Meplay, joins the Thoungyeen river. This along its course receives several lesser streams, one of which, called the Hteepoyo, a small rocky *choung*, rising to the west in the Donat hills, empties itself into the Meplay, about half way up from its mouth, and just below the present site of the village of Meplay Gatai.

The banks of this small stream are covered right up to the foot of the hills with the most magnificent evergreen forest, teeming with birds, among which the five northern species of Hornbills, found in Tenasserim, are conspicuous from their size and number. Of these, *Dichoceros cavatus* and *Hydrocissa albirostris* are common to a degree. *Rhyticeros subruficollis* perhaps less abundant, and *R. undulatus* and *Ocyceros tickelli* comparatively scarce.

For three years I had been in search of some man, Burman or Karen, who took enough interest in birds to mark down and search for nests for me, but in vain. However, in November last year, being encamped near the village of Meplay Gatai, I was fortunate enough to light upon a Karen rejoicing in the name of Myat-jo, or the "excellent dove"—a remarkable man who turned out to be quite an ornithologist in his way.

I chanced on him thus:—One day, my peons being all laid up with fever, this man had voluntarily offered his services for the day to accompany me round the boundaries of a reserved forest, which I was then examining. In the course of the day's tramp, I shot a number of birds, among which was a lovely specimen of *Lamprococcyx maculatus*, a rare species in the Meplay forests. While placing this on the bird-stick, to my surprise Myat-jo remarked that "that bird was too lazy to build a nest for itself, but laid its egg in the nest of another" (which, from his description, I thought might possibly be *Psarisomus dalhousiæ*.) Struck by this, I subjected my friend to a stiff cross-examination, and found that he knew an awful lot about animals and birds, much of which I was able to corroborate from my own experience. Of course I instanter entered into a covenant with him, promising reward of powder and shot and two anna pieces for every nest he could mark down for me during the coming season, as I knew that about that time I should have to visit that forest or be somewhere about it once or twice.

And sure enough on the 5th February this year I arrived at his village, and encamped there for the night. Having a couple of hours to spare after my arrival, I accompanied him to view two nests of *D. cavatus* he had found. We had a longish tramp through dense evergreen to the first nest, which was in the hollow of a large Pyma tree (*Lagerstræmia flos reginæ*), and I was able to ascend myself by help of the bamboo pegs he had stuck in. I found the female well plastered in all right, but on making her move by stirring her up with a stick, I saw to my disappointment I was too early—she had not laid yet.

The second nest we found was not even entered into, the plastering had just begun, and both birds sat on a neighbouring tree and looked on at us.

I was afraid they would desert their nests, but Myat-jo seemed confident of securing their eggs ten or fifteen days later if I could manage to come back; so with a light heart I made tracks for camp.

On the way back, as we were crossing a small, almost dry, *choung*, a bird got up, and flying a little way alighted on the branch of a middling-sized Pynkado tree (*Xylia dolabriformis.*) Looking at it I was astonished to see it was *Ocyceros tickelli*, a bird usually so wary and hard to get at. I raised my gun and was on the point of firing, when I noticed that its beak seemed covered with mud, and instantly afterwards with a great thump in my heart, I saw a small hole in the very tree it was seated on, the sides of which also appeared to have mud on them. Of course all idea of shooting the bird was abandoned, and in five minutes Myat-jo had a small tree cut down and placed slantingly as a ladder, and ascended to interview the "missis."—Lord! how she did hiss and cackle, while her mate outside, with loud harsh quacks, flew from tree to tree around.

After peering and stirring the female about with a stick for what appeared to my impatience an unconscionable time, Myat-jo announced the disappointing fact of "no eggs as yet."

Of course there was no help for it, and I had to content myself with his assurance that we would get the eggs later on, and as we approached camp he further cheered me with the news that some one or other of his fellow villagers knew of the nests of *R. subruficollis* and *H. albirostris*, besides one of the "leh," whatever that might be, which his son had found, and which lying not far off my road next morning I could go and visit.

I did so, and found an immense nest of sticks, some 70 feet up a Kanyin tree (*Dipterocarpus alatus*) with a pair of *Spilornis*

rutherfordi squealing over it and bustling about with sticks in their bills. I was again too early for eggs.

On the 22nd February my work again took me for two days near Myat-jo's village, and I found the old man in a terrible state of impatience lest some of the eggs marked down should be hatched off.

He announced a goodly list, and for the next two days I was simply walked off my legs, for having finished my regular work, and returned to camp about 2 P.M. I had just time to snatch a hasty lunch and be off again, tramping both days till well after dark. But I had my reward, in taking eight nests of *D. cavatus*, two of *H. albirostris*, one of *R. undulatus*, and one of *O. tickelli* with eggs and visiting several of *R. subruficollis*, and two more of *O. tickelli*, not laid in yet; besides shoals of *Harpactes orescius*, one or two of Woodpeckers, one of *Loriculus vernalis*, etc., all with eggs. *S. rutherfordi*, strange to say, had not laid even yet, though both birds were about the nest.

The following is a detailed account of the nests of the Hornbills visited and the eggs taken :—

140.—Dichoceros cavatus, *Shaw.*

Of the eight nests visited and eggs obtained, four contained two eggs each, and four, one each. These were laid in natural hollows in various trees—Pyma (*Lagerstræmia flos reginæ*), Myoukchaü (*Homalum tomentosum*), Thingau (*Hopea odorata*), and two in immense, Ficus-encircled, old teak trees. The height of the nest holes from the ground varied from 25 to 70 feet, and the trees selected were invariably close to some Ficus in fruit.

To five of the nests I ascended myself, and found the opening much narrowed in every one with a plastering of earth, leaf-mould, and the birds' own droppings. The stench of decaying vegetable matter from one or two of the nests was quite unbearable, and altogether the inside of the nest and the old hen themselves presented a filthy sight; but these latter were all able to fly when released and did not seem a bit cramped. The way, though they hissed and quacked and fought for their eggs, was a caution; my arms are black and blue from their ferocious digs and bites. In a few cases the males came and looked on, but took no part in the fight, not even to the uttering of a croak in encouragement to their mates.

The eggs vary in color from a dead, somewhat chalky, white to the dark rusty shade of a hard-set Shell-Ibis' egg. Of course, those of the latter color were rather sat upon, but the

color depends, I think, more on the nature of the wood of the tree chosen for the nest, and the material used in the plastering, which, by the way, is well laid on inside as well as round the opening to the hollow, than upon the length of time the eggs have been laid; for two eggs out of the lot I procured had the chicks almost ready to break through, and are yet only of a dull white, but slightly stained, while again two other eggs are of the color of iron rust all over, and these, though undoubtedly hard-set, were still easily cleared, but they were taken out of a hollow in a Thingau tree, the wood of which gives off a rusty stain.

All the eggs have a perceptible gloss, except one. Some slight, one a perfectly fresh egg is comparatively very glossy. The exceptional non-glossy egg is rough, almost like sand-paper to the touch. All are very finely pitted over their whole surface, and some have little raised tubercles or lumps chiefly in a zone round the centre. In shape some are long and narrow and much pointed at one end—some short and globular. The largest eggs were those found singly, and of these one measures 2·75″ × 1·98″—the smallest taken measuring 2·40″ × 1·93″; but the average of twelve is 2·62″ × 1·88″. It is remarkable that even the chick in the egg has a well-marked protuberance above the upper mandible—the rudiment, it would seem, of the future casque.

142.—Hydrocissa albirostris, *Shaw.*

I was rather too early for the eggs of this species. Out of many nests examined only two contained eggs, and these two only one each. What the full complement may be I am ignorant. Myat-jo says four—possibly; but once before I took the eggs of this species, and that was later on in March, and then there were only two, but that was up in the northern jungles near Hpapoon, where possibly they breed later. I have described the nest and eggs before (*vide* S. F., Vol. V, p. 84), so have nothing to add except that the present eggs were found in hollows in Kanyin trees (*Dipterocarpus alatus*) standing dead and partially burnt in an old cultivation clearing or *hpanzoli*. One nest must have been fully at the height of one hundred feet above the ground—the other not half that. The eggs measure 2·04″ × 1·37″ and 1·84″ × 1·39″ respectively.

144 *bis.*—Ocyceros tickelli, *Blyth.*

I have already detailed above the finding of the nest of this species. Visiting it later on I was able to secure the female, and no less than five eggs, all fresh. This, I fancy, must be the full

complement, and is more than any Hornbill of my acquaintance lays. On my second visit the male was nowhere about, and the female only hissed, and bit a little, poor thing. The hollow, as I have said before, was in a Pynkado tree, and not above twelve feet from the ground. This is surprising, especially as the other two nests examined were also at heights of less than 20 feet, and all in small trees. Considering how wary and wild the bird usually is, this is inexplicable. The material used for partially blocking up the entrance seems, in this bird's as well as in the case of *R. undulatus*, *R. subruficollis*, and *H. albirostris*, similar to that employed by *D. cavatus*.

The eggs are faintly glossy white, finely pitted like those of the large Hornbill, but none have the raised little tubercles apparent in some eggs of the latter. In shape the five eggs as yet taken are all alike long ovals. They measure respectively 1·75″ × 1·33″, 1·75″ × 1·30″, 1·88″ × 1·40″, 1·82″ × 1·35″, and 1·83″ × 1·38″.

146 *bis*.—Rhyticeros undulatus, *Shaw*.

I was unfortunate with this bird. Only one out of three nests examined contained eggs, and again when I secured these latter, the female managed to elude us by getting up well into the hollow above, which was in a huge dead Thingau (*Hopea odorata*). I took the eggs and foolishly left two Karens to cut down the tree and bring me the female. Bad scran to them they did so, but spoilt her for a specimen, pulling out the whole tail in dragging her out. However, I have kept the head, the beak of which straight from gape to point measures 6·43″, so there is no mistake. The two eggs taken are miniatures of some of *D. cavatus*, but they seem to be broader in proportion to their length than the majority of eggs of the latter species. They measure respectively 2·28″ × 1·65″, and 2·22″ × 1·64″.

146 *ter*.—Rhyticeros subruficollis, *Blyth*.

As I have already mentioned, I have as yet taken no eggs of this species, though I found several nests which were precisely like those of *R. undulatus*, but in immense high trees and far more secure than the nests of any other species from the height and inaccessibility of the localities chosen. The entrance holes were closed up exactly in the same way as in the case of the others, with a plastering of mud, etc.

Ornithological Observations in Sikhim, the Punjab, and Sind.

By W. Edwin Brooks.

Having obtained two months' leave. with the intention of spending it with my late friend Major Cock at Shillong, his untimely death caused me to alter my plans and go to Darjeeling instead.

My principal object was to get a good series of my new *Reguloides mandellii*, and to note carefully its voice and habits. In this I was disappointed, for I only got one example, and this a rather faded one, near Punkabaree, and I don't remember hearing its note. Major Cock assured me that it is found at Shillong at all times, and the three first specimens obtained of the species were Shillong birds. They were procured by Mr. Cockburn, then in Mr. Hume's service as a collector.

For collecting small birds, it is very necessary to have a small gun. The one I use is a double-barrelled 24 bore, and the barrels are 2 feet 3 inches long. They were longer, but shooting badly, I cut them down 3 inches, and now the shooting is every thing that could be wished.

