BIRDS OF DARJEELING

AND INDIA

BY

L. J. MACKINTOSH

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ZOOLOGICAL GARDEN
CALCUTTA.

To His Excellency the Right Honorable
Baron Carmichael of Skirling, G.C.I.E., K.C.M.G.

May it please Your Excellency:

"Birds of Darjeeling" could not have been undertaken or persevered with except under Your Excellency's auspices and for your kind help.

It has given me much gratification to have been permitted to dedicate this work to Your Excellency.

I am,

Your Excellency's most obedient and humble servant,

L. J. MACKINTOSH.

Clover Cot,
Darjeeling.
15th November, 1914.

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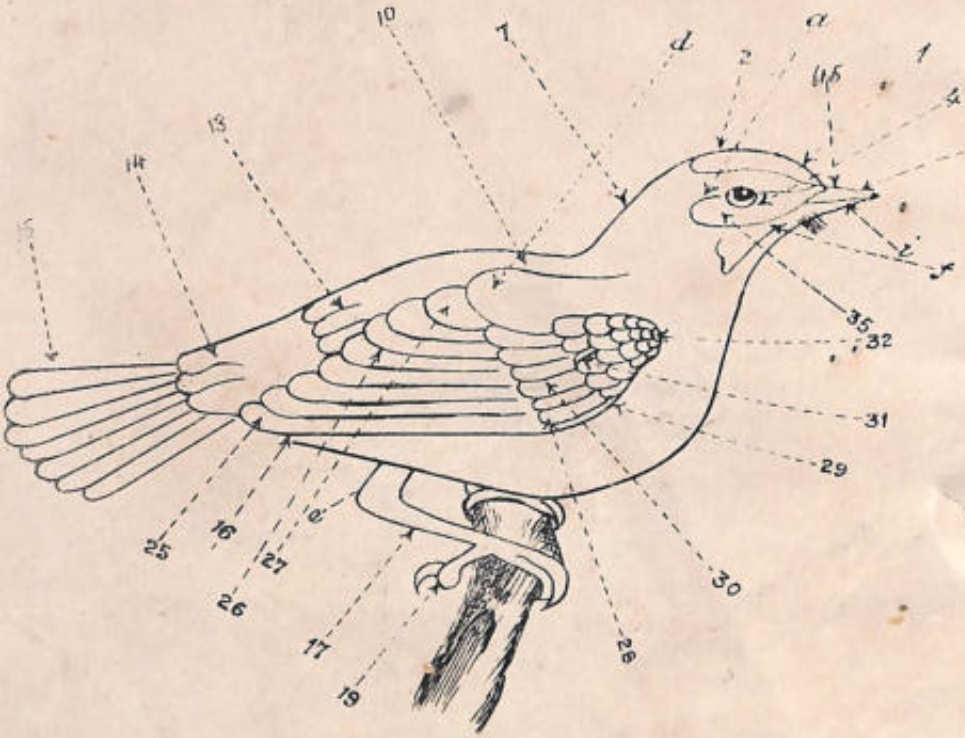
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TOPOGRAPHY OF A BIRD.

1. Fore-head (frons).
2. Crown (vertex).
3. Circum Ocular region.
4. Lore—The portion in front of eye.
5. Eye (oculus).
6. Hind head (occiput).
7. Nape (mucha),
8. Hind neck (cervix).
9. Side of neck.
10. Interscapular region.
11. Dorsum or back proper.
12. Noteum, or upper part of body proper.
13. Rump (uropygium).
14. Upper tail coverts.
15. Tail.
16. Under tail coverts, (crissum).
17. Tarsus.
18. Abdomen.
19. Hind toe (hallux).
20. Gastræum (belly part).
21. Outer or 4th toe.
21. Middle or third toe.
23. Side of body.
24. Breast (pectus).
25. Primaries.
26. Secondaries.
27. Tertiaries.

25.
26. } Remiges.
27.

28. Primary coverts.
29. Alula winglet.
30. Greater coverts.
31. Median coverts.
32. Lesser coverts.
33. The throat.
34. Jugulum or lower throat.
35. Auriculars, tufts for the ear, (ear-coverts).
36. Malar region portion under the eye.
37. Gula or middle throat.
38. Mentum, chin.
39. Angle of commisure, or corner of mouth.
40. Ramus of under mandible.
41. Side of under mandible.
42. Gonys (lower part of bill).
43. Apex or tip of bill.
44. Tomia, or cutting edges of the bill.
45. Culmen or ridge of upper mandible.
46. Nostril.

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40. *i.* Lower mandible.
d. Scapulars.
c. Rictal bristles or vibrissæ.
b. Upper mandible, maxilla.
a. Supercilium.
e. Tibia.
f. Cheek.
15. Tail feathers (rectrices).

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BIRDS OF DARJEELING AND INDIA.

INTRODUCTION.

THIS book was written at the request of friends desirous of obtaining an easier method of learning about birds met with, chiefly, in Darjeeling, also, as an aid to getting acquainted with, some of the commoner species found in their haunts down in the plains, chiefly of Bengal. This however, seemed to be a secondary consideration, the chief desire was for the birds of Darjeeling, and the district, which were more frequently seen, when up, for a holiday, when leisure was more at one's disposal, in a morning's walk, or a lengthened excursion into the district, or possibly into Sikkim. Most of the books on Indian birds offer but little help in learning about our feathered friends in their wild state. In this work, I have utilised my numerous notes, and diaries kept for many years. Most of the books on Ornithology, dealing with the species found in India, appear somewhat obscure, whilst, on the other hand, popular works convey but little information, I have been much struck, on several occasions on finding, a friend, to whom, I had lent a more or less technical work on Ornithology, skip over such important details, as the description of such and such a bird, or measurements, etc. : On being asked, I was told that it would be like "a needle in a hay stack," to find a certain bird by the description given. Then, again, science hedges in each of its branches by a formidable array of scientific terms, perplexing phraseology and crowded up detail, that many a faithful student, and true lover of nature is driven from the field. One cannot help thinking, that, the tendency of the age, appears to be to mystify, so that any help to lead true seekers to these clear Olympian Springs ought to be thankfully received. The difficulties which beset us, at the outset are, that, with the smaller birds, we get but a hurried glance,—may be the bird just spotted, warbling sweetly a few yards away, as you approach, its song stops, and a fleeting figure is all that meets the gaze, or the little bird which skips about the branches with such rapid movements, that it is all the eye can do, to follow it from perch to perch ; as for trying to discover if the primaries or tail feathers are graded or not, or the 4th and 5th quills are unequal, or the bill notched, the little toe long and syndactyle, are out of the question. These are doubtlessly all important points, which can

be verified at your leisure, when you get an opportunity of viewing a specimen close at hand. When endeavoring to make out a certain species, its more typical marks are to be observed ; the seasons of migration noted, and the different elevations to look for certain members of such and such a genus. The list at the end of each part will give greater facilities, in correctly placing the birds met with. I have carefully followed in this list, in every instance, the nomenclature adopted by the late Dr. Jerdon, which catalogue I have adhered to for many years. A good deal of chopping and changing has been going on since then, details of which we need not enter into, nor need I refer you to the Zoological Record. Our main object is to get acquainted with the bird life in the district. How the introduction is brought about is after all a secondary consideration. I have invariably, with a few minor alterations, adhered to the colours of the "types" of the different species, variations to a lesser degree occur, when considering the general run of birds in their wild state. I have endeavored in most instances when describing a bird, to have the specimens before me.

On looking over the list you will find against each species "D" or "P" and so on. These symbols stand for where the birds are likely to be found. "D"—found at one time or another in Darjeeling and the district from, say, 14,000 ft. elevation to the foot of the hills. Generally speaking the home of each bird is to be considered, the locality to which it retires, to build its nest, and brings up its fully fledged youngsters. "P," stands for birds, found in the plains of India, not necessarily its home, and for places other than Darjeeling. "C. P," to be more definite, up-country, and the Central Provinces. "W. H" for Western and Central parts of the Himalayas. The particular significance of "snows," stands for all high altitude birds, which build their nests in the Palæartic circle, 12,000 ft. and over, up to say Lake Shumpu, at the foot of the Glacier which comes off Kinchinginga. Jerdon's serial numbers will aid the student in ascertaining whereabouts in the great uniformity of nature the species is a link, and other useful significance. Next to a few of the "Water-birds" etc. will be "Thibet," or "passing over" is meant to draw your attention to those species of Ducks, Teals, Snipe, Plovers, Pochards, the Merganser, and some of the Gulls, which pass over Darjeeling, and the district, over the snowy range, and settle down on the lakes of central Thibet to breed; then return again, when the cold and snow storms, drive them down to warmer latitudes, on the plains of India.

Male birds have been, in most instances, figured to the seeming neglect of the females. It is generally advisable to discover the cock-bird, owing to the well marked specimens presented to the eye, and the display of more of the typical habits, than are found in the

hens, which are as a rule, sombre in colour, owing to their special vocation in life. Once the male is observed, but little difficulty will be experienced in discovering its pair.

At one time I purposed to give keys to the various families, but on considering the matter, I deemed it unwise to cumber you with over much tecnichal details.

Colour of the plumage (markings), is not always an infallible guide to know the species. A fuller knowledge of the habits of birds is always useful, also their typical modes of flight, general bearing etc.—a fairly accurate aid, is the season, and locality birds are found. At 10,000 ft. elevation, you have a group of varied families etc., in Darjeeling another ; at 5000 ft. another, and so on. In May for instance, at one or other of the altitudes you expect to find certain birds, and know that others you won't see. In winter some species of Rose finches etc. descend from the Singalillas to Darjeeling. After February nearly all of them have gone back, so that if you find a bird which you took to be a Rosefinch (female) in May, you may be certain that your eyes have deceived you.

The reason for not figuring, in not a few instances, female birds, is that, it would mar the object of the present work, which is to offer simple methods of identifications, by giving the more striking, distinctive marks and colours, as can be seen at a passing glance at bird. Females present difficulties in colour, which are not readily made out where allied species are concerned, more so, as for instance, in Honey-suckers, there exists difference of tints of colour, when distinguishing the female of one species from another. When examining the hen bird, it is always useful to observe the strong family likeness, if I may be permitted to say so, to the cock which exists, apart from the colour, also in shape of bill and habits generally.