Hard wadding should not be used for little birds, but a little ball of soft paper or ordinary newspaper, worked till its stiffness is gone. I load with half a dram of powder, then the paper wadding, and on this the same bulk of dust shot as powder, and more paper wadding to keep it in. This charge does for all ordinary small bird shooting; but if I am shooting where the trees are very high, I increase the charge up to $\frac{3}{4}$ or even one dram, and shot in the same proportion.

I very rarely damage a bird so much that it won't make a fair specimen. Using an ordinary Fowling Piece, small birds are, as a rule, smashed or missed.

The Darjeeling hill shikaries have an ingenious device for calling small birds within shot. They use a small bit of bamboo pipe, with which a whistle is made resembling the call-note of a small owl. I used this whistle, and sometimes I was surrounded by so many inquisitive little birds of all sorts that I hardly knew what to fire at first. The two birds that evidently have the greatest antipathy to the owls' call are *Reguloides maculipennis* and *Ixulus flavicollis*. The hillmen also imitate the cry of distress a small bird makes when seized. This cry invariably brought number of others to the assistance of the supposed bird in distress, and on one occasion it brought a fine

female *Accipiter melaschistos* that flew round and round us till I shot her.

At and near Darjeeling, I came across about fourteen species of the *Leiotrichinæ*, and was struck with the very distinct voice of each. It may be taken as a certainty that distinctness of voice always involves entire specific distinctness; but on the other hand, apparent similarity of note does not prove identity, but only affinity. For example, the Black and White Wagtails (*Motacilla*) have wonderfully similar notes; so have the *Budytes*, and the Larks, *Alauda*. The notes of the Pipits are more distinct. The Sparrows' chirp is the well-known one everywhere, and it is not everyone who could distinguish the chirp of *Passer flavicollis* from that of *P. indicus;* or, again, from that of *P. montanus*. Yet these Sparrows with similar voices are as specifically distinct as they well could be.

The notes of the different Stone Chats are wonderfully alike, but I believe even these are all quite distinct. In the Phylloscopine group there is a very great variation of voice with each species, and this is a great help, as some of them are so closely affined. I believe, however, that the Broad-billed Hypolais group have similar call-notes; certainly *H. rama* and *H caligata* have almost the same reed-warbler-like "tchack." All these birds, however, sing well, and their songs may vary considerably.

With these few observations I shall begin my list of species noticed.

The numbers are those of the Editor's list, Vol. VIII., page 81 of STRAY FEATHERS.

10.—Falco sacer, *Gm.*

I saw two or three Falcons with whitish heads sitting on corn stacks near the line of Railway between Saharunpore and Sirsawa. To me they appeared to be Sacers.

27.—Aquila mogilnik, *S. G. Gm.*

Several seen near Rohri.

28.—Aquila clanga, *Pall.*

About Rohri in Scinde, and at Saharunpore. I have an egg of this species taken by my friend Otto Möller in the Sikhim Terai.

29.—Aquila vindhiana, *Frankl.*

This bird was very common about Mooltan.

32.—Neopus malayensis, *Reinw.*

I shot a very fine one below Darjeeling, but failed to get it; it went so far down the khud.

36.—Limnaetus nipalensis, *Hodgs.*

I procured two near Darjeeling: both in young plumage.

39.—Spilornis cheela, *Lath.*

Shot a very fine one near Saharunpore; agrees with a Muddapur one.

40.—Pandion haliaëtus, *Lin.*

Saw this bird frequently near Sukhur in Sind.

41.—Polioaëtus ichthyaëtus, *Horsf.*

This is common in the Sikhim Terai, and Mr. Möller has taken its eggs there.

42.—Haliaetus leucoryphus, *Pall.*

Saw this at Rohri in Sind, and at Saharunpore.

45.—Buteo ferox, *S. G. Gm.*

Pretty common in Sind, and near Saharunpore.

47.—Buteo plumipes, *Hodgs.*

I shot two near Darjeeling: both in young plumage.

56.—Milvus govinda, *Sykes,*

By which I mean the large 26-inch Kite described by Sykes, and identical with one of his types in the Kensington Museum. I saw this bird at Saharunpore and in the Sikhim Terai.

56 *ter.*—Milvus affinis, *Gould.*

I omit *Milvus melanotis*, No. 56 *bis*, of Mr. Hume's list, as *melanotis* is properly a synonym of *govinda*.

The small dark Kite is found at Darjeeling, all over India, the Punjab, and is common in parts of Sind. There is a very great variation in colour and size, and young birds are much varied under the wings. It is only very old birds that present the uniform sooty appearance so often seen in Calcutta Kites.

Milvus govinda, the Large Kite, also varies much in size and colour. Sometimes it is almost without the white patch

under the wings, being only mottled with white there. If Mr. Hume were to shoot numbers of the Lesser Kite* at different places, he would find there is no room for a third or intermediate species between *govinda* and *affinis*.

Mr. Hume still clings to the idea that Sykes's bird is the small one, so I reproduce the original description as follows:—

"**17.—Milvus govinda.**

Milv. capite, nuchâ corporeque subtus rufescenti brunneis, plumis in medio fusco lineatis; dorso, alis, caudâque satis furcatâ saturatè brunneis, illarum pteromatibus pallidioribus, hac fusco obsoletè fasciato.

Longitudo *corporis* 26 unc., *caudæ* 11."

With such a total length, *exactly that of the big Kite, and with such a tail*, how can this description apply to the Lesser 22-inch Kite? Then, again, one of Sykes's two types is the Large Kite, and labelled *govinda* by Sykes himself, so the two proofs combined ought to settle the matter I think. Messrs. Gurney and Hume having made a mistake with their three Kites, all the ornithological world seems committed to the error. As in the fashionable delusion of "*Pipastes agilis*," so with that of a small *Milvus govinda* there is no knowing when it will end. One thing I am sure of—the term *melanotis* has no more right to stand for the Large Kite than I have.

It will make this list too long and wearisome to note all the birds I saw, so I shall pass on to those requiring notice.

124.—Coracias affinis, *McClell.*

This species has only five light blue bars on outer primaries, while *indicus* has six; *i.e.*, six feathers have the patch of pale blue. *Affinis* is a larger bird, and much more beautiful. The very different backs and breasts are quite enough to separate them.

Mr. Möller found a pair at a nest, one being *indica* and the other *affinis*. This, however, does not prove identity any more than the interbreeding of the Red and Black Grouse does.

Coracias indica, a Sehwan (Sind) bird, is very pale.

127.—Pelargopsis gurial, *Pears.*

This is not uncommon about Siligoree and at places in the Sikhim Terai.

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* It is a pure waste of time to go on discussing this point, but I may say that my conclusions were arrived at with a series of more than 100 Kites from all parts of India before me. It is my friend Mr. Brooks who has never had a really large series before him. As a fact there are three recognizable races, you may make 1, 2 or 3 species out of them, just as you prefer.—A. O. H.

134.—Alcedo bengalensis, *Gm.*

Common in the Sikhim Terai, and also about Saharunpore. I saw number of Kingfishers in Sind, but had not time to shoot one.

135 *quat.*—**Alcedo meninting,*** *Horsf.*

This is not uncommon in the Sikhim Terai.

223.—Arachnothera magna, *Hodgs.*

Below Darjeeling towards the Teesta, and about Punkabaree, towards the foot of the Himalayas, this kind is common. It is easily called by the bamboo whistle afore described.

234.—Cinnyris asiatica, *Lath.*

The yellow parts of Sind examples are grey white! Instead of being black and yellow, as here in winter plumage, they are black and white. I am almost sure this Sind species is not *asiatica*, and the bill too is shorter. I shot *C. asiatica* in full plumage in the Sikhim Terai, in the first week of January.

253.—Dendrophila frontalis, *Horsf.*

This is common about Punkabaree in Sikhim.

258.—Lanius tephronotus, *Vig.*

Near Darjeeling, and rather common down towards the Teesta River.

278.—Dicrurus albirictus, *Hodgs.*

This was not uncommon at Salbaree in the Sikhim Terai. There is also another species there, with longer tail, and not having the white rictal spot. I procured specimens of each. Both breed there. The long-tailed bird is not the Himalayan North-West bird, *D. waldeni*, Beavan, but *D. longus*, Horsfield, referred to in Jerdon's Birds of India, Vol. III., page 871.† A male was 12½ inches long; wing, 6·15; tail, 7·25.

294.—Chelidorhynx hypoxantha, *Bly.*

This little Flycatcher was very plentiful in the Sikhim woods. It is very tame.

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* Probably the form which most nearly approaches *A. beavani*, *vide* S. F., IV., 287, 383; VI., 84.—A. O. H.

† Mr. Brooks overlooks all that has been written on this group. *E. longus*, Tem. (not Horsf.) is the Javan form. The birds he refers to, if separated, must stand as *cathoeca*, Swinh.—A. O. H.

295.—Culicicapa ceylonensis, *Swa.*

Is found in the lower hills as well as in the plains of India during the cold season.

304 *bis.*—Cyornis poliogenys, *N. Sp.*

Description.—Length about 6 in.; wing, 2·75; tail, 2·4; bill at front, ·43; from gape, ·7; tarsus, ·72; 3rd and 4th primaries longest, 2nd equal to 8th.

Head greyish brown, shaded into olive brown of back; tail reddish brown, and reddest towards base; sides of face and neck greyish brown or rather brownish grey; this reaches to a little beyond the ear-coverts; a broad stripe of dull yellowish white from the chin to upper breast, where it is shaded into the deeper dull buff or ochraceous colour of the breast and flanks; centre of abdomen dull whitish including lower tail-coverts; wings dark brown, with rufous tinge; bill black; legs and feet pale brown.

I shot this bird at Salbaree in the Sikhim Terai, and also saw five or six of them in Mr. Mandelli's collection. My bird was a female. As no blue bird corresponding with it has as yet been found, it is probable that the sexes are alike; but I am inclined to think the blue male will be found; for it is a true skulking *Cyornis*, like *rubeculoides*, and not a bird that sits on the top spray of a tree like *Cyornis ruficaudus*. In general appearance, it somewhat resembles the female of *C. rubeculoides*, but it is larger, and *rubeculoides* has not such a pale throat contrasting strongly with the rufous breast. The breast of *rubeculoides*, too, is very red, while that of our bird is a dull yellow ochre; the axillaries and wing lining of *rubeculoides* are much lighter in colour, and the belly of *rubeculoides* is pure white, which is not the case with our bird; but apart from these differences, the new bird is decidedly larger.

311.—Muscicapula astigma, *Hodgs.*

I procured this bird at Darjeeling in October, and I have also met with it in the plains at Muddapur in the cold season. Sometimes it has a supercilium and sometimes, but more rarely, no supercilium. I am of opinion that *M. ciliaris*, Hodgson, should be suppressed, as it is the more common form of *M. astigma*.

312.—Muscicapula sapphira, *Tick.*

I shot several at Punkabaree, Kursiong, and at Darjeeling in October. Twice I shot a fine old blue male and failed to find it.

313.—Nitidula hodgsoni, *Moore.*

In December this little Flycatcher was found in the low valleys near the Teesta, and not up about Darjeeling.

314.—Niltava sundara, *Hodgs.*

I got one at Punkabaree in the beginning of January.

315.—Niltava macgregoriæ, *Burt.*

This also retires to the low valleys in the cold weather.

318.—Siphia tricolor, *Hodgs.*

This is clearly female and immature male of *Siphia leucomelanura.*

321.—Siphia superciliaris, *Bly.*

I procured one at Punkabaree, a female.

326.—Erythrosterna maculata, *Tick.*

I procured this from Punkabaree to Darjeeling, and I saw it in the Sikhim Terai. I have also obtained it at Muddapur.

E. pusilla, Blyth, is only the female of this species. *E. acornaus* is, I believe, the female of *M. superciliaris.* At all events we don't meet with any distinct species like *acornaus* now-a-days. All the examples of *E. pusilla* that I have sexed were females. The rufous about the tail and edgings to coverts fades very much at times, till the bird becomes quite ashy in appearance. To look at a fresh autumnal female of *E. maculata* and a weathered summer one, no one unaccustomed to them would think they were the same bird.

328.—Tesia cyaniventris, *Hodgs.*

This was found in the low valleys in December.

333.—Troglodytes nipalensis, *Hodgs.*

This bird has very much stouter legs and feet than my Cashmere *T. neglectus,* and is altogether of darker-toned plumage. It frequents the dismantled barracks on the top of Senchal hill near Darjeeling, and when disturbed goes up the old chimnies. It is a wonderful bird for hiding.

341.—Hodgsonius phœnicuroides, *Hodgs.*

I shot one at Punkabaree. It came to the bamboo call.

343.—Myiophoneus temmincki, *Vig.*

I procured one or two at Punkabaree.

350.—Zoothera monticola, *Vig.*

One obtained down near the Teesta.

352.—Petrophila erythrogastra, *Vig.*

I got two or three near Darjeeling.

356.—Turdus unicolor, *Tick.*

Near Darjeeling; this is as true a *Turdus* as could be. Quite as much so as the Redwing.

365.—Turdus atrogularis, *Tem.*

Common at Darjeeling, and also about Saharunpore in the cold weather. The note is harsh and fieldfare-like.

368.—Turdus hodgsoni, *Lafr.*

I think this bird distinct from the European Missel Thrush; less green and larger; longer bill. There are several small points in which it does not agree with *T. viscivorus*.

388.—Alcippe nipalensis, *Hodgs.*

Below Darjeeling.

391.—Stachyris nigriceps, *Hodgs.*

Below Darjeeling.

393.—Stachyris ruficeps, *Bly.*

Very common about Darjeeling, but replaced lower down at Punkabaree by *S. rufifrons*, Hume. As long as it finds dense ground cover, it does not seem to be very particular about elevation, though at Punkabaree, I only noticed *rufifrons*. Like *S. pyrrhops*, this bird has a low soft whistle. It responded very readily to the owl-call made by using a bit of small bamboo.

395.—Mixornis rubricapillus, *Tick.*

This bird is not common. I only procured one near Punkabaree. It affects ground cover, and in notes and habits seems closely affined to *Stachyris*.

In Sikhim, I saw numbers of *Garrulax* and *Trochalopterum*, but I shall not notice them, except to say, that they respond very readily to the owl-call.

432.—Malacocercus terricolor, *Hodgs.*

One or two I shot near Sukhur in Sind appear to be this species.

438.—Chatarrhæa caudata, *Dum.*

Obtained near Mooltan, and also at Sehwan; I saw it also at Sukhur.

443.—Laticilla burnesi, *Bly.*

I shot this bird in tamarisk jungle where it was intergrown at the roots thickly with long grass. It is very difficult to shoot,

as it conceals itself so quickly, and does not leave its grass bush till almost trodden upon. It is not uncommon near Sukhur.

448.—Hemixus flavala, *Hodgs.*

Near Punkabaree.

451.—Criniger flaveolus, *Gould.*

Near Punkabaree.

456.—Rubigula flaviventris, *Tick.*

At the same place.

458.—Otocompsa leucogenys, *J. E. Gr.*

At Punkabaree.

459.—Otocompsa leucotis, *Gould.*

Sukhur in Sind.

460.—Otocompsa emeria, *Lin.*

Punkabaree.

466.—Phyllornis hardwickii, *Jard and Selb.*

Punkabaree.

468.—Iora tiphia, *Lin.*

Sikhim Terai.

474.—Oriolus trailli, *Vig.*

Darjeeling.

483 *bis*.—Pratincola robustus, *Tristram.*

All the Sikhim Terai Stonechats were of this species. I shot a number, and even the females are large fine birds and most conspicuously distinct from the little *indicus*. I obtained a very fine male at Saharunpore in the North-West Provinces, and close to it I obtained *indicus*.

P. robustus is even a more rufous bird than *rubicola* and larger as a rule. There is no doubt whatever that we have two allied Stonechats. I have a series of 38 collected from Howrah to Sind, and also in the Sikhim Terai, and in Sikhim. The large bird frequents the plains near the hills, and especially haunts ground rather marshy, where there is an abundance of long dry grass. This bird measures about 5·5 in length, and has a wing from 2·75 to 3·0. I have a female with a wing 2·9. The tails measure about 2·2 as a rule. The long broad tail at once strikes an observer as he sees the bird sitting on a tall grass stem. The female is very dark toned and rufous, and the autumnal rufous

edgings to the upper plumage of the males is very much redder and darker than in *indicus*. The usual wing of *indicus* (♂) is about 2·65, and its tail 1·9. Jerdon gives the wing as $2\frac{3}{4}$, and the tail $1\frac{3}{4}$. The rich dark tone of the larger bird, and especially its conspicuous difference in autumnal plumage, and its large fine female corresponding in tone to the male, lead me to keep it distinct.

The bird is, of course, the *P. robustus* of Tristram. Undecided examples may be met with, large *indicus* or small *robustus*, which would be difficult to classify, but such difficulty is no reason for ignoring a good species which *P. robustus* certainly is.*

Between Sind and Bengal examples of *Pratincola indicus* there is not the slightest difference, and a Sukhur or Mooltan bird could not be separated from a Muddapur or Saharunpore one. I obtained both *P. robustus* and *P. indicus* near Saharunpore, but only *P. robustus* in the Sikhim Terai. I have, however, a decided *P. indicus* from Darjeeling.

484.—Pratincola leucurus, *Bly.*

I found this bird near Sukhur on the low land near a backwater of the Indus. I found it where a blue vetch was growing, and these vetch fields were studded with small Tamarisk bushes. The ground had partially dried, and was full of large cracks, a few inches wide, and a couple of feet deep or so. Several of the wounded birds got into these cracks, and I never recovered them. By dissection of the females I think the eggs would have been laid in little more than a month, and the *testes* of the male were considerably enlarged. I think that it cannot breed later than March, or perhaps in the end of February. Whether it remains in Sind to breed, or migrates to the north, is an interesting question, which I suppose will never be solved till we have more active ornithologists than India now possesses.†

486.—Pratincola ferreus, *Hodgs.*

I found this about Darjeeling in December, and I also saw it near Saharunpore. Some few appear to migrate to the plains in the cold weather. I have also shot this bird in the Etawah District on the banks of the canal. It is rare in the plains.

488.—Saxicola opistholeucus, *Strickl.*

I obtained it at Mooltan.

* The whole question has been fully discussed, S. F., V., 242.—A. O. H.

† A more active Oologist than Mr. Doig, (*vide ante* p. 369) working in this very neighbourhood too, it would be difficult to find.—Ed. S. F.

489.—Saxicola picatus, *Blyth.*

Mooltan, Sukhur and Sehwan. It is the commonest Chat of the country; and at Sukhur one lived in the verandah of the dâk bungalow, and I was amused to see him nodding his head and wagging his tail, at my bird-skinner who sat at work two or three yards below the Chat: whether the sight of fresh meat pleased him, or he was protesting against the barbarous operation, no one knows. I remember at Etawah, when I threw away some small birds' bodies that one or two small sylvine birds used to eat them. My fowls here, however, did better,—they picked the body of a good-sized hawk pretty clean.

491.—Saxicola isabellinus, *Rüpp.*

I saw this bird near Mooltan.

491.—Saxicola kingi, *Hume.*

Two were shot at Sehwan.

492.—Saxicola deserti, *Rüpp.*

I procured a very fine male in perfect plumage, with as black a throat as could be, at Sehwan in January.

497.—Ruticilla rufiventris, *Vieill.*

Common in the Punjab, and also at Sukhur in the large Babool wood.

503.—Ruticilla frontalis, *Vig.*

Very common at Darjeeling, even when there is hard frost.

505.—Rhyacornis fuliginosus, *Vig.*

I saw this on the canal near Saharunpore.

506.—Chimarrornis leucocephalus, *Vig.*

Above Kurseong in December.

507.—Larvivora superciliaris, *Jerd.*

I obtained one this year at Muddapur in the plains.

508.—Nemura cyanura, *Pall.*

Not uncommon about Darjeeling. This bird conceals itself very much. It answered the owl's-call very well.

511.—Tarsiger chryseus, *Hodgs.*

Affects dense bush jungle near Darjeeling. It came to the owl's call.

512.—Calliope camtschatkensis, *Gm.*

I shot one at Darjeeling in December. It came repeatedly to the owl's call.

514.—Cyanecula suecica, *Lin.*

Not uncommon about Sukhur in the Tamarisk jungle. It has a sweet song.

526.—Horornis fortipes, *Hodgs.*

This is common in Sikhim from Darjeeling to Punkabaree, and all over Sikhim, I expect.

Its habits are very Wren-like, and quite different from *Dumeticola*. The note is not unlike the "teack" of a reed-warbler. It affects ground cover entirely. No bird came more readily to the call than this.

It is quite a distinct bird from my *Horornis pallidus* of the North-West and Cashmere. I don't see any difference between the genera *Horornis* and *Horeites*. These birds are one and all *Horornis*. I examined Mandelli's example of *Horornis flaviventris;* it is a true *Horornis*.

Dumeticola or *Schœnicola mandellii*, Brooks.—I examined this bird again when at Darjeeling—one of the types, and a few others. It is not *S. brunneipectus* of Blyth. His bird I take to be unspotted *S. affinis*, Hodgson. Blyth's original description is as follows :—

"Dumeticola brunneipectus, *Sp. Nov.*

Size and form of *D. affinis*, and the upper parts are of the same uniform dark olive brown color; lores, chin and throat, and middle of the belly pure white; sides of the throat, breast, flanks, and tibial plumes rufescent brown; lower tail-coverts brown, with broad pale tips, though considerably less broad than are the white tips to the lower tail-coverts of *D. affinis*.

Hab.—"Himálaya?"

Now it is to be noticed that my bird is a *larger* bird, with a *longer* tail.

It is not of the same "*dark olive brown*" above as *D. affinis*, but much lighter and redder. It is not a spotless bird, but has small spots on the breast, of a different character from those of *D. affinis*. In make and colour, it is closer to *Tribura luteoventris*, Hodgson, than to *D. affinis*. I again contend that it is a good species. I have not the slightest doubt about Blyth's species being the unspotted form of *D. affinis*. All these birds, except *Tribura luteoventris*, appear to have a spotted and an unspotted stage.

Tribura as a genus should be suppressed. It is pure *Dumeticola* or *Schænicola*.

530.—Orthotomus sutorius, *Forst.*

This little bird appeared to be as much at home near Darjeeling as in the plains of India, in spite of the cold.

536.—Prinia gracilis, *Frankl.*

This I have clearly ascertained to be the winter plumage of *P. hodgsoni*, Blyth—the former term stands.