The Avifauna of India can be divided into the following natural Orders :—

(1) RAPTORES	...	Birds of Prey.
(2) INSESSORES	...	Perching Birds.
(3) GEMITORES	...	Pigeons.
(4) RASORES	...	Game Birds.
(5) GRALLATORES	...	Wading Birds.
(6) NATATORES	...	Swimming Birds.

(1)—RAPTORES (Birds of Prey)

which comprise, the Vultures, Falcons, Kestrels, Sparrow-Hawks, Eagles, Buzzards, Harriers, Kites and Owls. These birds have strong and vigorous bills, legs and claws; upper mandible hooked and pointed, sharp in most of the families, generally with a festoon, or sinuations well adapted for tearing their, at times, tough prey; naked membrane at base of the bill—the cere; wings large and powerful, with strong resisting primaries, 10 in number usually, 12 strong tail feathers; legs strong and muscular; the tarsi bones are generally protected by large scutella or scales in front; eyes situated laterally, are large, and the sight acute, aided by a delicate sense of hearing. These birds are separated into the following families:—(1) Vulturidæ, Vultures. (2) Falconidæ, Eagles, etc. (3) Strigidæ, owls.

I. Family VULTURIDÆ—(Vultures)

Are a well-known family, so require, but little introduction. Three types are found in India—(A) True Vultures, (B) Scavengers, (C) Bearded Vulture or Lammergeirs, having the neck covered with feathers, like eagles.

Vultures have longish bills, straight upper ridge or culmen, tip curved and blunt, lacking the sharp tooth of the *Falconidæ*; cere invariably large; tarsus short and stout, protected by smallish scales, and feathered usually to the knee, toes long, middle toe lengthened; hallux short; claws strong, but blunt, as compared with the next family.

Sub-family VULTURINÆ

Have long bills thick and strong, depth of which is greater than the width, tip curved; cere long; head and upper neck, with soft feathery down; wings long; tail short. These birds are of large size some over 4 feet in length. Their flight is graceful. They mount up to a great height where they spend, no small part of their leisure, gracefully performing on the wing great curves and circles in a comparatively slow easy manner, with but little effort. Wings have an up-turned appearance, a few of the primary quills showing out distinctly.

(1) Vulture monachus, *Great Brown Vulture*, is not so plentiful as the other species. It is sometimes seen in the plains ,and occasionally in Darjeeling and the district. It has been called, the Great Brown Vulture of the Himalayas, and can be made out by its large

size and strong easy flight, together with the rich dark chocolate brown colour, above, a bit darker on the wings, tail and lower parts of the body; reddish ash cere, base of the bill and unfeathered parts of the neck; legs are dull yellow, which, seems to be the prevailing colour of *Raptores'* legs. Length of this species is about 48 inches; expanse of out stretched wings about 9 feet.

(3) GYPS FULVUS *Large Tawny Vulture*, is common about Darjeeling. It seldom descends to the plains. *Genus Gyps*, as a group, have longer bills than *Vultur*. Ruff feathers differ, being longer below the neck, however this is not readily distinguished from a distance. This bird is a little smaller than *monachus;* bill greenish. In general appearance it is tawny, as though tanned by the sun; lighter in colour on lower back and thighs; dark brown on wing coverts, quills and tail.

SUB-FAMILY NEOPHRONINÆ, *(Scavengers)*

These birds have long, slender bills, tip curved, abruptly hooked at the tip; cere long; tail wedge shaped; toes syndactyle; head and face unfeathered, neck ruff of feathers fairly prominent; wings strong and pointed.

(6) NEOPHRON PERCNOPTERUS, *White Scavenger Vulture*. These are the Pharoah's Chickens of ancient and modern times. This name refers, most probably to the strict game laws which protected, these useful birds, under a tropical sky. Doubtlessly they were favoured under some of those monarchs, and fared bountifully when Pharoah's wrath was kindled. There are few places in India where these birds, do not offer their services to clean up unhealthy surroundings, usually in partnership with *Gyps Bengalensis* and a few others of like tastes. The size of this bird is about 29". Colour is yellowish white; black on the quills. Our Municipal wire ropeway leads for refuse tubs, shoot their contents, about, 2 miles down the hill-side. When this mode of conveyance was new to Darjeeling, some twenty or thirty Vultures could be seen in a long line on the ropeway, taking a free ride. When they arrived at the terminus below, they hopped nimbly on to the up ropeway, each in its turn, and took a ride up. The reason for this apparent diversion, was not far to seek. These Vultures usually took a sly peep into the buckets on their downward journey, to see if they contained anything in the shape of digestible morsels. This however did not always seem to be their chief motive, for ere long, they had grown to like uncommonly well the novel mode of locomotion. Every 100 yards or so, on their journey the Vultures encountred the travelling pulleys, on which the buckets worked. It was amusing to watch the bird which was leading, look demurely at the approaching danger to their toes and claws, and a possible start to

the whole nervous system. Whilst keeping an eye on the wheels, when the impediment was nearing, it set up a hoarse *kok, kok, kok* like noise, as a warning to its friends, then nimbly hopped over the wheel, which each did in turn, and settled comfortably down till the next break on the line arrived. The intelligence displayed by these birds was remarkable. One usually looks on Vultures as belonging to a low grade type of birds.

(7) GYPAËTUS BARBATUS, *Bearded Vulture.* This fine looking bird is found on the Himalayas, generally at high altitudes. It is often seen sailing high up in the air above Darjeeling. Its peculiar shaped tail, and large size, makes it readily distinguished when amongst eagles and Vultures.

In the Hill stations on the Western Himalayas, the Lammergeier is commonly called "Golden Eagle," a compliment doubtlessly it must appreciate. A closer examination will find that it has a lengthened compressed bill, strong and well curved at the tip ; narial bristles dense and rigid, long below the lower mandibles, which gives the bird a bearded appearance ; tail long (wedge) shaped differently from the foregoing vultures. Size of this Lammergeier is 46" ; wing expanse about 9 feet. Color of the plumage, also helps to distinguish it from birds of the same family ; lower parts of the body are dull orange ; greater coverts, wings and tail, ashy black ; head whitish, with dark streaks ; back black. The Lammergeier is supposed to carry away lambs, when disposed to do so ; but I can't quite understand how this is done, as its toes are straight and claws, though strong, are only moderately curved. This bird does not possess the strong grip of eagles, so that, how it carries a burdensome lamb, by aid of its stiffish toes is difficult to realise. I have seen the Lammergeier beyond Jongri "go for" wild sheep, which are to be found among these steeps rocky inclines. If at a favourable opportunity a sheep has strayed, or wandered up one of those treacherous hights, to a conspicuous place where footholds are uncertain ; the Bearded Vulture is generally on the look out, to plunge at it, from its coin of Vantage, and hurl the unfortunate and reckless climber down, to the solid rocks, nearly a thousand feet below, to feed on its mangled remains ; but these sheep are wary and not easily caught napping.

When the dark forest rose before our view,
Our hearts were thrilled as when we kneel in prayer,
There, far aloft, the lonely tose-fir drew
Its glorious height into the misty air.
The chestnut's wide and leafy branches threw
Their, shadow on the winding pathway, there

Foliage with flakes of verdant leafage grew
The deodar, magnificent and fair.
The hush of silence o'er the mountain fell,
The only sounds, the breezes gentle sigh
Stirring the topmost boughs, a distant bell
Striking the hour from Teera, and the cry,
Of lonely lammergeier, I know not why
The memory of that day comes o'er me like a spell.

M. F. M.

The next family is the *Falconidæ*, which represents a variety of Birds of Prey.

II. Family FALCONIDÆ

These birds have short, compressed bills, the tip is long, curved and sharp, upper mandible toothed or festooned; legs and feet strong, with sharp well curved claws; the eyes are large, protected by projecting, horny eyebrows, giving these birds an extremely powerful out-look. *Falconidæ* contain the remaining diurnal birds of prey; Hawks, Eagles and Kites. They feed on birds, reptiles, fish, insects and smaller mammals. When resting on a perch, their erect bearing is most marked, and seem to stand with shoulders thrown back, as it were. They seldom or ever alight on the ground, save, perhaps in their hunt after a reptile, or some other prey, but rarely to rest. When feeding they remove, the hair or feathers, and other indigestible portions, before eating their prey, nevertheless any portions left undigested are emitted in the form of round pellets. These dryish looking pellets are often found on the ground, below big trees, where the birds habitually resort, after securing their prey. The cry of *Falconidæ* is a prolonged whistle, shrill and plaintive. Falcons are comparatively small in size measuring about 15" to 19". They have long pointed wings, which reach to the tip of the tail; a dark cheek stripe is generally noticeable. The Lanners and Laggers are found in this group; the darker Hobbies, and lighter coloured Merlins, and small sized, Kestrel.

Sub-family: TRUE FALCONS

These are interesting birds, more so perhaps, as they are readily trained to hunt, chiefly, game birds. This sport of the middle ages in Europe was largely indulged in, in India usually under royal patronage, when well trained falcons exhibited not a little strength, daring and skill. Now and then you come across this old time honored, pastime, where these falcons are still used for this purpose, in secluded states; but even here, one is pleased to note that this

somewhat barbarous practice is on the decline. I well remember a visit, to an old Rajpoot state, where Falconers of ancient lineage, talked sadly of the days, when notable warriors, came from far off lands, to witness the prowess of Shahin falcon, or Golden Eagle of the Mongolian principalities. The falcon's bill is short, well curved and hooked, with a sharp tooth; wings long, first quills notched on the inner web, second quill longest, and also usually notched; legs short and muscular; toes longish; claws sharp, curved and retractile.

(8) FALCO PEREGRINUS, *Peregrine Falcon*, is a well known bird owing to its prowess on the hunting field. It is found in most places in India. In former times it was usually trained to strike herons, egrets etc. which it does with its hallux or rather hind claw, when it has caught up to the bird, and got within range, or striking distance. In size *peregrinus* is about 15½". It has a distinctly marked cheek stripe; wings long and pointed. When seen on a perch, close by, the tips of the wings reach, to end of the tail; legs and feet are yellow; bill blue; cere yellow; colour of the upper plumage is bluish grey; wings black, spotted and barred with white, lower parts of the body white with longitudinal streaks. The general appearance of this falcon is dark in colour. Peregrines are uncommon in Darjeeling. Generally when present, they hide away among the dense foliage.