I shall leave to Mr. Hume the troublesome task of thinning the *Drymœca* group, which is in great confusion. I shall only remark that all these birds have a summer and winter plumage so distinct that they might be taken for different species by those not well acquainted with them.

550.—Burnesia lepida, *Blyth.*

Mr. Hume still quotes the name of the African species, *B. gracilis*, Licht., for this bird. I again state that I carefully compared the two in Canon Tristram's collection, and their immensely different eggs, and I found the two birds as distinct as chalk is from cheese. *Gracilis* is a *larger* and *redder bird*, and its egg is *red* and *Prinia-like*, while that of *lepida* is of a greenish ground colour, spotted with brown.

553.—Hypolais rama, *Sykes.*

I shot one in the Babool wood at Sukhur.

554.—Phylloscopus tristis, *Blyth.*

I obtained this bird at Mooltan, heard it at Lahore, and found it not uncommon at Sukhur, but more plentiful at Sehwan. It is common in the Muddapur District of the East Indian Railway, where I live, and I find it principally where there are Babool trees. It is partial to the rows of peas in gardens, and to fields of mustard, especially when they are in flower. The song of this bird is very pretty and cheerful.

554 *ter.*—Phylloscopus sindianus, *Sp. Nov.*

Description.—Above uniform dull brown, rather lighter than in *P. tristis*, and much the colour of the upper surface of *Hypolais rama*; below, albescent, with a ruddy tinge on the pale supercilia, sides of face, neck, breast, and flanks; axillaries, and ridge of wing, yellowish white, sometimes almost quite white, and not pure sulphur yellow, as in *P. tristis*; no greenish on bend or shoulder of wing, nor any green edging to

primaries, secondaries and tail feathers generally observable in *P. tristis;* no greenish tinge on rump, as in *tristis:* like *P. neglectus* and *H. rama*, the uniform light greyish brown upper surface is characteristic: in form of bill this bird is a pure *Phylloscopus*, like *tristis*. By a pure Phylloscopine bill, I mean a thin slender one, not a broad one, as in *nitidus* and *viridanus*.

The bill of *sindianus* is dark brown, and yellowish towards base of lower mandible; legs and feet dark brown; irides dark brown.

Length of males ...	...	4·40 to 4·70
„ „ females...	...	4·20 to 4.45
Wings of males ...	...	2·22 to 2·4
„ „ females ...	...	2·05 to 2·15
Tails of males ...	...	1·85 to 2·05
„ „ females ...	...	1·75 to 1·9
Tarsus of males ...	...	·75 to ·8
„ „ females ...	...	·71 to ·75
♂ Bill at front ...	...	·3 to ·35
♀ „ „ „ ...	...	·29 to ·3

The 2nd quill of the wing is about equal to the 9th and sometimes 8th; 4th, and sometimes 4th and 5th equal and longest.

This bird much resembles *P. tristis*, but conspicuously differs as noted in the description. The females have still less yellow under the wing than the males, and some show quite white there.

The *longer*, *broader* and less pointed first or bastard primary is a good mark by which to distinguish our bird from a pale *tristis*. Sometimes *tristis* is pale altogether, and as slightly yellow and green as *sindianus*, and then attention to the size and shape of this small feather is of use.

The note of the new bird is a loud, clear, truly Phylloscopine *tis-yip*, shriller than that of *trochilus* and much louder. As well as I remember, the "too-wit" of *Reguloides occipitalis*, the note it always utters when an intruder comes near, is very similar to the common note of *sindianus*. Its note is most striking, and can be heard easily quarter of a mile away. *Tristis* has no such note, only a faint, shrill, sibilant note somewhat like that of a creeper or hedge accentor. I don't refer to song at all, and have not heard the song of the new bird, if it has one.

I discovered *P. sindianus* near Sukhur in the following manner:—About two miles from the town, and near the river where a long backwater flows in from the Indus, there is a very extensive Babool wood of fine old trees, which are now

being rapidly destroyed by Government officers, and I don't know that any are being planted to take the places of the old trees. What a dreary treeless waste India will be in a few years more. I searched this wood one afternoon for *Phylloscopus neglectus*, and I never came across a single one; but I got a few Common Whitethroats (*C. affinis*), some Redstarts (*R. rufiventris*) and other common birds. I was much disgusted, for this fine Babool tract looked a likely place for *P. neglectus*, and it was this bird, above all others, that I had come to Sind to get. Before I reached the Babool wood, I had passed through a very large field that had been inundated land, and which, as the waters left it, had been sown with a blue vetch. Scattered here and there over this vetch field were little Tamarisk bushes, and I noticed a few Stonechats perched on them. I shot a few and got a pair of *Pratincola leucurus*, a *Pratincola indicus*, and I also put up and shot a few *Burnesia lepida*. Here and there an *Anthus blakistoni* got up, of which I shot one or two. When the sun had gone down, I walked back to Sukhur, wondering where *P. neglectus*, Hume's little Sind *Phylloscopus*, could be found. Next day I resolved to go and search the Babool wood again, and to try the vetch field on the way to it for more *Pratincola leucurus*. I did not find a single Stonechat, and after passing the cultivated low land, I noticed an extensive tract of tamarisk jungle to the right of the Babool wood, and on the lower land nearer the river and its backwater. The Tamarisk bushes were from 10 to 15 feet high, and in many parts of this jungle grass grew pretty freely below the Tamarisk trees. As I entered this jungle, I was struck with the note of a very active *Phylloscopus*, and on shooting one, it appeared to me at a first glance to be *P. tristis*; but I had never heard *tristis* utter such a note. On opening out the wing, I did not see the usual light yellow ridge of wing and axillaries, but these parts were nearly white, so I shot several more, in each case distinctly hearing the new note before I fired. All that I shot corresponded with the first bird obtained. I then heard, a little further on, the well-known note of *P. tristis*, and I most carefully shot it, just as it uttered its feeble call. It had the bright yellow ridge to wing and the sulphur yellow axillaries. I then felt quite sure that I had got a new species closely allied to *tristis*. But this was not my only good fortune that day. While after the new bird, another little bird uttered a soft cheering note, something like that of *Curruca affinis*, but fainter. Its notes were very whitethroat-like. Expecting to see some sort of a *Curruca*, I got a glimpse of it

with some little trouble, as it got very rapidly out of my way. A very diminutive bird caught my eye, much smaller than I expected from the note, but before I could shoot it, it was away as hard as it could go. I went after it, as hard as I could go, for my curiosity was thoroughly roused, and at last I shot it; when in hand, I found it was the long-looked-for *Phylloscopus neglectus*. When once I knew the note, I soon got a few. The voice and manner of this little bird are not at all Phylloscopine. In structure it is *Phylloscopus*, but in voice and very restless habits it is much more like *Curruca*. However, it is just as much a *Phylloscopus* as *P. fuscatus*, and in *Phylloscopus* it may very well remain where Mr. Hume has placed it, as there is no use in multiplying genera which are merely terms of convenience, and we have already twice too many of them. It is troublesome enough to have to remember specific terms wholesale, but to have to remember a host of new-fangled generic terms is intolerable, and makes the study of ornithology intensely disagreeable, when it should be purely a pleasure.

Next day I decided to go again after the new *Phylloscopus* and *P. neglectus;* and I did get a very good series of the latter, but a poor one of the former. In low ground, more towards the river, where there were another vetch field and one of mustard, I got a few *Pratincola leucurus*, males and females. I then went into a different tract of Tamarisk jungle, but it was smaller, and the trees were so very close together that walking through them was very difficult. There were many *P. sindianus* in this jungle and some *P. tristis*, but I could not manage to shoot them in such a place, so I left it, and crossed over to the original jungle where it had been cleared away in places for firewood. I got a fine series of *P. neglectus*, and a few more of the new bird; in the same jungle were a few *Cyanecula suecica* that were singing very prettily.

I am sorry I did not stay at Sukhur to get a more complete series of the new bird instead of going on to Sehwan, where I did not do well. There is a backwater of the Indus at Sehwan that communicates with the Munchur Lake, and on its banks are tracts of Tamarisk jungle. As I passed along in a boat, I heard the note of *P. sindianus* very distinctly several times; so it is to be found there too; and I have no doubt over all suitable places in Scind. Now to what country do *P. sindianus* and *P. neglectus* go to breed? We know that *tristis* breeds in Ladâk, and also in Siberia.

There was a fine Babool grove near Sehwan near the back-water of the Indus, and I shot a few *P. neglectus* there; but in

a small Tamarisk jungle adjoining the Babools they were much more numerous. Nearer the water were some wheat crops, and in them I saw a number of *P. tristis*. Mixed with the wheat was some mustard, and this was the attraction for the chiff-chaff.

554 *bis*.—Phylloscopus neglectus, *Hume*.

As I have already described the finding of this little bird I need not say more on that head.

Males measure from	...	... 3·75 to 4·10
Females „ „	...	... 3·7 to 3·85
Wings of males	...	... 2 to 2·1
„ „ females	...	... 1·85 to 1·95
Tails of males	...	... 1·58 to 1·65
„ „ females	...	... 1·51 to 1·55
Tarsi of males	...	... ·72 to ·75
„ „ females	...	... ·7
Bill at front	...	... ·27 to ·28

The eye is the full dark one of a *Phylloscopus*, and not the yellow brown one of a *Curruca*. The plumage, as described by Mr. Hume. The upper plumage is greyish brown like *H. rama*, and the lower parts are greyish white. A few have the superclium and the forehead slightly tinged with yellowish. Bill, legs and feet very dark brown, almost black.

It is the most timid and watchful little sylvia I ever met with. The moment it hears the intruder, it begins to mount its bush vigorously, uttering its cheering note; as soon as it sees one, it flies, and the only way to get it is to run in the direction of the sound and take a snap shot the moment you get a glimpse of it.

558.—Phylloscopus lugubris, *Blyth*.

I obtained a few in the Sikhim Terai in January. It has a distinct note of its own, quite different from that of *viridanus*. It is not found in North-Western India.

561.—Phylloscopus affinis, *Tick*.

I obtained a few near Darjeeling. It seems to prefer bush jungle to trees.

565.—Reguloides superciliosus, *Gm*.

Tolerably common at Punkabaree in December and January. I heard it below Jelapahar at Darjeeling, and also at Kurseong in December. In the Sikhim Terai it was more common.

The very distinct call note of this bird, "weest," as it is aptly written by Mr. Seebohm, serves to distinguish it at once, no matter what its plumage is. I have had very ample opportunities of establishing the utterly distinct voices of *superciliosus* and *humii*, but there are men at home who pronounce them identical in spite of all the evidence I have given.

565 *bis*.—Reguloides humii, *Brooks*.

During the frosty weather at Darjeeling in December, I never met this bird, but on going down towards the Teesta River a few were seen and heard. I shot two or three and also obtained several at Kurseong, where they were much more numerous; down towards Punkabaree they were still more numerous; and it was tolerably common in the Sikhim Terai. Sikhim examples perfectly accord with some I obtained at Saharunpore in January; the Sikhim being perhaps more faded and even greyer than the North-West birds.

565 *ter*.—Reguloides mandellii, *Brooks*.