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(10) FALCO SACER, *Saker Falcon*. This bird is much rarer in these parts than the last. It is larger in size, male being about 18" in length, female about 21". Its tail is longer; toes shorter than the *Peregrine*. From a distance you will find but little difference in colour generally; head is reddish-ash with black streaks; upper parts are light brown; below white with large oblong slate coloured spots.

(14) HYPOTRIORCHUS SEVERUS, *Indian Hobby*. This bird resides chiefly in the Himalayas and seldom visits the plains except in the cold weather. It is fairly small in size, being about 10½" long. The Hobby usually comes out to hunt, a little before dusk, occasionally it goes for small birds, preferably larks and finches, which are bolder on the wing, than birds which keep to the dense foliage; also allured, no doubt by the dainty morsel these fat little birds offer. Hobby generally makes straight, like an arrow from the bow, at a flock of mixed Larks and Finches—on the wing, usually seen at approach of the cold weather; but the marvellous evolutions of these birds, in mid air, is beautiful to watch, as they follow the instructions of their leaders, as it were, and sweep in great circles,

with clock-work precision to dodge the strokes of the Hobby, or one or other of the falcon family, nevertheless keeping together, no matter what the size of the flock may be, or how many young birds are amongst them, occasionally one-batch gets seperated, which keep up the evolutions on a smaller scale, till the two groups manœvre close enough to rejoin. Hobby, more often than not, retires "blown" and panting from the chase, to recover strength and fresh energy for another shot, or flies off in search of some sickly bird it might chance to meet, or unwary reptile. Hobbies have longish wings and tarsi, the latter with hexagonal scales protecting them ; legs and bill are not so strong, and the former so muscular, as the true Falcons. Their plumage is darker in colour. Indian Hobby (14)—a more appropriate name would have been Himalayan Hobby, is (male) 10½" long, wings very long, reaching beyond, tip of the tail ; feet large ; tail short and more square shape ; bill plumbeous ; cere, orbitar, skin, and legs, reddish yellow ; above, the colour is dark slaty blue ; sides of the head black ; under parts of the body rusty red.

(13) HYPOTRIORCHIS SUBBUTEO, *The Hobby*, is also seen in Darjeeling, more frequently in the cold weather and spring. It is a shade bigger than *Severus*, male being about 10¾ inches in length and female 12½ inches. It has occasionally been found building its nest at a high elevation, but usually passes over into Central Asia. Colour, above, is black with a slaty tinge ; under parts are white, breast and abdomen with dark brown streaks, under tail coverts ferruginous also the thighs ; tail slaty with dark bands ; the stripes on either side of the head, light chesnut ; cheek stripe black, cheeks black, cere and legs greenish yellow.

(17) TINNUNCULUS ALAUDARIUS, *Kestrel*. This bird is more frequently seen in the plains in winter. It is occasionally met with in Darjeeling, when it is in hot pursuit after birds usually weaker on the wing. When it flies in among a number of birds of various size, there is generally a hurry scurry in which each bird makes for the nearest shelter. In the confusion which follows, the kestrel gets a bit distracted at the plethora of opportunities, and ends in securing nothing. When it makes, from a coin of vantage on a tall tree, a well aimed plunge, it shoots down in an oblique line with the blind speed of a rocket, it seldom misses, unless the quarry has moved a foot or two as soon as the plunge is made, in which case it shoots past the object, which gives the bird, if it is a thrush, a chance of escape. The kestrel is often, trained to strike Ortelans and the like, occasionally quails. In Darjeeling I have seen them go full tilt after bigger birds than themselves. I was, one morning within the biggish wire enclosure of the fowl house, with the door wide open. Two

birds passed within a foot of me, at the speed of a thunder bolt and hit against the wire netting with a force which stunned both of them. The whole affair was sudden and perplexing. When I had secured both birds, none the worse for the encounter, I discovered to my astonishment, the foremost bird was the female Grey-winged Ouzel (n°361). When they hit the wire netting in quick succession the kestrel was about 6 ins. behind, which seemed so dead beat that it offered but slight resistance, both birds were fairly blown. The acquaintance thus roughly started, was soon forgotten ; kestrel and I became fast friends. It learnt to eat raw meat in preference to little birds and small mammals. Female kestrel is 15 ins. in length. Colour reddish with dark lines on back and wing coverts, head and neck ; tail tipped white with dark bars ; stripe on side of the head not so prominent as the falcons ; plumage below chesnut or reddish yellow with brown spots.

(20) HIERAX EUTOLMOS, *White-naped Pigmy Falcon*, though peculiar to Sikkim and eastern side of the Himalayas, it is a difficult bird to find in Darjeeling. This pretty little hawk is shy and faithless, solitary in its habits, and usually hides among thick foliage of trees. Its peculiar note of warning is sometimes heard proceeding from the thick, sheltering cryptomeria trees ; you seldom get a sight of the bird, except when it is in denser forests. If observed unawares, it is usually seen sitting motionless and quiet on its perch. *Eutolmos* is 6½ ins. long, about as big as a good sized lark. Colour is black, glossed with green, above ; white spots on the wing and tail ; breast white and lower parts ferruginous ; it has a broad white superciliary line of white, which is generally conspicuous ; bill, is blue and falcon-like, stout in size ; it has a short projecting double tooth. This species feeds much on insects, occasionally, on young or small birds, Flower-peckers, Honey-suckers and Willow Warblers. As their lurking places are generally discovered by the small birds or their larger custodians, the thrushes etc., they are usually driven off by the noise and racket these birds set up. Assisted by this commotion, one is often aided in discovering this or one or other of the falcons or owlets.

SUB-FAMILY ACCIPITRINÆ *(Hawks)*

These comprise, Goshawks and Sparrow-hawks, both well known birds. They have short, stout, curved bills, tooth blunt ; tarsi long ; toes and claws long, the latter curved and sharp ; wings short and rounded. When hunting for prey, Goshawks fly near the surface of the land ; skim silently over short, straggling bushes, and by the side of tall spreading trees. Their flight is somewhat more typical to

this group, a few strokes to gather impetus, then a sailing turn with outstretched wings.

(22) ASTUR TRIVIRGATUS, *Crested Goshawk*, can be classed as a Darjeeling bird, though it is difficult to find, more so, at this elevation, owing to its habits of frequenting forests or their near vicinity. At times they appear near the outskirts of the station, ready to drop down from their perches on fowls, that have wandered away from jungle cover or other shelters where they resort. These Goshawks are generally seen hunting in pairs, so that it is with much difficulty, that a bird escapes the strokes of both these hawks, as they appear to play with much skill into each others hands (claws). I saw this frequently, when these hawks were hunting for marmots and pheasants. Female Goshawk is over 18 ins. in length ; legs and cere yellow ; irides bright yellow ; above, it is glossy dark brown ; wings and tail have four dark bands ; lower parts of the body plumage is white, with pale yellowish spots ; yellowish brown bars on the lower breast and below.

(25) ACCIPITER VIRGATUS, *Besra Sparrow-hawk*, is fairly common in Darjeeling in the cold weather, when it can occasionally be seen mixing with the larger *Raptores* as they take their constitutional in mid air. It can usually be made out by its small size and longish tail. This sparrow-hawk is one of the well known short-winged hawks, it has been trained for hunting on account of its speed in striking, activity, and cleverness in the chase, especially when sent after partridges, quails and snipe. These jungle Sparrow-hawks, as they are called are more slender in form than the previous groups, they have longer tails ; wings rounded ; bill very short and curved, compressed, with a formidable looking festoon on the margin of the upper mandible ; 4th and 5th quills the longest ; tarsi long, scuta not prominent ; toes long ; claws sharp and well curved ; irides bright yellow.

I have a Besra Sparrow-hawk in front of me whilst I write ; but it is a difficult bird to figure in a general sort of way, without going into a few details ; upper plumage is dark olive brown ; head and neck blackish ; dark about the face ; tail grey with about 4 to 6 dark bands ; beneath, the plumage is white, with reddish brown bands. Young birds have broad oval yellowish brown patches on the breast and below. In size male is 11 ins. and female 14 ins. The latter has vertical dashes and roundish streaks of colour on the breast.

SUB-FAMILY AQUILINÆ *(Eagles)*

This well known family of *Raptores*, might be called the typical group of Birds of Prey. These birds are of large size and stout

build, with strong bills, and well curved claws. Nevertheless they appear to lack the courage and daring of falcons and hawks, as though unconscious of their powers ; or it may be a knowledge of their strength and prowess, makes them unwilling to display them at every "hand's turn", unless pushed to it. These birds are divided into :—True Eagles, Kite Eagles, Hawk Eagles, Serpent and Fishing Eagles. To a certain extent their courage and daring decline as we proceed down the line of sub-families, and species to some extent ; but you can't adhere too closely to this rough and ready phase of eagle qualifications. From experience of these birds in their natural state Limnaëtus Cristatellus (35) crested Hawk-eagle is considerably more daring and powerful than *Neopus Malaiensis* (32) Black Kite Eagle, so that priority in rank of precedence in aquiline characteristics would fall to *Cristatellus*. To a lesser degree however there exists a fair substratum of truth in the lineal descent presented in the list.

(i) TRUE EAGLES

Genus Aquila, have long powerful wings, 4th and 5th quills the longest ; fierce and formidable looking birds ; bill longish, strong, fairly straight, arched and hooked towards the tip, margin sinuated ; tail longish ; tarsus strong, moderately long and feathered ; toes protected by scales ; claws strong ; hind toe and claw powerful ; head like all the Raptores typically large ; irides dark. These are birds of large size and dark plumage. Imperial Eagle is found in the district. It appears to frequent in preference, the outskirts, near well wooded parts of the country. Golden Eagle is not met with here. It is more plentiful on western side of the Himalayas ; but its home appears to be Central Asia, where it is held in high esteem by the Kirghiz and other tribes. This magnificent bird has an expanse of wings of over 8 ft. I have seen some having a much bigger sweep of wings.

(26) AQUILA CHRYSAËTOS, *Golden Eagle*, is doubtless the monarch of this family. It presents a type of bird that would be a credit (?) to any country for strength and magnificence. Colour of the plumage is rich dark, umber brown with glossed orange brown markings about the head, nape, shoulders and fore part of the thigh coverts which give the bird a golden appearance, when reflected by the rays of the sun ; irides orange brown ; in size it is about 40 ins. *Chrysaëtos* frequents rugged, fairly bleak, mountain sides, it is trained to hunt deer and wolves.