I got a single one at Punkabaree in January, and with this exception I did not meet with it on my second visit to Sikhim. To any one well acquainted with *Reguloides erochroa*, *R. mandellii* may be thus described:—General colour of plumage much the same, but yellow wing bars instead of orange, and no white feathers in the tail. The supercilium is also not quite so dull and greenish as in *erochroa*, but is a dull deep buff with very faint tinge of greenish. *R. mandellii* has very strong affinities for *R. humii*, and some of the latter are so dusky that they might be mistaken for *mandellii*, but the legs and feet of the latter are of a different colour when freshly killed, being of a sort of yellow brown and the basal part of the lower mandible of bill is dull orange yellow, not pale earth grey as in *humii*. The dark-headed bird has not been procured in the North-West at all, the head quarters of *humii*, so I think we may consider *mandellii* a good species. I heard, as I thought, quite a distinct note when I shot the type and two others, but there is the possibility that another small bird may have been near in the same tree, and I think it is desirable for the fullest investigation to be made as to its note, and the colours of the soft parts of every specimen obtained should be put on record. I have only shot four of them. Any one who can go to a place in the cold season where a few dozens can be seen and observed will be able to work the question thoroughly out, if he has a good ear for the notes of birds. Such a place

is Shillong, where the first three *Reguloides mandellii*, belonging to Mr. Hume's Museum, were obtained. My late friend, Major Cock, wrote to me that it was found there all the year round. I think, however, that this is doubtful, for its close ally, *R. humii*, retires to Alpine districts to breed. I am anxious that some keen ornithologist should complete the history of this interesting little bird, as I shall not have the opportunity of doing so myself.

566.—Reguloides proregulus, *Pall.*

This was common at Darjeeling and Kurseong during December.

566 *bis.*—Reguloides subviridis, *Brooks.*

This was common at Mooltan in January, but I did not meet with it in Scinde. It has a most distinct voice, and could always be found with certainty by the note alone. This may be said of any *Phylloscopus* or *Reguloides* with which I am acquainted. The plumage may be faded and hard to make out, but the voice is very sure.

566 *ter.*—Reguloides maculipennis,* *Blyth.*

This is the commonest *Reguloides* in Sikhim; cold and frost do not seem to affect it. I found it as far down as Punkabaree in December and January, but not much below Punkabaree.

Its note is a faint *zip*, and constantly repeated. Some *Reguloides* are silent for a long time, but this little bird constantly makes itself heard. It was one of the readiest to respond to the owl's call.

568.—Reguloides erochrous, *Hodgs.*

Not uncommon about Darjeeling and Kurseong, but I did not meet with it so low down as Punkabaree. The legs and feet are brown, with a plumbeous tinge, and the soles of the feet are yellowish. The bill is dark brown and orange on base of lower mandible. Its note is a Thrush-like *zip*, not so loud as the Thrush's note, but wonderfully loud for so small a bird. The female also has the orange wing bar, and the paler wing bar sometimes observed is not indicative of the female. I shot many, and all had the orange bar, male and female.

569.—Culicipeta burkii, *Burt.*

At Darjeeling and Punkabaree. Any temperature seems to suit it, for it is common also at Calcutta in the cold season.

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* Should stand as *chloronotus*, Hodgs, *vide* S. F. IV., 505.—A. O. H.

It confines itself to the low branches of tree jungle, and is often noticed in shady places close to the ground.

572.—Abrornis xanthoschistus, *Hodgs.*

573.—Abrornis albosuperciliaris, *Blyth.*

Unless well acquainted with the two, seen apart, they might be mistaken for the same bird, but *xanthoschistus* is of a much purer blue grey above, and *albosuperciliaris* is more of a brown grey. I obtained the former in Sikhim, and the latter on the banks of the canal near Saharunpore in January.

574.—Abrornis superciliaris, *Tick.*

This is found below Darjeeling near the Teesta and other streams in December and January. It evidently goes down for warmth.

577.—Abrornis albogularis, *Hodgson.*

The same remark applies to this species.

582.—Curruca affinis, *Blyth.*

This was common in the Punjab and Sind. Sind examples don't differ in the slightest from Punjab and Bengal ones. I did not meet with *C. althæa*, Hume.

582 *bis*.—Curruca minuscula, *Hume.*

I obtained it at Mooltan, Sukhur, and Sehwan.

Length of males.		...	4·78 to 5·05.
Wing of males	...	...	2·35 to 2·5; females 2·3 to 2·32.
Tail of males	...	...	2·05 to 2·25; females 2·05.
Tarsus	...	...	·75 to 8; bill at front ·25 to ·28

2nd primary = 7/8; 4th slightly longest; 3rd and 5th nearly equal to it.

The very small bill, the light grey head, the much paler ear-coverts, the pale sandy toned back plumage, pale coloured tail, and rather different wing formula, distinguish this bird from *affinis*. Were the latter quite as small as *minuscula*, the two would be very easily separated.

It is common about Sehwan, but confines itself more to the thorny bushes on the almost desert plains than *affinis* does. Its notes are similar to those of *affinis*, and very whitethroat-like. *Affinis* was perhaps the commoner bird of the two at Sehwan, so that I had very good opportunities of contrasting the two.

583 *bis*.—Sylvia nana, *Hemp.* and *Ehr.*

I obtained two at Sehwan, and where the desert bushes were all dying for want of moisture.

589 *bis*.—Motacilla hodgsoni, *G. R. Gray*.

I found this bird at Salbaree in the Sikhim Terai.

591 *ter*.—Motacilla alba, *Lin*.

This should be struck out of the Indian list.

Immature *alba*, and I think even the old bird in winter, have the white of the face tinged with yellow. Let any one, who can, show me Indian winter examples with this same yellow tinge. I have never seen it, and I think I have shot as many *dukhunensis* as any one.

592.—Calobates melanope, *Pall*.

In Sikhim during frost, and in the warm plains, this bird is equally at home.

596.—Anthus maculatus, *Hodgs*.

I met with it frequently in Sikhim from 5,000 feet and below in December and January; but it is rather more numerous in the plains. I did not see *arboreus*, i e., *trivialis*, in Sikhim.

605 *ter*.—Anthus spinoletta, *Lin*.

This should I think be struck out of the Indian list. It is the next species that has been mistaken for it.

605 *quat*.—Anthus blakistoni, *Swinhoe*.

Common in the Punjab. I obtained it at Mooltan, at Sukhur and at Sehwan. It frequents fields of green wheat and other crops that are kept pretty damp. Its note is very much like that of *A. pratensis*.

In winter plumage this species may be easily distinguished from *spinoletta* by the character of the breast spots, which are small and well defined, and not large and cloudy as in *spinoletta*. In summer plumage the two would be very hard indeed to separate, for *blackistoni* is not the small bird that Swinhoe's dimensions would lead one to think it is, but it is a very fine Pipit indeed, almost, if not quite, the size of *spinoletta*.

I saw some of Major Biddulph's Gilgit examples of *spinoletta*, as he had labelled them, but they were all *blakistoni*. I give below dimensions of some I obtained in the Punjab and Sind :—

Lengths of males, 6·95; 6·7; 6·6; 6·65; 6·75; 6·8; 6·8; 6·75; 6·85.

ZOOLOGICAL GARDENS 1875. CALCUTTA

Lengths of females, 6·05; 6·25; 6·20; 5·9.

Wing of males, 3·40; 3·48; 3·46; 3·55; 3·55; 3·47; 3·53; 3·60; 3·61.

Wing of females, 3·22; 3·22; 3·18; 3·17.

Tail of males, 2·85; 2·9; 2·7; 2·7; 2·6; 2·7; 2·7; 2·7; 2·7.

Tail of females, 2·55; 2·45; 2·40; 2·30.

Tarsus of males, ·85 to ·88; of female, ·83 to ·85.

Bill at front, ♂ ·5; ♀ ·45 to 47.

This is a greyish brown Pipit above, and dull whitish below. The breast spots are smaller than in *trivialis* and *pratensis*, and not so numerous: they are brown, and very much paler than those of the two Pipits named: These spots are also a little cloudy at the edge, but compared with the large cloudy spots of *spinoletta*, they are very different indeed, being only a quarter the size and darker and more distinct. The spots on the breast of *spinoletta* are very similar to those of *obscurus*. The upper surface of *spinoletta* is also a much darker and *more rufous brown* than in *blakistoni*, and the striation is not nearly so bold and distinct as that of *blakistoni*. I have only one example of *spinoletta* from Lombardy, but I have seen many others. The wing of the example before me is 3·45; tail, 2·7; tarsus, ·9; bill at front, ·45; it is unsexed.

In Dresser's Birds of Europe, the spots on the breast of the figure of the autumnal bird (*spinoletta*), are much too well defined.

Anthus blakistoni is not uncommon in the North-West Provinces of India, where it frequents the borders of jheels and lakes. It is generally found in company with the common Indian Water Pipit, *Anthus rosaceus*. This latter has a softer and less shrill note than *blakistoni*.

605 *sex.*—**Anthus ludovicianus,** *Gm.* (*A. japonicus*, T. & S.)

This is about the same size as *Anthus blakistoni*, but the colour is different. The upper surface is a dark greyish brown, striated with a still darker and blackish brown; the wings and tail are also a darker brown; the lower surface is more tinged with dull buff than in *blakistoni*, and the breast is marked with numerous fine, large oval blackish brown spots, very distinct and well defined at their edges. It is even more boldly spotted than *pratensis*, and some have larger spots than any *trivialis* has. The bill is dark brown, yellow brown at gape and on base of lower mandible: legs and feet brown, and claws dark brown. My three examples are males: Length, 5·90; 6·30; 6·40; wings, 3·43; 3·33; 3·43; tails, 2·6; 2·5; 2·6; tarsus, ·85; ·84; ·85;

bill at front ·42 ; ·44 ; ·45. A Chinese example, lent me by Mr. Seebohm, has the wing 3·48 ; tail, 2·6 ; tarsus, ·9 ; bill, ·43. In colour and mode of breast-spotting, it perfectly accords with my Indian-killed ones.

This species differs from *spinoletta* in the colder and greyer brown of upper parts, and in the large bold breast spots ; from *blakistoni*, by the darker and colder upper surface, and the boldly spotted breast.

I first procured it at Darjeeling in December. Near Darjeeling is the Senchal hill, which is about 8,500 feet high. On the top of this hill, and at its western end, is a bare grassy tract, and on this some barracks were built. The barracks are all dismantled, and only portions of the walls and the chimneys are standing. I saw a flock of Pipits feeding on the ground inside and outside one of these old houses, and on being alarmed, they flew up and perched on the chimney tops. They were very shy, and I could not get near enough to make sure of one with the charge of dust-shot that was in my small ·24-bore gun. They flew from place to place, giving me much trouble, but I wanted to identify the species, thinking they might perhaps be *rosaceus;* but I was rather struck with the shrill and very *pratensis*-like note.

A fog came on, or a cloud rather, which is the same thing on the top of a mountain, and this made the Pipits more wary than before. Through the fog they looked as large as Thrushes, and became more tempting to me than ever. I could not see where they went in the fog as they flew off, but when I happened to come near them, they always began to utter their note.

At last I thought I was within shot of one fellow, who sat on a stone with outstretched neck, and quite ready to fly and take the whole flock with him. I drew both triggers at once, and soon had the satisfaction of seeing my friend performing a series of somersaults, and on running up I saw a new Pipit with a wonderfully spotted breast. I spent an hour or two about the place searching for the flocks, but to no purpose. A day or two after I went again, and spent the whole day there, but I never saw the Pipits there again. The flock of about twenty had just been passing the place.