(27) AQUILA IMPERIALIS, *Imperial Eagle*, is inferior to *chrysaëtos*. It is more frequently seen at a lower elevation, and is fairly plentiful in the Terai in the cold weather. It feeds chiefly on game-birds, pheasants, florikans and smaller sized mammals when procurable.

It is often observed perching on the land, on rocks and prominent places, where it gets a good sweep of the country around, for likely prey to feed on. In size, male is 30 in. and female about 35 in. wing-expanse of the latter about 7½ feet. This eagle is dark glossy brown in colour ; quills black ; tail grey with black bars, broadest at the tip ; head and upper parts of the neck orange buff.

(29) AQUILA FULVESCENS, *Tawny Eagle.* These eagles are occasionally met with, but they are usually found more plentiful on higher altitudes in the district or in Sikkim. In the plains it is commonly known as "Uquáb," where it is met with below the sub-Himalayan tracts chiefly in winter. In Darjeeling and the district it prefers to get behind thick leafy trees, to be on the look out for a chance plunge at game-birds, and the homely domesticated fowls. At early dawn they are particularly active, after getting a good feed and perhaps a forty winks, they go off for a constitutional, sailing amongst the kites and vultures high up in the sky, where they may be seen circling with ease and grace ; size of the female is about 28 ins. wing extent about 5 ft. ; colour of the plumage, as the name implies is tawny brown ; blackish about the head ; hackles of the neck tipped pale brown ; wings breast and under plumage greyish black ; tawny speckles on the breast, wings etc. ; two light coloured wing bars and the same on lower part of the tail. The cry of *fulvescens* is wild, eagle-like scream.

(ii) KITE EAGLES

(32) NEOPUS MALAYENSIS, *Black Eagle,* as compared with the last group ; this bird has a smaller bill, not so strong, rounded and hooked at the tip ; festoon on the upper mandible is less prominent ; cere large ; wings very long ; toes short and claws small. In form generally not so robust as *Aquilae.* This eagle is seldom met with in Darjeeling. It is more frequently seen at Tongloo, silently perched, in the evening on a dry stump of a tree, or at other times circling in the air, where it gracefully sails and soars above or more frequently is viewed in the gorge below you. By day, it seldom rests and seems never to tire on the wing. It has a bad habit of going for sickly and young birds generally. It seems to have no desire to get blown by a hot pursuit after birds strong on the wing or to risk an encounter when the odds are uncertain. Female *malayensis* is 30½ ins. in length ; male 27½ ins. The general appearance in colour, is brownish black ; quills faintly barred with grey ; tail and its upper coverts barred white, below pale.

(iii) HAWK-EAGLES

We shall pass on, now, to the more daring Hawk-Eagles. These are fine large birds with muscular legs, powerful feet and claws and a good strong serviceable tearing bill.

(35) LIMNAËTUS CRISTATELUS, *Crested Hawk-Eagle*, would perhaps be the best species of this interesting group to better our acquaintance with, for various excellent reasons, chiefly as these birds are more frequently seen in Darjeeling than *Nisaëtus Bonelli* (33) crestless Hawk-eagle or the next two *Nipalensis* and Rufous bellied species, which are rare in the district. *Cristatellus* represents a good group of fine eagles with short roundish wings ; bill is prominently festooned ; head (in this case) with a fine crest, which flutters in the breeze, giving the bird a daring, chief-like appearance. In Darjeeling this prominent crest helps, one, not a little to distinguish this species, together with the fulvescent or yellowish brown colour associated with this bird ; upper plumage is glossy brown ; back and tertiary feathers black ; the distinctly banded wings and tail feathers cannot be mistaken when observed usually in the act of settling on a tree, more so the fine tail opened out like a fan, together with these markings, the dark streaks and mottling of white and brown are to be observed. I have a well marked *Cristatellus* before me, at the present moment. You must remember that allowances have to be made for variations of shades of colour etc. according to age of the bird, and season of the year. This eagle is about 25 ins. in length, female 29 ins. ; irides, cere and feet yellow ; head and neck are dull yellowish brown, with dark streaks ; breast is white and streaked. This species used to build on Birch hill, on the oldest, tall trees, it has forsaken this locality, and builds on large inaccessable trees, in Ghoom forest, usually, on the lower outskirts where I observed a nest two years ago. This nest was quite secure from intruders, as it would take the boldest climber all his time, daring and skill, to get to ten yards of the nest, should he be lucky enough to escape the bold dashes of the birds at him, which they do in a fierce unrelenting manner. This I observed, when several attempts were made to reach the nest, to secure a young partially fledged bird. These eagles are particularly destructive to poultry and can with ease carry off a full sized rooster, in spite of its formidable spurs.

(iv) SERPENT EAGLES

have the tarsi bare (unfeathered). These eagles are seldom seen in the district near Darjeeling and the same could be said of the fishing eagles, though most of them can be met with about our big rivers, Runjeet and Teesta. The former, have well hooked, short, curved bills, compressed sides ; wings, tail and tarsus long ; feet and claws short. These eagles are frequently met with in the plains, usually beside forests and jungle lands. The latter, the fishing eagles, differ from the former by their longer wings, which reach beyond the tail, also their outer toes are versatile and long ; soles of the feet have sharp scales. These we might say are the most

prominent difference between these two groups. They differ a good deal in habits and in other minor respects.

Both serpent and sea eagles can be considered, more birds of the plains. However the Osprey has strong claims to the Himalayas.

(v) SEA-EAGLES OR FISHING EAGLES

(40) PANDION HALIAËTUS, *Osprey*, is 26 ins. in length (female), male 23½ ins.; above, the plumage is brown; quills dark; tail pale in colour, with dark bars, a little white showing occasionally; head and nape white, dark brown stripes on the crown; dark stripe on either side of the face, from the eyes over the ear coverts; under parts of the body white; breast spotted; irides bright yellow; legs and feet with a bluish tinge.

I know not why this Osprey (Pandion) reminds me of the old legend of Loch-en-eilan (Scotland)—predicting the forsaking of these eagles, of their time honored nesting places on the pines about the old ruined castle of Rothiemurchus. Then returning once more to build as of yore, when a certain curse had been (being removed) fulfilled :—

When the eagles leave their nests
On castled Rothiemurchus' breast,
When five times thirty years have run
Since Danald's deed of shame was done;
Then sing aloud the roundelay
"Fide et Fortitudine" etc.

SUB-FAMILY BUTEONINÆ, *(Buzzards, Harriers and Kites)*

Show us that we are approaching a decided decline in Aquiline qualifications, both in build and daring. The bill of these birds is weak and small; tarsus long; feet and hind toe short and only used for gripping. The hind toe and claw, which we observed in the hawks and true eagles to be strong and powerful and chiefly used in dealing a "strike out" blow at their prey. Taking these natural defects into account, it is not surprising that these eagles are less daring and rapacious than the foregoing members of this Natural Order. These birds generally perch on low branches, usually they are on the look out for small mammals, lizards and frogs, or at a push they don't turn up their noses at carrion, or the labours of their more successful brethern.

Harriers, are distinguished from the former eagles by their large bristles, cere, and the lower part of the face having a ruff of small feathers, a sort of disc, which is met with in the owls; the tail is long. These birds are further like the owls in having soft downy

plumage, which makes their movements silent, and flight noiseless. They are usually seen hunting near the ground ; skimming over the surface of the land.

SUB-FAMILY MILVINÆ *(Kites)*

These birds are so well known, that it seems hardly necessary to offer any remarks. Typically they have the bill small, weak and much hooked ; tail in some of the commoner species is forked, which helps, somewhat to distinguish them from most of the eagles, also the appearance of their long, more curved wings when flying. Whereas the true eagles, having long tertiaries and coverts give them a much heavier and more powerful sweep of their pinions, and further the Kites are smaller in size. So that whether resting or flying they are readily distinguished from most birds belonging to the previous groups.

(55) HALIASTUR INDUS, *Maroon-backed Kite*, is well known to all in India. It is generally found in Bengal near the sea, or rivers feeding on small fish and aquatic insects. This bird is commonly known as the Brahminy Kite, as it is considered sacred to Vishnu consequently enjoys unmolested freedom in the plains, where it, occasionally, gets food thrown to it by pious Hindus and Mahomedans alike, the latter, owing to certain good fortune it brings on auspicious occasions. This species is 21 ins. long ; plumage is rich chesnut ; quills black ; head, neck and lower part of the body white.

(56) MILVUS GOVINDA, *Common Pariah Kite*, is a well known scavenger in India, so requires no introduction, for it must have long ere this introduced itself where there is anything in the shape of food, going a begging or meant for some one else.

III. FAMILY STRIGIDÆ *(Owls)*

This brings us to the last of the three main divisions, the *Raptores* have been divided into. Owls form a distinct and well marked group of soft plumage birds, having large heads, with eyes and face surrounded by a disc or ruff of close set feathers ; feet feathered ; toes reversible ; body closely feathered. These are the nocturnal Birds of Prey, some few the *Athene* etc : show a marked appreciation for the day, nevertheless all are more or less nocturnal in their habits. Their soft plumage gives them a silent flight when on the wing.

They are divided into the following sub-families :—

SUB-FAMILY STRIGINÆ *(Screech Owls)*

These are the common and well known owls. They have a complete facial disk ; wings long ; tail short ; bill longish with the tip curved ; tarsus long.

(60) STRIX JAVONICA, *Indian Screech Owl.* Better known as Indian Barn Owl. The bad reputation this bird labours under, in the plains, as a conveyor of evil tidings, especially when the screech is heard, does not seem to effect its own peace of mind, for it nevertheless appears to be happy and contented. In Bengal it goes under the name of "Buri churi" the bad bird, in other places, "death bird," messenger of death, and so on, names displaying the ignorance superstition and perversity of the human side of nature.

(62) PRODILUS BADIUS, is rare and generally found in the warm valleys in Sikkim.

None of this sub-family are found in or near Darjeeling.

SUB-FAMILY SYRNIINÆ *(Hooting Owls)*

These birds usually have well marked plumage and frequent woods and forests, from whence they keep up a hooting call of two notes. The head of this bird is smaller than the former group and facial disk incomplete ; wings rounded ; tarsus short and strong ; tail longish.

(66) SYRNIUM NIVICOLUM, *Himalayan Wood-Owl.* The body of this bird is robust and plumage prettily marked. This species is difficult to find owing to its fairly restricted nocturnal habits, also its propensity for remaining hidden away in big trees with dense foliage, and, usually, in well wooded parts of the district generally over 7000 ft., *Nivicolum* is 17 ins. in length ; plumage mottled above, with reddish brown and white ; wing coverts spotted with white, brown and white bands on the quills ; tail brown with light bands ; lower parts of the body are prettily marked with bars of brown and white.

SUB-FAMILY ASIONINÆ

These owls have ear like feathers on each side of the forehead, usually called aigrettes ; wings long ; head large ; a fairly complete facial disk of feathers ; bill short and curved.

(68) OTUS BRACHYOTUS, *Short-eared Owl.* These birds visit us chiefly in the cold weather, so that when found in the more wooded districts below Darjeeling, they are usually on their migratory

journey to the plains, taking in easy stages down the hills, as the cold increases and chances of food lessen.

These owls are not averse to the light of day, when they can fly with considerable ease and are fairly swift on the wing. Although I have this species before me, which was procured in the Terai, nevertheless, it is a difficult bird to figure, in a general sort of way. Less prominent, perhaps, are the two aigrettes on either side of the head. *Brachyotus* is 15 inches in length ; tips of the wings exceed the tail ; plumage, above, is brown, pale tawny, the feathers with pale margins ; quills darker with brown bars ; bars also, on the tail which is yellowish grey ; disk pale fulvous with black streaks and buff mottled with yellowish brown, underparts are dull yellowish brown with narrow stripes ; tarsus and part of the toes plumed ; irides yellow. Owls, being birds with nocturnal habits, offer but few opportunities for close observations, most of the species are difficult to find, as they hide away during the day time, and not a few frequent dense forests. Consequently they are a family, few care to push their enquiries, into, the habits and characteristics of the different species found in the district ; nevertheless they present two or three interesting types of birds, so that a closer acquaintance with the Forest-eagle Owl, or Tawny Fish Owl, or one of the Owlets, Cuculoides or Brodiæi, will quite repay, an introduction.

(71) HUHUA NIPALENSIS, *Forest Eagle-Owl.* This fine Eagle Owl is often heard during the night ; in the dense forests at Tongloo and Sandakphu ; not infrequently in Darjeeling in the rains, or cold weather. Its deep *hoo, hoo,* sounds weird and melancholy in the silence of night, repeated at intervals, brings back to memory days of toil and dangers in the dense forests, where the big black bear *Ursus Torquatus vel Tibetanus,* and panther prowl close at hand, and now in the darkness of night these marauders are left to their own sweet wills. In appearance this owl is eagle-like ; colour of the plumage is dark brown ; feathers barred and with edge tawny ; yellowish on the back ; quills brown and having whitish bars ; tail pretty well the same colour ; underparts of the body brownish white, spotted and barred with brown, more prominent where they coalesce into a pectoral gorget. In general apperance the bird is barred and spotted. In length *nipalensis* is 23 inches ; bill yellowish ; irides brown ; bill is strong, longish, straight and hooked like the eagles ; upper mandible festooned ; the facial disk imperfect ; wings long, 4th and 5th quills the longest, most of the primaries emarginate on the lower web, tail moderate ; tarsus short, strong and well feathered ; toes short, strong and scaled ; claws large and acute.

(73) KETUPA FLAVIPES, *Tawny Fish-Owl.* This fine large owl, belong to the genus Ketupa, is about 24 inches in length, bill is

large and strong; large ear-tufts; wings short; irides yellow. These birds live as a rule in well wooded districts and can occasionally be seen either hunting for fish or seated quietly on the rocks, at a good height above the river. I remember, seeing this big Fishing Owl on more than one occasion perched, above a big land slip depression, in Sikkim, at midday, after its morning's feed of fish. It was a fine, heavy looking bird, from the distance it was viewed, it scarcely looked like an Owl, more eagle-like in appearance, and probably would have been mistaken for one of the eagles, had, one, not had previous acquaintance with this bird and its habits. It sits erect, in a perpendicular position, the white on the underparts showing out distinctly, giving it a somewhat weird appearance, as it looks grimly down at you from the height above, more so in the dusk of evening. Colour of the plumage is dark brown with large spots and bars; quills brown with rich tawny bands, the same on the tail. In general appearance *flavipes*, above is a rich tawny colour.

SUB-FAMILY SURNIINÆ

These are the owlets, usually of small size. Birds belonging to this group were beloved by the goddess Minerva, for reasons best known to her ladyship. We may venture to suggest, that, it must have been on account of the uncommonly wise look these birds have, on all occasions they are spotted. They generally hide among the foliage of trees during the day, though they are quite at home in the day light and appear to experience no discomfort. The facial disc is not so prominent in these birds; bill is short and hooked; irides yellow; tarsus moderate, and feathered to the claws.

(79) ATHENE CUCULOIDES, *Large barred-owlet.* You are likely of having ample opportunities of making the acquaintance of this large Owlet in Darjeeling and the district. It usually hides itself during the day amongst the foliage of cryptomeria trees, chiefly on account of the aversion small birds have of its presence. *Cuculoides* is oftener heard than seen, its plaintive *coo-loo-loo-lo* can be heard a good distance away. As evening sets in, its more owl-like notes come in something like terminations of irritability, or warning to small birds, that it is about to hunt for a meal. These terminating calls remind us not a little of the screech-owl. In spring, long before the dawn, its ceaseless serenading can be heard, not at all an unpleasant sound. Then *poliocephalus* (small cuckoo) takes up the tune to its own setting a sort of *rick-rick-rick-rick*, followed after an interval by Sibia's shrill and sweet *tee-aree-aree-aree-aree*; a few other early risers join in later on; as the dawn breaks Yuhinas, Green-backed Tits, Willow-Warblers, Hill-Tits and Minlas

are all whistling or calling merrily out to each other. Thus it seems as though Bird-land heralds in a bright spring morning.

During the day should the smaller birds discover Barred Owlet's whereabouts, they all go for it with a zest and earnestness worthy of a good cause, and torment it by the discord they set up, till it flies to another tree, where they all follow in hot haste, led to the attack by a few lusty Sibias, and this goes on till, it has fairly given them the slip. Like most of the Athene, *cuculoides* leads a solitary existence, a sort of retirement to some specially secluded locality, to which it tenaciously adheres. A male of this owlet has taken up its quarters, in the old olive tree at the head of a road leading to the house. In spring he seems to feel the want of company; his unceasing *coo-loo-loo-lo* sounds, are more frequently heard, in the cheerful spring morning not unlike an invitation. When all bird-land has either paired off, or shown greater devotion and concern for their partner's welfare in life's struggle. Long after, all the birds have settled down to the more strenuous business of nest construction, picking up or discarding, with the nicety of qualified architects, the proper materials, of only the plants and mosses, as the case may be, their forefathers had used before them, Cuculoides, begins to exhibit more social instincts, he shared a nice tender vole, he had secured for breakfast with his, may be mate of not many summers, his mournful *coo-loo-loo-lo* has changed for a more masterful Raptorian call, as he busies himself setting his house in order, in the olive tree, which has a prominent compartment caused chiefly by decay, about ¾ up the bole of the tree. This somewhat dank and musty chamber has served, as a safe retreat, when the storms raged; the lightning flashed and heavens loud sounding artillery had sent every bird under shelters which, at best were precarious. This not a little repulsive looking hollow in the olive tree, has at this particular period got scoured and cleaned inside, and Mrs. Cuculoides lined the floor with soft chips of woody fibre; a few dead leaves and a feather or two. *Cuculoides's* courtship has been short and philosophical, and now that his mate has entered on the more serious duties of life, he sits on the bough, above, with an ugly pugnacious frown for all who approach too close to his abode; no doubt he possesses a fair stock of bravery what though he hastely retreated within when *Limnetus cristatellus*, the bold daring Crested Hawk-eagle alighted just over head, and scanned the horizon; but you must take into account the occasion, on which *Lanius tephronotus* the Grey-backed Shrike, caught the rough end of his tongue or when Sibia lost a tail feather or two for pushing his enquires too far.

Barred Owlet is about 10½ inches in length; irides are golden yellow; plumage, above, is dusky rufous, the feathers barred horizontally with white and dull reddish; some white showing on the

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greater coverts ; breast white and spotted ; underparts of the body plumage are rufescent. The interesting member of this species I have, just, introduced you to, a fairly permanent resident on the olive tree. By way of a change, no doubt, he shifts his quarters now and then, to one or other of the cryptomerias near at hand, or shady trees in the locality.

(80) GLAUCIDIUM BRODIÆI, *Collared Pigmy Owlet*, though occasionally seen now and then in Darjeeling, prefers a lower elevation, about 5000 to 6000 ft. where this species is found more plentiful. This owlet is about half the size of *cuculoides* and lacks the conspicuous barred markings. In length it is 6½ inches ; bill greenish yellow ; irides yellow ; wings short ; tarsus, toes and claws strong ; tail longish. This bird is the smallest of the family and differs a good deal from *Athene*. It has a darkish, uniform fulvous collar, somewhat showing on the upper part of the disk ; back, wings and tail tawny with streaks and spots ; plumage of the lower parts is brown with white and brownish yellow bars ; white on the breast and under tail coverts. This pretty owlet is very similar to the last figured species in habits. It has however a prominent distinction, in the peculiar and easy mode of securing its meal, when it gets peckish. It noiselessly slips in amongst a batch of small birds joyously frolicking among the branches, slowly adjusts its wings, shuffles its feathers, then looking down on them with hungry, malignant eyes, gives vent to a *hoot, to-too, to-toot*. This brings all the small birds round it loudly protesting their indignation ; but it keeps on adjusting its position, first facing one directing, then turns slowly round, and faces the other, calling out impatiently *hoot, to-too, to-toot* ! as much as to say " look sharp, I am hungry, I'll stand no nonsense ; no trifling with me ! " Even its mandibles repeat the warning *hoot, to-too, to-toot* quite audibly. As the din and noise of the little birds increase, at last as if it can stand it no longer, it shoots off the branch with a well aimed plunge, right in amongst them and secures the fatest it has marked out, for its meal. On the occasion I watched this little tragedy, I bowled *Brodiæi* over with shot from a small collector's gun I had, it now adorns my little museum with the small Willow Warbler it had just started on still held by its claws. Some of the Lepcha shikaries imitate this peculiar call for snaring birds for the cage, chiefly Siskins and Bullfinches. With the Collared Pigmy Owlet we shall close with *Raptores* Birds of Prey and commence the next, the most interesting of Natural Orders among birds.