In the Punjab, at Mooltan, I went to some irrigated wheat fields. The wheat was about 6 inches high. This was in January ; and these fields were full of Pipits. I shot several, and they proved to be *Anthus blakistoni*, and as I had only obtained females down country, I was glad to get a fine series of males. After shooting a few, I shot one that turned out to

be the same as the Senchal bird; so I went again the next day and spent most of the day in the wheat fields, getting one more of the present species, and several more of *blakistoni*. They were both very wary, and I had to shoot them flying. I have no doubt but that this bird is to be found over a good part of India, but most collectors are so fond of the shot at a large bird in a tree, that they don't take the trouble they ought to do with ground birds, especially with those that conceal themselves in ground cover and low bushes. It is here that the best things, and the overlooked things, are to be found; but the shooting and the recovering is very troublesome. *Anthus ludovicianus* is a perfectly good species. I should have mentioned that the axillaries are greyish white. It has none of the yellow and warm tone of *pratensis*, and is very distinct indeed from *rosaceus*, which has primrose axillaries and unusually strong broad back striation.

The Pipits are a very interesting group, considered difficult by some, but once understood, they are exceedingly easy to distinguish. I wish the Larks were as easy.

In Sikhim, I came across many of the *Leiotrichinæ*, but shall not say anything about them, except that *Leiothrix luteus* has a pretty little song. These birds are all shy, and conceal themselves as quickly as possible. They all answered the owl-call well, in fact kept everlastingly coming when I wanted sylvine birds. Of the Tits, I procured four species only—*monticolus*, *beavani*, *erythrocephalus* and *æmodius*.

661.—Corvus intermedius, *Adams*.

In his list Mr. Hume places this species as doubtful; but I think it is as good a species of *Corvus* as exists. It is certainly not the *Corvus culminatus* of the plains, for apart from its longer tail, the voice is utterly different. I attach very great importance to the voice in determining a species, and if there were no other difference,* I never could identify the hill crow with that of the plains.

682.—Sturnus humii,† *Brooks, vide Ibis*, 1876, *page* 500.

A synonym of *Sturnus vulgaris* could not stand for this distinct little Starling, which was discovered and described by my friend, Mr. Hume. I urged him to rename it, but he would

* There *is* no other *constant* difference, and as the skins are silent, how are we to distinguish specimens?—A. O. H.

† Must stand as *nitens*, Hume, *vide* S. F., V., 328.

not, contending that a synonym could be so applied. I therefore suggested another name, and I am afraid, too late, its describer suggested a third term.

682 *bis.*— Sturnus purpurascens, *Gould.*

I obtained a few near Saharunpore, which I readily made out with the help of Mr. Hume's very good paper on these birds.

Sturnus vulgaris.—I obtained it at Mooltan, and I have also got it at Etawah and Mogulserai.

720.—Emberiza pusilla, *Pall.*

This was common on the hills below Darjeeling, where there was brushwood. Its note is a sort of "*zip*," not unlike the note of *Reguloides erochrous.*

729.—Pyrrhula erythrocephala, *Vig.*

This was the only Bullfinch I saw near Darjeeling, and on the Senchal hill a little beyond the grassy open where I obtained *Anthus ludovicianus.*

746.—Procarduelis nipalensis, *Hodgs.*

This was tolerably numerous on the same hills where *Emberiza pusilla* was found.

761 *bis.*—Calandrella tibetana, *Sp. Nov.**

Upper surface, a light cold brownish grey, streaked with dark greyish brown; lower surface dull white, and grey across the breast. There are sometimes a few small indistinct streaks or spots. The bill is rather longer and more pointed than in *brachydactyla*, and not so stout at the base. The tone of the upper plumage of this bird inclines to bluish grey, and is quite different from the sandy-toned upper surface of *brachydactyla.* I have autumnal and summer examples of each, so the conspicuous difference is not due to season. This new bird is from Thibet, beyond Sikhim.

Wings ...	...	3·55; 3·5 ; 3·7 ; 3·35.
Tails ...	...	2·55; 2·55; 2·4; fourth one has no tail.
Tarsus ...	...	·75; bill at front, ·47 in all.

I have had this bird for long. Mr. Dresser said he never saw anything like it. The late Mr. Mandelli procured it, and was much puzzled as to what it was. He had labelled it "*C. pispoletta.*" From this, however, it is quite distinct.

762 *ter.*—Alaudula adamsi, *Hume.*

This was not uncommon at Sehwan, along the water side.

* Apparently *C. acutirostris*, nobis—Lahore to Yarkand.

768.—Alauda australis, *Brooks.*

My friend, the Editor, puts a ? before this species, but I think the fine Rufous Sky-Lark of Southern India will hold its own. There is no better species of *Alauda*.

845 *bis*.—Charadrius pluvialis, *Lin.*

I obtained one of two I saw near Sehwan at the water edge. Seeing two, real Plovers, I got as near as I could with the boat and drew both triggers of my 24-bore gun loaded with dust shot! The Plover I fired at was soon dancing on his head, and on examining it I found it had pure white axillaries, so I skinned it. This is the first Indian-killed example of the species.

I am tired of this long paper, so I shall wind it up with something really good.

958.—Anas boscas, *Lin.*

I shot a splendid drake near Saharunpore, such a heavy bird, and apparently heavier than any tame duck I have had for a long time. He looked so beautiful, that it was long before I could decide whether to skin or eat him, and I decided upon the latter course. There is no mistake about this duck being much the best flavoured of the whole, and the correct one has been domesticated.

There were several flocks at Saharunpore near the canal, but they were very wild. In my paper I have quite forgotten one little bird that should have been noticed, and this is *Regulus himalayensis*. The beautiful blue grey round the back of the neck and the more of fire crest coloration of the bird forbid its identity with *Regulus cristatus*. The two birds are as distinct as could be wished.

The Game Birds of India.

(*Reprint from the "Asian."*)

ADDENDA ET CORRIGENDA.—*Edited by* A. O. HUME.

No. 1.

ALTHOUGH more than three months have elapsed since Vol. I. of the "Game Birds" appeared, I regret to say that as yet very few sportsmen have furnished me with any further information in regard to the species therein treated of.

Such few notes as have come to hand, I reproduce below *pro bono publico*, with hearty thanks to those who furnished them. I can only hope that, as time goes on, and the work becomes more generally known, all who take any interest in

Game Birds will assist me with such additional information supplementary to what I have published, as they may possess. There is probably no single sportsman who could not contribute some one or two facts that would help to complete my unavoidably imperfect accounts, and it is a great pity that they cannot be induced to place those facts on record.

The Editor of the *Asian* has most liberally furnished a channel for their immediate publication, and the only trouble involved is, therefore, to jot down what has to be said, and despatch the note to me, "Allahabad." Surely we might expect brother sportsmen to take this much trouble towards perfecting a work in which *all* must be more or less interested.

THE GREAT INDIAN BUSTARD. (Vol. I., pp. 7 *et seq.*)—

"There are always at this time of the year (November 10th) a few of the Great Indian Bustard east of Mozuffernuggur, on the high ground just before the dip into the Ganges Kadir. My son had a rifle shot at one, and so had my assistant, both missing. I myself came across a flock of sixteen one day, but did not get a shot. I shall probably go down to that direction this cold weather, and will try and send you one."

FREDERICK WILSON.

HURDWAR, *November* 10*th*, 1879.

"You say that the Great Indian Bustard does not occur in the North-Western Provinces, north and east of the Jumna, but some few birds of this species are really always to be found in the Mozuffernuggur district all through the year.

"I yesterday put one up about six miles from my house, a cock. I saw a dead bird some years ago, that had been killed for Mr. George Palmer, C.S. An inspector of mine wounded a cock badly last January. Some years ago, while riding across from Roorkee to Bijnour, I saw a number of birds on some sandhills, which I then believed to be Vultures. I had then never seen the Great Bustard. I was struck by the birds, and watched them for some time. Eventually I rode into them, and put them up; this was during the rains. I have no doubt now, especially after reading your remarks (p. 11,) that these birds were Bustards.

"Between the line of the railway and the Ganges canal, from near Roorkee to, I believe, Ghazeeabad, there runs a broken range of sandhills. Along this tract, right and left of the range, the land is high and sandy (*bhoor*), and here Bustards are to be found. I cannot positively assert that they

extend into the Meerut district, but I believe such to be the case; and certainly a bird is to be occasionally seen during the rains in the Saharunpore district, east of Deobund.

"In this district (Mozuffernuggur) they are to be found all the year round, and one was caught alive here some years ago for Mr. Craigie Halket by some *bahelias*.

"The Bustard I saw yesterday, I flushed within a quarter of a mile of the Grand Trunk Road, (Meerut to Roorkee) on some *bhoor* land close to a police outpost.

"In 1871, I was in the Mirzapore district. I was told by natives, and also I think by Mr. Pollock, C.S., that both Bustard and Florican were to be found some miles from the station, along the great Deccan road.

"W. Ward Smith, an Assistant Engineer, D. P. W., stationed here tells me he frequently sees Bustard about Jowlee in the Mozuffernuggur district."

F. W. BUTLER.

MOZUFFERNUGGUR, *October 25th*, 1879.

"I do not know why the Bustard should *not* be found in Rewah, for it is, or used to be, exceedingly common all round Nagode.

"I cannot say whether *any* of the Bustard, found there during the cold season, migrate from Mysore; but some, at all events, breed here, as in the Tumkur district, to my certain knowledge, and I believe in other districts too."

CHARLES MCINROY, *Major*.

HOONSOOR.

THE LESSER FLORICAN OR LIKH. (Vol. I., pp. 33 *et seq.*)—

"At page 36 you say, quoting Mr. Davidson, 'Florican are found sparingly in Mysore, &c.'

"I think I am within the mark when I say that near Mallur, —a station on the Bangalore and Madras line of rail, and 25 miles from Bangalore—thirty birds were shot in one day by two officers of the Forest Department. Several good bags have been made in that neighbourhood. Florican are pretty numerous throughout East Mysore, but, for some reason which I cannot divine, are not nearly so much so in the western division of the Province.

"I have known four or five killed of a morning within a few miles of Samulcottah, a now deserted military cantonment seven miles from Coconada."

CHARLES MCINROY, *Major.*

HOONSOOR.

THE LARGE OR BLACK-BELLIED SAND-GROUSE. (Vol. I., pp. 47 *et seq.*)—

"I have just heard that *Pterocles arenarius* was found breeding in numbers on the Wuzeer Korey plain, about ten miles from Kandahar, just too late for the work, and, alas! no eggs were taken as the discoverers did not wish to disturb the birds."

C. H. T. MARSHALL, *Major.*

SIMLA.

THE PAINTED SAND-GROUSE. (Vol. I., pp. 59 *et seq.*)—

"You mention that this species does extend to Mysore; this is true but it is extremely rare there. The following are the only two instances in which I have met with it during five years of travelling in all parts of the Province, while especially in the Chittaldroog District, the Common Sand-Grouse is in legions.

"23*rd January* 1879.—Two brace near Ramgherry, Hósdúrgá Taluk, Chittaldroog district, Mysore. One brace in hilly jungly ground; the other brace on the plain, within ¼ mile of the village of Ramgherry, still there were a few bushes. I shot a brace of the Common Sand-Grouse within a *few yards* of these. In the first case there were three birds, in the other a pair only.

"1*st February* 1879.—Bukambídí, Tarikere Taluk, Kadur District, Mysore. One brace out of three birds. Scrub jungle at foot of a hill."