(2)—INSESSORES (Perching Birds).

This order lays claim to far the biggest number of birds found anywhere, at least $\frac{3}{4}$ or more, of our feathered community.

"They comprise" says the late Dr. Alf. Russel Wallace, the famous naturalist, "at once the most beautiful, and the most familiar of birds. The feathered inhabitants of our fields, gardens, hedgerows, and houses belong to it. They cheer us with their song, and delight us with their varied colours. Their activity and elegant motions are constant source of pleasure to every lover of nature. They are the birds with which, from our infancy and boyhood, we are most familiar; and we therefore involuntarily derive from them that ideal, or typical form of animal life, with which we connect the general term bird. Here too, the greatest variety of forms and habits is found, which are all connected together by such insensible gradations that to discover in every case their true affinities has ever been, and still remains, one of the most difficult, and at the same time most interesting problems the naturalist has to solve."

The *Insessores*, we might say, comprise all the birds not included in *Raptores*, *Gemitores*, *Rasores*, *Grallitores* and *Natatores i.e.* Birds of Prey, Pigeons, Game-Birds, Wading and Swimming Birds. They have their feet on the same plane: bills, varied in form and shape; wings usually with ten primaries, and tail of 10 feathers in most of the sub-families; feet and legs suitable for perching, and some groups of birds equally well adapted for walking on the land and hopping about. Young of *Insessores* are born callow, and require to be fed, nourished and educated by their parents, I might add, for some time, before dispensing with the maternal care. This order possesses other important qualifications in habits and structure, which we need not dwell, at length on, at the present stage of our enquiry. This vast Order has given much trouble to Ornithologists adducing various systems. The following, grouping together into tribes of the *Insessores*, will considerably facilitate the study of the natural system, also lessen your labours not a little.

(1) *Fissirostres*—Bill having a large wide gape; feed on insects chiefly, on the wing—The swallows etc.

(2) *Scansores*—Bill varied. These birds have their toes in pairs two in front and two behind; suitable for climbing—woodpeckers, Barbets etc.

(3) *Tenuirostres*—Bill slender, tip pointed, often curved. Feed on juices of flowers, buds, pollen, soft fruit and insects.

(4) *Dentirostres*—Bill, upper mandible thickest, notched near the tip and toothed. These birds feed chiefly on insects and fruit.

(5) *Conirostres*—Bill, tip of which entire, generally both mandibles hard and thick ; typically cone shaped. Feed on hard grains etc.

Turning to the list we find that the *Fissirostres* commence the natural system, for reasons we need hardly enter into. These are represented by the following families found in India :—

TRIBE FISSIROSTRES.

I.	HIRUNDINIDÆ	... ...	Swallows and Swifts.
II.	CAPRIMULGIDÆ	... ...	Goat-suckers.
III.	TROGONIDÆ	... ...	Trogons.
IV.	MEROPIDÆ	... ...	Bee-eaters.
V.	CORACIADÆ	... ...	Rollers.
VI.	HALCYONIDÆ	... ...	Kingfishers.
VII.	BUCEROTIDÆ	... ...	Hornbills.
VIII.	EURYLAIMIDÆ	... ...	Broadbills.

I. FAMILY HIRUNDINIDÆ *(Swallows and Swifts)*

Associating these two birds under one family, presents perhaps fewer difficulties when examining birds in their wild state than otherwise (as museum specimens), when we may have forseen a few apparent disabilities. Without comparing their disagreements we will merely examine the peculiarities, as these two sub-families present themselves.

SUB-FAMILY HIRUNDINIDÆ, *(Swallows and Martins)*

These birds have short, triangular shaped bills, considerably depressed, tip pointed ; wings long and pointed ; tail usually forked. Soft plumage of these birds aid their silent and rapid movements on the wing, circling at every turn in their hunt after insects usually off the ground. Their flight is easy and graceful. Both swallows and martins construct their nests of mud, which they work up into pellets, in any patch of puddle, near by, so much the better, the nest is generally built in the angle of a wall and roof ; an exposed place, at a fair height from the ground. A look at the list will show the number of swallows and martins which visit the station, at certain seasons of the year, for a longer or shorter stay. Some merely pass over on their migratory expeditions and remain a day or two at the outset to break journey and sample some of the forms of insect

life peculiar to the place. Others remain with us quite a long time, These birds are generally seen either resting on the electric light wires, or more frequently darting about the air ; circling round the broad jhoras, water courses, with saucer like basins and banks protected from inclement weather where winged insects have passed the hibernating period of their existence, in chiefly the refuse, of the surrounding houses and busties not far off, which has been dumped down to the contamination of these beautifully crystal springs. Most of these fleeting, ever active, species of *Hirundinidæ*, you will seldom or ever get a chance of being familiar with. Their flight is rapid and the evolutions in the air, of all members of this group is marvellous and difficult to follow by the eye. It requires not a little patience to distinguish the typical markings of each genus, more so of the species with any assurance of certainty.

Genus Hirundo, Bill largish, very broad at the base, triangular in shape, tip compressed ; tail, varied in the different species ; tarsus unfeathered ; feet moderate. Contain two groups :—I *Hirundo*, where, colour, above, is fairly uniform. II. *Cecropis* head or rump or both (rufous) chesnut.

(82) HIRUNDO RUSTICA, *Common Swallow*, however, ought not to give much trouble in distinguishing. Its longish forked tail will help to identify it from other members of this family, together with the marks and colour. In length it is 7½ inches ; a large white spot or patch, on the tail is always perceptable ; above, the plumage is glossy bluish black ; throat ferruginous ; breast band, black ; beneath with a brownish red tinge. It is sometimes called the English Chimney Swallow. In Darjeeling it frequents more open country and I doubt if it seeks a night's lodging in these undesirable house flues in this district. *Rustica* is migratory in its habits and visits the plains in the cold weather. A few remain behind and breed in Darjeeling, but most of them go far north.

(85) HIRUNDO DAURICA, *Red-Rumped Swallow*, or Mosque Swallow as it is sometimes called, presents to the eye more distinctive markings. They are plentiful, greater part of the year in Darjeeling, and build freely on more exposed corners of dwelling houses chiefly, generally under the eaves ; just above a window at times, and are oftener than not badly treated for this act of implicit trust and confidence in our good nature. One pair, for many years has found a comparatively safe corner at the apex of the west window of St. Columba's Church in Darjeeling. *Daurica* is 7½ inches in length. colour, above, bluish black ; the ferruginous markings chiefly on the rump, helps to distinguish this species, also ear-coverts and sides of the head which are ferruginous ; lower parts of the body plumage are brownish red with dark streaks ; part of under-tail coverts black.

Hirundo Nipalensis, would be an appropriate name, for it seems more at home in these parts and Nepal, still more plentiful, than when off to the plains for a change of air. At times it is popularly called house martin, owing to its love or appreciation for human habitations and surroundings, even the busiest parts of Darjeeling does not seem to alarm it, for I have seen birds year by year build in the exposed gables of the market, in such precarious places as would make a *Merulina* mother shudder. These birds, *Daurica*, are seen going about their business in a quiet matter-of-fact sort of way in spite of the noise and racket going on just below them, and it does credit to both Nepaleese and Tibetians to hear, that, on occasions when a young one has fallen to the ground, to get in all probability trodden under foot, it has been gently replaced in the nest again. The remaining species of swallows are found chiefly in the plains.

Martins, on the other hand have more somber plumage they are divided into sand and crag martins, with this latter group is found the better known, house martins, under the genus *Chelidon* (urbica). Martins, have weak, depressed smallish bills ; broad at the base. In size these birds are smaller than swallows generally, excepting the small sized species of swallows which, however, do not visit Darjeeling such as *Hirundo filifera* etc. Matins have longish wings, reaching beyond the tail ; tail is even ; tarsi are a bit longer than *Hirundo* ; toes weaker ; claws longish.

I. SAND MARTIN

(88) COTYLE SUBSOCCATA, *Dusky Martin*. This small martin is frequently met with, when flying in mixed groups of swallows and swifts in Darjeeling, usually during the rainy season. It prefers the vacinity of water courses and bigger Jhoras, to skim over the gorges. The locality known as Kagjhora is a favourite resort of these martins, occasionally accompanied by some of the crag martins. Their flight is a bit laboured, when compared with the swallows and swifts, which latter, shoot past them with lightning speed ; but the martins labour bravely on picking up on their aërial journey, what insects the more masterly fliers have made snaps at and perchance missed their aim, but having attained a velocity which they have no wish to slow down to attempt a second shot. For this reason, may be, we find the little martins skim close to the ground along corners of the upper and less frequented roads, where they meet with a better chance of disturbing insects on the ground or half winged gnats missed by the swallows and swifts. I have often passed corners of a road, overlooking a jhora, when martins have been flying backwards and forwards skimming along about a foot off the ground, at times they look as if they are coming straight for one,

but pass, by a foot or two. The Dusky Martin is 4 inches in length; greyish umber above; darker on the wings; white on the under-tail coverts, belly and throat; brownish band across the breast.

II. CRAG MARTINS

These birds have a partiality for buiding on rocks and crags; a patch of white on the tail distinguishes them, on the wing, from the sand martins; in other points they are much alike, though they differ in habits generally.

(91) COTYLE RUPESTRIS, *Mountain Crag Martin.* This bird visits Darjeeling about close of the rainy season, when it is seen in numbers in company with other species of Hirundinidæ. *Rupestris* is larger in size than Dusky Martin, being about 5½ inches in length; ashy brown in colour above, darker on the quills and tail; large white patch on the tail; abdomen and lower body plumage rufous ashy; bill black; legs reddish brown. These birds are found more frequently foraging over rocky country and bare hill sides.

GENUS CHELIDON, *(House Martins)*

differ a little from the previous group. Their bills are shorter and thicker than the swallows; tarsi and toes feathered; tail slightly forked.

(94) CHELIDON NIPALENSIS, *Little Himalayan Martin,* is usually found in bigger numbers at a lower elevation, about 5,000 feet where it can be seen skimming over the low bush jungle, and gorges in the warmer valleys, in October and during winter. These martins have been seen building their nests in colonies, in the interior of Sikkim, at a fair elevation among the rocks, in cave-like hollows. This species of *chelidon* is 3½ inches in length; colour, glossy black above, beneath, with the throat and rump pure white.

SUB-FAMILY CYPSELINÆ, *(Swifts)* are perhaps the swiftest birds on the wing we have. I have frequently seen them in North Sikkim, come in like rifle bullets, to their nests, in holes, on the bare rocks and precipitous hill sides, below the snow-line. This you will notice to advantage at day break, then again late in the evening they come in thick and fast, reminding one of the targets at a big rifle range, or large hives of bees. These swifts come in a southerly direction, so, one may safely judge that most of them have been on the wing a good part of the day in Darjeeling and about other human habitations, circling at lightning speed in their hunt for insects. They are rarely seen to rest in the station,

as swallows and martins do, so that they must possess marvellous, untiring powers of flight. When they return to their nests they are neither blown nor tired, but come in as fresh as ever. On several occasions I tried to time the speed or velocity they had gathered on these homeward flights. Judging from distances the eye can follow it must take them, but a few minutes to traverse the distance between Darjeeling and their nests, which took me nearly a week to get there. They appear to make a well calculated bee-line, occasionally they over shoot the mark by a foot or two, how each swift remembers the exact position of its nest is no easy matter to explain. Swifts differ much from swallows and martins, chief of these we might say is their feet, also in the construction of their nests, which are made either of pure glutine from the large salivary glands or mixed with paper, pulp, rags etc: Their feet are composed of two phalanges and can be directed all the toes forward, an admirable aid to clinging to a perpendicular ledges or tiers of rocks; their wings are strong and muscular; the thorax bone reveals their superiority of flight over the swallows and martins. Bill is small and hooked; wings very long and pointed; tail short; feet short; hind toe reversible directed forward (when necessary).

(95) ACANTHYLIS SYLVATICA, *White-Rumped Spine-tail*, belongs to a typical group amongst the swifts. The tail feathers are rigid, ending with sharp needle-like spines. These birds are seldom seen in Darjeeling, they are more frequently met with from 4000 to 5000 ft. elevation. Tail is short and has a wedge-like appearance. *Sylvatica* is $4\frac{1}{2}$ inches long. It has the sombre look of the martins, with long pointed swift's wings; above, the plumage is black with a glossy greenish tinge; white on the rump and upper tail coverts as the name implies; breast and throat grey; under parts of the body white; bill black. This small swift is usually found hunting over scrub jungle and patches of hill cultivation, generally close to running streams and springs of water.

(98) CYPSELUS MELBA, *Alpine Swift*, represents the group known as the true swifts. Birds with long and powerful wings, 1st and 2nd quills the longest; tail not infrequently emarginated; tarsus feathered; toes versatile. Alpine Swift is big in size, being about 9 inches in length; wings very long, which reach much beyond, tip of the tail, quite $2\frac{1}{2}$ inches longer; wings are $8\frac{1}{2}$ inches long; tail forked colour above, is reddish brown, dark on the wings; purple gloss on the back; white on the underparts of the body; irides brown; legs and toes purplish in colour. *Melba* is not infrequently seen in Darjeeling. Its flight is strong and vigorous, and has a wide range of over a hundred miles, for you will find them at most places in Sikkim and the district, after their day's forage they retire to rest at certain localities miles away from their hunting grounds. In

winter they are more frequently seen, in which case they locate themselves usually in caves at a lower elevation in Sikkim. In spring they retire to places nearer the snow line.

(100) CYPSELUS AFFINIS, *Common Indian Swift.* Though it is found in most parts of India, you are hardly likely to meet it in the district, as it keeps to the plains. *Affinis* breeds in caves, cliffs and rocks in big numbers on the Eastern Ghauts, in not a few instances; in places not far from the sea. Their flight is vigorous, perhaps not so well sustained as the spine-tails and alpine swift or *Acanthyllis Caudacuta* (97). *Affinis* is 5½ inches in length and wings 5 inches so that as far as length goes, swifts appear to be all wing, tip of which reaches considerably beyond the tail; toes are reversible, backwards or forwards; tarsus feathered more so in front; toes and claws short, strong and serviceable; wings 1st and 2nd quills the longest; tail short. Colour above is brownish black with a greenish gloss; back darker; head brown; throat and rump white; underparts of the body brownish black.

(101) CYPSELUS LEUCONYX, *White-clawed Swift,* is rare and only occasionally met with either in Darjeeling or the district; usually in spring or autumn. In size it is bigger than *affinis*; but similar in colour, excepting the glossy brown it has about the darker parts of the plumage, the feathers are tipped light; tail more forked. *Leuconyx* is 6¼ inches in length; feet small; claws white. When observed it is near the forest. It keeps much to low scrub jungle where it skims over in its hunts for insects, and the more wooded parts of the country. It is perhaps more frequently met with on the Singalillas and north Sikkim.

(103) COLLOCALIA NIDIFICA, *Indian Edible-nest Swiftlet.* Is an interesting species, more so owing to the typical construction, and edible nature of its nest, which is made of mucus from the salivary glands of these swiftlets, curiously interlaced. When fresh it has an opaque bluish white colour. Nests which are used the succeeding years, get mixed with feathers and other substances, as the birds patch, add and generally do up their abodes for the prospective fresh arrivals. These nests are usually constructed in deep roomy caves or enclosures among the rocks, *nidifica* build in colonies and crowd their nest together, on the sides, and roofs of these places. These swiftlets are of small size about 5 inches in length; mouse brown in colour tinged with green; beneath, the under plumage is pale; dark in colour on the top of the head, wings and tail. Edible-nest Swiftlets have great powers of endurance judging from their long sustained flight. They travel with rapidity and appear to rest rarely except when they get safe home again. Like the bees no matter how far a field they have wandered they select the straightest line home

and never seem to miss their mark. As you watch them returning in batches at intervals, up till long after dark none seem to have, in their headlong flight, over shot the mark or has to wander up and down this rugged part of the country in search of its particular cave.

FAMILY CAPRIMULGIDÆ *(Goat-suckers)*

This well known and typical family, have many representatives in India; their plumage is soft and mottled; eyes large, general appearance not unlike the owls. The bill is broad, depressed and weak, gape wide, hooked at the tip; wings short and rounded; tail long; tarsi short and stout; toes strong, and like the swifts, the outer toe in some of the species can be reversed though partially; bill is curved; gape wide; rictal bristles strong and numerous; wings long; tarsus short, protected by scutae. These birds like the owls have nocturnal habits; they are popularly known as night-jars, Fern-owls or night-hawks.

(106) OTOTHRIX HODGSONII, *Hodgson's Frog-mouth*, is occasionally met in Darjeeling. It reminds us not a little of the owls, partly owing to its nocturnal habits; soft plumage and silent flight; also when close at hand, its dark richly mottled colour. *Otothrix* is somewhat rare in Darjeeling and difficult to find, as it hides in the more thickly wooded parts during the day, and sallies forth in the dusk of evening to hunt for insects, which it chiefly feeds on. I have occasionally met with this species on Birch Hill, also Silver Spring, and Ghoom forest and some of the more wooded parts close by. It sits silently, as you approach, in a squat position usually lengthwise on the branch of a shady tree having large lateral branches. In the dusk of evening it is not an easy bird to make out, unless you know its peculiarities, when disturbed it has a low silent flight. The usual position of Frogmouths is erect; but when alarmed, or on being approached they stoop as though concealing themselves, they remain parallel to the branch they have been seated on. In size this species is 10½ inches in length; colour of the plumage is dark, glossy, black, mingled with ferruginous, mottled and blotched with black and white; tail ferruginous speckled with black and light coloured bands; beneath it is dull chesnut, the feathers tipped black. The specimen before me has the bill small, hidden away among the feathers and bristles, the upper mandible not overlapping the lower, which seems to be the case of not a few of this family.

SUB-FAMILY CAPRIMULGINÆ

The true Goat-suckers have small, weak and flexible bills; wing long; tail long; lateral toes short, middle toe long; claws, inner margin pectinate; hind toe short, reversible in some species.

Genus Caprimulgus, bill, broad at the base, short, compressed and tip bent; strong and numerous rictal bristles, which aid them, to hold the insects, these birds are on the hunt after.

(107) CAPRIMULGUS INDICUS, *Indian Night-jar*, is frequently met with at low elevations in the district and in Sikkim. This species is bigger than Frog-mouth, being about 12 inches in length. In the long summer evenings these night-jars are often heard, more so when near dense forests. Its song is refreshing and pleasant to the ear, a sort of *tew-yo-yo, tew-yo, tew-yo-yo*. It is however one of those bird-land songs which are difficult to transpose. *Indicus* is light ash in colour, with black streaks on the feathers; quills dull chesnut with spots and bars.

(112) CAPRIMULGUS ASIATICUS, *Common Indian Night-jar*, is well known and plentiful throughout the plains. It frequents scrubby jungle, groves and gardens. Its note is not unlike the croaking of frogs in a marsh, or a stone skidding over a frozen pond, a sort of *tyook—tyook—tyook*.

FAMILY TROGONIDÆ

We have one representative of this beautiful group of birds, the pride of many a tropical forest. The bill is shortish, strong and curved from the base, a bit triangular; gape wide; longish bristles; wings short; tarsus short; toes short; tail typical, long and broad; plumage soft; neck short.

(116) HARPACTES HODGSONI, *Red-headed Trogon*, is found in the thickly wooded parts, between 4000 to 5000 feet elevation. It is 13 inches in length; tail 7½ inches; plumage of the male is dark crimson and scarlet richly marked on the breast, head, neck and throat; ferruginous-brown on the back, scapulars and upper-tail coverts; a little black and white on the wings; quills black with some white on the primaries; tail chesnut, tipped black, a few of the outer feathers with white. The female lacks the deep crimson on the head, neck and breast. These few, more typical markings will help, to distinguish this handsome bird together with its prominently long tail, composed of feathers grading in lengths. The bill is smalt blue; irides chesnut brown; feet and legs pale lavender. These Trogons are seen to perfection in their silvan retreats, at about 2000 to 4000

feet elevation. I saw a number of them some time ago, busy in their chase for insects, which they catch not unlike the fly-catchers, on the wing or whilst, gaily flying from tree to tree and hunting among the shady foliage and thick branches feeding chiefly on *Coleoptera*. Trogons are usually seen in parties of six and seven, they seem to prefer certain localities, for as often as I visit these places, the woods near Teesta river, above the bridge, say a mile or so below Munjitar Bridge; some of the warmer valleys in Sikkim; or Reang forest, to the south and east of us, one has not long to search before finding Trogons. It is a sight not easily forgotten, to fall in with a group of these beautiful birds, with their rosy peach coloured breasts, males with crimson heads and a rich display of colour, on your return to any of these places, you seem to see them as before, perhaps their numbers are a bit increased or deminished, as the case may be. These birds are seen to advantage in spring. They build in hollows, in trees or decayed tree stumps. Their eggs, two in number are spherical in shape, yellowish brown tinged, an ivory colour.