CHARLES MCINROY, *Major.*

HOONSOOR.

THE COMMON PEA-FOWL. (Vol. I., pp. 81 *et seq.*)—

"You say, page 90, that Pea-Fowl breed in June, July, and August; but in the Dhun here, we find the eggs about the end of April, and early in May they are plentiful enough."

FREDERIC WILSON.

HURDWAR, *November* 10*th*, 1879.

"It may interest you to know that I lately shot a Pea-Fowl in the Mozuffernuggur district, similar to the one described by you in your book, as being 'a hen of a uniform dirty yellow color.' My bird was more white than yellow. I flushed the bird in a cotton field at dusk, and at the moment believed I had put up a turkey."

F. W. BUTLER.

ROORKEE, *January* 1880.

THE ARACAN SILVER-PHEASANT. (Vol. I., pp. 201 *et seq.*)—

"I am as certain as it is possible to be, without having procured the specimen, that I saw this bird in the extreme north of the Changree Valley (N. L. 23° 17') in Chittagong. I emerged suddenly upon the river one evening whilst shooting, and saw a beautiful Pheasant run from the water's edge on the far side into a thicket. It was only about thirty yards distant. I have been puzzled ever since to know what it could have been, until your "Game Birds" appeared, when I recognized the description at once. The Black-Breasted Kalij was common, and I had shot numbers of them in the same locality, so there is no chance of my having mistaken the Aracan Silver Pheasant for the Kalij. The splendid blue of the bird I saw was very striking. It was of slender make, and very shy, and quick in its movements. I only had a rifle in hand or could have secured it."

G. P. SANDERSON.

DACCA, 5*th October* 1879.

THE GREY JUNGLE-FOWL. (Vol. I., pp. 231 *et seq.*)—

"Mr. Davidson says (p. 235):—'The Grey Jungle-Cock, even at the best, is very dry and hard.' This is correct literally as to the old cock, but most people would suppose it to apply to the species, and if so, it cannot be said to be so everywhere, as a young bird of either sex is most palatable and gamey, when hung for a day or two. This applies to Mysore."

CHARLES MCINROY, *Major*.

HOONSOOR.

THE PAINTED SPUR-FOWL. (Vol. I., pp. 255 *et seq.*)—

"I have just examined a skin of this species shot near Gokak, about 40 miles north-north-west of Belgaum. The man who

shot it told me that he saw five or six more at the same time, and that he fancied it was not uncommon about the hills in that neighbourhood."

E. A. Butler, *Captain.*

Belgaum, 2*nd September* 1879.

Notes.

At last, when I had begun to believe the quest almost hopeless, I have succeeded in obtaining an Indian killed specimen of the Clucking Teal, *Querquedula formosa*, Georgi—(*Anas glocitans* of Pallas.)

For this very valuable specimen I am indebted to Mr. W. N. Chill, who, during the last year, has really done more in the matter of Water Birds than any one else in India. He procured the specimen on the 1st of November not very far from Sultanpore, and some 22 miles west of Delhi.

Mr. Chill shows us what a man can do who sets to work in earnest. Stationed at one of the most important posts of the Inland Customs Department, admittedly one of the most indefatigable members of that hard-worked service, with a circle of scarcely 20 miles in diameter, outside of which he never goes—a circle, too, by no means specially favourable for ornithological work, he has yet managed merely in moving about from factory to factory, and village to village, supervising salt manufacture, and preventing smuggling, to secure during the past year, the first *Ægialitis hiaticula*, the second *Querquedula glocitans*, the third, fourth, and fifth *Anser erythropus*, and the fourth *Querquedula falcata*, as yet recorded from the British-Indian Empire.

A score or so more persevering workers like Messrs. Chill, Doig, Cripps, Butler, Vidal, Reid, &c., would greatly help to make our knowledge of the species that visit India, exhaustive and complete.

The specimen of *Querquedula glocitans*, now obtained by Mr. Chill, is rather a young male, which has not fully assumed the adult plumage, or it may be (for we know little of the changes of plumage of this species) a male, assuming winter plumage.

The whole forehead, crown, and occiput is a red brown, intermingled with black—the latter being the colour of the bases of the feathers, and the whole of the buffy face has the feathers narrowly tipped with dusky brown.

There is no mistaking the male of this species however. The bird is somewhat larger than the Common Teal. The chin and upper half of the throat are black, and the whole side of the head is straw or buff-coloured, traversed by a conspicuous black bar, involving the eye, and running from that with a slight slant, downwards across the cheek. This alone is sufficient to distinguish the adult or nearly adult male from all our other Indian Ducks, except perhaps during that short period when, after the height of the breeding season, it, for a time, assumes a garb more like that of the female.

The female is very like that of the Common Teal, but I have already fully explained (*ante*, p. 412) how the female of the present species may be distinguished.

MANY YEARS ago I, for the first time, recorded the occurrence of *Sterna* (*Hydrochelidon*) *leucoptera*, (Meisn. and Schintz.) in Southern Asia, I having received a fine specimen in full breeding plumage from the Megna River, where it was shot near Comilla in Tipperah.

In the P. Z. S., 1873, Mr. Holdsworth recorded having obtained a pair near Aripo in Ceylon.

But not only does Dresser, in his great work on the Birds of Europe, ignore these facts, but so equally does Howard Saunders, in his recent valuable Monograph of the *Sterninæ*. Speaking of the distribution of the species, he says :—"A straggler to Northern Europe, this Tern becomes abundant in the south and south-east, ranges throughout Siberia and China, and reaches to the Transvaal and Damarland and to Abyssinia, whence I have several specimens, all in immature plumage; there is, however, little doubt that it breeds there. It has also been obtained in Australia and New Zealand, and is recorded by Dr. E. Coues as having been captured in Wisconsin, U. S., on the 5th July 1873, in full breeding plumage."

To this must now be added not only INDIA and CEYLON, *but also* THE ANDAMANS, whence Mr. F. A. de Roepstorff has kindly sent me a specimen procured at Aberdeen on the 16th April 1879 by himself. Later in the season a flock of this same species was seen at Haddo, but none were procured.

The specimen sent is an interesting one. It is immature, but is advancing rapidly to maturity. The tail and upper tail-coverts are already pure white; the back is mostly leaden-sooty, two or three of the feathers of the interscapular region black at the tips; the wing-lining and axillaries, black; the breast and abdomen greyish white, mingled with pure black feathers, but the forehead, anterior portion of the crown, lores, cheeks, chin,

throat, front and sides of neck are still white; the posterior half of the crown, occiput, and nape are dull, dusky brown; one feather only on the crown being black; a blackish mark in front of the eyes, and the posterior portion of the ear-coverts blackish dusky; the base of the neck all round still white. This specimen is distinguished at once from *Sterna nigra*, the immature birds of which it more closely resembles than those of any other species, by the black axillaries and wing-lining. In *nigra* the wing-lining is a sort of pearly grey.

It is almost needless to remind my readers that all three species, *hybrida*, Pall., *nigra*, Lin., and the present species, *leucoptera*, (generally separated under the sub-genus *Hydrochelidon*) are distinguished from all the other Terns by their long, slender, and imperfectly-webbed toes, coupled with short, square, or somewhat rounded tails. When I say "imperfectly-webbed," I mean that the membrane connecting the central toe with the two lateral ones is so deeply-scolloped out or emarginate that very little of it remains.

Further particulars of this present species, will be found "S. F.," VII., 445.

ANOTHER SPECIES has, apparently, to be added to our Indian list. My friend Mr. Gurney writes to me:—"You will be interested in hearing that Whitely of Woolwich, a reliable dealer, has received from the Nicobar Islands two specimens of *Microhierax latifrons*, lately figured in the *Ibis* from a Bornean specimen. It is curious that the bird should have turned up in these two places only; but there is no doubt as to the Bornean locality, and there seems to be none as to the Nicobars.

"Of the two Nicobar specimens, one has been secured for the Norwich Museum, and the other has gone to Count Turati at Milan.

"I think it is an undoubtedly good species, and have seen both the old and the young."

This species, the White-crowned Falconet, is figured in the *Ibis* of the present year, Pl. VII.

It is extremely like *fringillarius*, but is distinguished at once by having nearly the entire crown, as well as the forehead, white.

Mr. Sharpe, who named the species, furnishes the following brief description of, and remarks in regard to it, *Ibis*, 1879, p. 257:—

Microhierax latifrons, *Sp. N.* (Plate vii.)

M. similis M. fringillario sed fronte latissimâ* albâ et fasciâ albâ hujus speciei per latera colli decurrente nullâ distinguendus. Long. tot., 6·5; culm., 0·45; alæ, 40; caudæ, 23; tarsi 0.75.

"It was my kind friend Mr. J. H. Gurney, who some months ago shewed me a specimen of this *Microhierax* from Borneo, and drew my attention to its broad white forehead as probably indicating a distinct species. On examining our series, however, I found that there were several specimens in the Museum from Borneo which were inseparable from the true *M fringillarius* of Malacca, and I hesitated to separate the white-fronted bird on the strength of a simple specimen. Now, however, that Mr. Treacher sends four specimens, all of them precisely similar, it is impossible to resist the conclusion that the species is really distinct. It will probably prove to be confined to the north-western district of the island, as the birds presented to the Museum by Rajah Brooke from Sarawak are not to be distinguished from the ordinary Malaccan type. Three of Mr. Treacher's specimens are from the Láwas river, and one from Lumbidan. Governor Ussher also procured two in the latter province."

Mr. F. Nicholson, in his notes on some birds from Western Java, *Ibis*, April, 1879, p. 167, proposes the name *buxtoni* for *Zosterops lateralis*, Hartlaub. This name, however, cannot stand. In June, 1878, "S. F.," VI., 519, I proposed the name *auriventer* for this species. Further references to it will be found in Vol. VII., p. 452, and Vol. VIII., p. 163.

The species will, I believe, have to stand as Zosterops auriventer, *Nobis*.

Another note of Mr. F. Nicholson's is important as showing that the species which we have hitherto identified as *Miglyptes tristis* from Tenasserim and the Malay Peninsula, should probably stand as *M. grammithorax*, Malherbe. Mr. Nicholson says:—

"*Miglyptes tristis*, Horsfield, Tr. Linn. Soc. XIII., p. 177. A pair of birds, concerning which a few remarks are necessary. I compared them with the series of *Miglyptes* in the British Museum; and I cannot allow that, if as seems certain, I have before me the true *M. tristis* of Horsfield, the Malaccan and Bornean birds usually called *M. tristis* are really the same as the Javan species. The latter has a totally black under

* As figured, the bird has not only the forehead, but quite the anterior two-thirds of the crown, pure white.—A. O. H.

surface from the lower throat to the abdomen, and has the lores and region of the eye finely vermiculated or lined with black and white, like the rest of the face, whereas the Malayan birds have a uniform fulvous space in front of the eye.

"Professor Sundevall, in "his Conspectum Avium Picinarum" (p. 92), thought that the differences might be due to age; but he was acquainted with the true *M. tristis* from Java, a specimen of which he saw in the Berlin Museum, and he was evidently inclined to consider it a distinct bird. I think there can be no doubt on the subject from a comparison of specimens; and that the Malaccan and Bornean birds must be separated as *M. grammithorax*, Malherbe."

In the July *Ibis* of the present year M. Seebohm, in discussing the genus *Sylvia* (p. 315), refers to *S. minula*, Hume, Stray Feathers I, 198. The Editor remarks that this is probably a mis-print for *minuta*, but the fact is that it is a misprint for *minuscula*, a name given correctly in my list of the "Birds of India," to the typographical correction of which I gave much attention, but which the printer had always previously carefully altered to *minula*. In the first slip-proof of Volume I, the name stands correctly as *minuscula*.

Mr. H. T. Wharton, in the October number of the *Ibis*, just received, gives an interesting paper on the orthography of some birds' names, from which I take the liberty of quoting certain passages which interest us. It is a great pity that some one, possessed of the time and the scholarship, does not similarly discuss the host of doubtful names with which ornithology is encumbered. Mr. Wharton says:—

"In 1822, F. Boie (*Isis*, p. 550) proposed *Cotile* as a generic name for *Hirundo riparia*, L., but, unfortunately in 1826 (*Isis*, p. 971) he spelt the genus *Cotyle*; although in the same column we find "*Cynmyris*" and "*Ægythalus*," it is only the the first misprint that has bred lasting mischief. Of course Gloger (Naturg. der Vögel Europa's, 1834, p. 411) knew and accepted the right spelling, and so did G. R. Gray (Hand-list, 1869, I., p. 73). But the learned Prince Bonaparte (Consp. Gen. Av. 1850, I., page 341) indorsed *Cotyle*, and thus gave colour to the wild guess of Agassiz (Nomencl. Zool.) that the name came from κοτύλη a cup. It is sad to see Dr. Coues ("Birds of the Colorado Valley," 1878, p. 370) being thus misled into suggesting an analogy between a cup, such as so many other birds' nests form, and the deep cylindrical hole in

which Sand-Martins commonly build. In reality, κωτίλας is a name used by Anacreon (99) for the Swallow; and κωτίλος is a familar classical adjective, meaning "prattling," as κωτιλλειν means "to prattle." When Boie first wrote *Cotile* he undoubtedly had in his mind this idea of "twittering;" and all the confusions about a "cup" has arisen from a subsequent misprint.

"Every writer subsequent to Linnæus appears to have spelt the name of our common Wild Duck *Anas boschas*. There seems to have been no reason for following Willoughby and Ray in this matter, when continental authors of the 'heroic age,' of ornithology, such as Gesner and Aldrovandi, were generally content with '*boscas*.' That the latter is the correct form there can be no doubt.

βοσκάς is a small kind of Duck in Aristotle (Hist. An, VIII. 315); βασκάς means the same in Aristophanes (885); θασκάς which seems a cognate word of nearly similar application, occurs in Athenæus (IX. 52.) By no rules of consonantal interchange could there be a substitution of χ *(ch)* for κ *(k)*; nothing but a misprint can account for the introduction of the *h*. The co-existence of 'tench' with *tinca*, and 'perch' with πέρκη afford no parallel instance. On no ground but that of the necessity of following Linnæus so blindly as even to perpetuate his errors, can any one henceforth write the specific name of the Mallard otherwise than *Anas* BOSCAS. It is, no doubt, a little matter; but any one who has vainly tried to get at the history of the word by hunting for βοσχας in any lexicon, will be grateful for the correction.

From his variable spelling of the generic name of the Wryneck, it is certain that Linnæus held no very definite opinion on the matter. The '*Yunx*' of the Syst. Nat 1766, was the '*Iynx*' of earlier editions, and of the Fauna Suecica. Yet it is perfectly clear that Aristotle wrote ἴϋγξ and that the word was always a dissyllable. Witness Theocritus's constantly recurring hexameter (Id. II. 17, 22,27, &c.):—

"ἴϋγξ, ἕλκε τὺ τῆνον ἐμον ποτὶ δῶμα τὸν ἄνδρα."

"The name comes from the bird's cry sounding like a repetition of ἴυ or ἰου an interjection used to denote the loud shout of woe; whence the verbs ἰύζω 'I cry aloud.' By the Stricklandian Code § 14, ἴϋγξ becomes in Latin IYNX: let the name then be so written, not neglecting the notes of diæresis and there can be no doubt on the subject for the future.

"There is one word more which stands in some need of alteration. Linnæus called the Woodcock *Scolopax rusticola* (S. N. 12th edit, 1 page 243.) I cannot help thinking he

meant *rusticula*, a well-known diminutive of *rusticus*, like *gallinula* from *gallina*. Had he meant a 'husbandman,' on the analogy of *agricola*, he must have written *ruricola*. Gloger seems to have been the first to notice this discrepancy, thus expressing himself in a note ('Schlesiens Wirbelthier—Fauna,' Breslau, 1833, p. 47) :—*Rusticulus* (adject.) = *rusticus* ; *rusticula avis*, Plin. Dagagen ist *rusticola* eine nach Sinn und Etymologie gleich falsche Bildung.' And Naumann followed his example. In classical times *rusticula* was Latin for some kind of Partridge or Grouse, not merely the simple feminine of the adjective; *e. g.*, Pliny (Nat. Hist. X. 54), speaking of the gait of various birds, says, 'ambulant aliquæ, ut cornices; . . . currunt, ut perdices, *rusticulæ*,' &c. It is moreover obvious, upon the face of it that no such word as *rusticola* ever existed. We certainly, then, want more evidence than I have hitherto come across to do otherwise than quote the specific name of the Woodcock as *Scolopax* RUSTICULA."

Letters to the Editor.

SIR,

THIS morning I noticed a King Crow (*Buchanga longicaudata*) sitting upon a Peepul tree in the act of devouring an Iora (*I. tiphia.*)

He held the bird in his claw, and tore it to pieces with his bill similar to a hawk, removing the feathers first.

Whether he had killed it himself I don't know, but as the body was quite fresh, in all probability he had.

E. A. BUTLER.

BELGAUM,
27*th December* 1879.

SIR,

WITH reference to your footnotes, "S. F.," VIII., 386 and 387, I beg to state that in all probability the bird I saw myself in its wild state near Sukhur was *Palumbus casiotis*, as corrected in the list by you.

As to the other specimen which I saw in the Karachi Museum, if it was procured in Sind, it was probably *casiotis* also, but if not, and I believe it to be an English specimen, it was probably *torquatus*.

I can't remember now whether the neck patches were white or buffy, but from the manner in which it was set up, it certainly gave me the idea of having been mounted in England.

E. A. BUTLER.

SIR,

REFERRING to Dr. Scully's excellent paper on the Birds of Nepal, S. F., VIII., 355, in which he alludes to a former paper of mine on *Gallinago sthenura*, I can only say now, having had ample opportunities of studying the species in this neighbourhood, where it is abundant, about one-half of the snipe killed this season being Pintails, that I can fully endorse all that has been written on the subject both by himself and Mr. Hume, S. F., II., 294; V. 214; and VIII., 355.

The richly barred under wing-coverts, which are so very different to the same feathers in *gallinaria*, are sufficient to enable any person at a glance to distinguish the two species without referring to the other points of distinction mentioned, *viz.*, lateral tail feathers and length of bill sex for sex, which, however, are equally constant and infallible.

The number of narrow lateral tail feathers, as pointed out already, certainly does vary from six to nine on each side.

At the time that my remarks were written, S. F., V., 212, I was not as familiar with the bird as I am now, neither did I refer to Mr. Hume's notes on the subject (Vol. II., 294), the reference having, by some accident, been omitted in the index.

E. A. BUTLER.

(REPRINT.)

To the Editor of the "Asian."

DEAR SIR,

THERE is no Indian non-migratory Duck of which so little is known as of *Anas caryophyllacea*, the Pink-headed Duck.

Through the medium of your columns, I venture to solicit information in regard to it from all who may chance to know anything definite about it.

Jerdon says :—

"This very lovely Duck is most common in parts of Bengal, but is found at times throughout Northern India; is rare in the North-Western Provinces, and still more so in Central and Southern India. I have procured it rarely as far south as

Madras, and long ago I heard of its occasional visits to the Dekhan, but it is only since I have visited Bengal that I have seen it in its native haunts."

To begin with Bengal—

Blyth says "*not* very common in Bengal," and this is exactly my experience and the result of all my enquiries.

It very seldom comes into the Calcutta Market—rarely I should think more than half a dozen specimens in a season. Mr. Rainey tells me it is most rare in Jessore. In the Howrah, Dacca, Furreedpoor and Sylhet Districts, I am told that it is very scarce. Nowhere can I hear of it as common.

Can any one tell us *any* place where it is common, and also *when* they found it so? Because in many parts of the country it seems only to appear during the rains.

Thus, if I remember rightly, Mr. C. Shillingford informed me that near his place in the south of the Purneah District it only appeared (and not even then in large numbers) during the monsoon.

From Upper Assam Colonel Graham reported it, but there too it was rare. Where, in Bengal, and at what season can Jerdon have found it common?

Then he says:—"Found at times *throughout* Northern India." It is absolutely unknown, I believe, throughout the greater portion of the North-Western Provinces and the whole of the Punjab and Rajpootana. No one has ever reported it from the Central Provinces. It *does* occur, but apparently as a rare straggler and only during the rains, in Oudh, and Anderson says he *once* shot a female in Futtehpoor. Nothing can be more misleading than to say that it occurs *throughout* Northern India.

In Central and Southern India it seems equally almost unknown except on the east coast, where it does occur occasionally in the Pulicat Lake, whence I have a specimen, and whence the specimens procured by Jerdon in the Madras Market were doubtless obtained. Ball reports it, but as not common, in Manbhoom and Chota Nagpore.

In the Deccan it is so rare that neither Davidson nor Wenden ever saw it, though Fairbank once met with a specimen near Ahmednugger and McMaster once shot it at Secunderabad.

It is unknown in Tenasserim, and scarce in Upper Burmah, and Blyth adds, Aracan.

It does not apparently occur outside our limits. We have not met with it in the Malay Peninsula, and it is not reported from Siam or China.

The bird *must* have some head-quarters, *must* be common somewhere; but *where* can this be?

I would ask every one of your readers, who has ever seen the Pink-headed Duck, (alive and wild), to let me know in what district or districts he has met with it, and at what periods of the year; also, whether he there found it common or rare. Any further particulars as to habits, flight, voice, food, (*I* have never myself seen it alive and wild), nidification, colours in life of legs, feet, bill and irides, dimensions, or weight, would be most welcome additions to our very scanty knowledge of this charming and tantalizing species. I do hope that those who can will kindly assist me in this matter.

ALLAN HUME.

SIR,

I SEE that Mr. Blanford, in his remarks on your list of the birds of India, doubts the occurrence of *Montifringilla blanfordi* and *mandellii* (or *Onychospiza taczanowskii)* in Native Sikkim. At first when I could not understand my collectors, being all pure Sikkimites, I used to write on the labels "Borders of Native Sikkim and Thibet," but last year they succeeded in getting two more specimens of *Montifringilla mandellii* and many specimens of *M. blanfordi*, and all these were shot in the Lacheng valley, Native Sikkim, dating September and October last. This being the case, they must have a place in your list. Of course Mr. Blanford did not know this, when he wrote his criticism.

L. MANDELLI.

[NOTE.—That this number, which should have appeared in December 1879, and a great part of which was printed in November of that year, has, owing to circumstances beyond the Editor's control, remained unpublished for several months, and will only actually issue in May.

THE EDITOR.]

March 23rd, 1880.

End of Vol. VIII.

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