FAMILY MEROPIDÆ *(Bee-eaters)*

These birds are well known in India, more so in the plains, so that, a separate note seems hardly necessary. The bill is long, slender, curved a little throughout and sharp pointed; wings long and pointed; tail typically lengthened in most of the species; tarsus short; feet short, claws strong and curved. The prevailing colour of this group is leaf green with variations of chesnut, blue or yellow.

(117) MEROPS VIRIDIS, *Common Indian Bee-eater*. This small green bird is seen in the plains, in spring and during the rains, more plentiful; not infrequently sitting on telegraph wires from where it sallies forth after bees, and other insects which they capture on the wing and usually return to the same perch. as do flycatchers. This particular habit or qualification has gained for it the popular name of fly-catcher. You must have marked its typically constructed, or form of tail, which has two long feathers, the *Uropygials* $\frac{2}{3}$ of which taper to long and thin, ribbon like feathers, somewhat rigid, which makes these birds distinguished without much difficulty, more so by its long slender bill. The true fly-catcher, which we shall take up later on, is quite a different bird belonging to the *Muscicapidæ* family of Dentirostral tribe. If it had not been for the wide gape of *meropidæ*, and other qualities, construction and habits, it might have found a place among Tenuirostres. Indian Bee-eater is found in most parts of India, but ascends to no great elevation in the district. It is about $7\frac{1}{2}$ inches in length from tip of the tail ordinary, *Uropygials*

measure about 5 inches ; bill is black ; irides ruby red ; feet plumbeous ; plumage is bright leaf or rather grass-green, with golden gloss on the head and hind neck, nape a little more guilded in some of the specimens. Sides of the head with a black streak from the bill to above ear-coverts ; quills with a tinge of red ; throat verdigris green ; it has a black collar above the breast ; under parts bright green ; undertail coverts and vacinity cœrulian. In Darjeeling the two species which may occasionally be met with are *Ægyptius* (120) and *athertoni* (122) ; but these even not often.

(120) MEROPS ÆGYPTIUS, *Egyptian Bee-eater*, is similar in shape and colour to *viridis* ; but a closer inspection will show a variety of differences. In size, bigger, being 12 inches in length. Colour generally, is more verdigris blue above, more so on the back and upper tail coverts ; it has a light yellow line and broadish band of blue over the eyes ; a similar line of black through the eyes to ear-coverts, which was observed to be black in *viridis*, is more greenish blue ; throat chesnut ; lower parts of the body bluish-green.

(122) MYCTIORNIS ATHERTONI, *Blue-necked Bee-eater*, is much larger than either, being 14 inches in length. It is found in forests and thick bushy jungles, usually below 5,000 feet elevation, more frequently near, foot of the hills. Bearing in mind the general run of Bee-eaters, this species presents, but few difficulties in recognising it. The prevailing colour is bright vernal green (colour of new spring leaves) ; forehead blue ; neck hackles, are long, blue ; beneath traces of buff ; a good deal of buff about the plumage of the bird, more noticeable when it is flying ; legs have a greenish tinge ; irides yellow. The following lines from Hodgson, most aptly reveals characteristics of this species. "They are of dull, staid manner. In the Rajah's (Nepal) shooting excurtions, they are frequently taken alive by the clamorous multitude of sportsmen, some two or more of whom single out a bird, and presently make him captive, disconcerted as he is by the noise," and Captain Boys says "This beautiful bird has a peculiarly wild note and is very difficult to approach." It has dense soft plumage, long stiff hackles on the breast ; wings shorter and more rounded than the *merops* ; bill is long, curved, strong and compressed.

FAMILY CORACIADÆ *(Rollers)*

are well known birds in India, perhaps better known than even Bee-eaters. They are birds of large size, from a distance, not unlike Jays in appearance, consequently the popular name Blue Jay, given to them by Europeans in India, which name for some reason or other

has stuck to them. The anatomy (structure) of the Coraciadæ, their habits, food and nidification show them to be a distinct group. Rollers lay white eggs, whereas Jay and *Corvidae* lay coloured eggs with brownish stripes and patches. Like *Meropidae*, Bee-eaters, Rollers feed on insects and are partial to a seat on telegraph wires in the plains; and perches, where a clear open view is obtained, resting quietly, or on the look out for insects. Jays are arboreal in habits and prefer denser cover. The gape of the *Coraciadæ* is wide, rictal bristles in some of the species, aid them to hold, whilst on the pursuit after bees, moths, butterflies etc., the prey, which pass them on the wing. Jays are omnivorous birds.

(123) *Coracias Indica, Indian Roller*, is a familiar bird, so requires little or no introduction. It frequents more open country. Clearings of jungle land and woods, in preference to forests. It is not a little partial to the proximity of human habitations. Seen generally solitary, perched on a cow shed in Bengal villages, or bowri-poles, or the top of a tree near by. This species is 13½ inches in length; bill is large, strong and lengthened, compressed and hooked at the tip; rictal bristles are strong; wings fairly long; tail short; tarsus short. This bird displays a fair amount of blue, tinged with green on the head (above) and nape; hind-neck, scapulars and tertiaries are ashy brown with a greenish gloss; shoulders and lesser wing coverts, deep cobalt blue; greater coverts and quills pale blue, with a broad wing band of violet-blue about the middle. A few of the leading colours will suffice to make the acquaintance of the common Roller. Usually one of these birds or may be two (in spring) take up their abode in each of the villages or hamlets in Bengal. They are occasionally seen in avenues, gardens or clumps of trees; near fields under cultivation, wherever a stray insect is likely to be found. They emerge from their coin of vantage, usually a conspicuous perch, with an easy dart-like flight and capture the winged termites as they rise, in not a few instances, from off their breeding spots and holes in the ground together with grass-hoppers, crickets, mantidæ, etc. The flight of the Roller is strong and well sustained when put to the test; but usually it flies with laboured flaps of the wings. We might look for the sociability, and comparative tameness of these birds, to the care and consideration, extended to them by both Hindus and Mahamedans. Among the former, the Roller is considered sacred to Siva, for this reason these birds are purchased at bird fairs, at various centres in Bengal. One such fair is held or used to be, on the Sealdah side of Circular Road, about the latter end of August. Considerable care and attention is shown by Hindus to the birds thus acquired, usually young, for the purpose of liberating them again at Durga Puja, when images of Durga are thrown into the river. This kind act of liberation is believed to

bring its reward in due season. Nevertheless Rollers thus set free, seem loath to forsake the friendly hand that fed it, so takes up its abode near by the humble Hindu dwelling, where its friendship is encouraged, more so, as should the household find themselves in straitened circumstances, a sight of a Roller at the great Puja event, will suffice, in case of need, to insure a blessing the coming year. The Mahamedan on the other hand, attribute uncommon good fortune accompanying a sight of one of these birds on state occasions or before events of supreme importance.

FAMILY HALCYONIDÆ *(Kingfishers)*

Curiously enough we find side by side, with the *Coracias*, birds of varied fortunes of the west; of lucky and Halcyon Days. Kingfishers are very interesting group of birds. One or more species must doubtlessly be well-known to you. They are seldom seen at any great elevation in the district. Kingfishers, usually, frequent warmer valleys where fish and aquatic insects are plentiful. They are found on sand near larger rivers, oftener the Runjeet and the Teesta, usually seen flying over the surface, with their beaks, at times, pointed in a vertical position, ready to plunge head first for small fishes which come near the surface of the water; or perched on a half submerged rock beside a roaring torrent, silently looking down into the eddies or calms made by the troubled waters of a hill stream, for fish rising to the surface. These birds appear quite unconcerned at the splashing, boiling, volume of water at their feet. Bill is very long, angular, straight and pointed; gape wide; wings rounded; tail short; tarsi and toes short and feeble. A few species of these birds are fairly plentiful in the district; but the greater number of them appear to be more at home in the plains and under sweltering skies. The two species which are more frequently met with, are the tiny *Alcedo Bengalensis*, and the big *Guttata*. *Halcyon fuscus*, *Coromandelianus* and *Ceyx tridactyle* are seen only on rare occasions.

(134) ALCEDO BENGALENSIS, *Common Indian Kingfisher*, is to be found in most parts of Bengal, one might say, wherever small fishes are obtainable, whether it be rivers or tanks, ponds or fields under water. This small kingfisher frequents our big rivers in the district; but does not ascend beyond the valleys. Nevertheless it seems to appreciate wild torrents at foot of the hills, quite as much as the peaceful mill ponds in the plains. This species is $6\frac{1}{2}$ inches in length; bill of *Alcedo* is long, slender, straight and compressed; tail very short; legs and toes feeble, the latter syndactyle. Bill blackish; irides dark brown; legs (red) orange; colour of the plumage, above,

is pale blue on the back, rump and upper-tail coverts; wings and tail dull greenish-blue, the former with pale blue specks; throat white, under parts of the body ferruginous; head and hind neck feathers edged blue. This tiny kingfisher is by no means an uninteresting bird to watch or to observe its peculiarities. It is not infrequently seen sitting motionless, on the rocks, with its bill "trained" or focused on the waters below, till it spies a small fish approach the surface, when with a rapid dive, it draws out the silvery morsel. It is not often that *bengalensis* fails in its attempt to catch its prey out of the eddy its intent gaze has been on, unrelaxing. At times this kingfisher, appears to have lost patience, when it is observed flying up stream, uttering short irritable cries, keeping an eye on the surface of the water as it flies. When the fish is spotted it hovers in the air over the place kestrel-like, for a few seconds, before shooting down head first into the clear water below. This is apparently done to take a steady aim with its bill, and to wait for the desired opportunity when probably the fish is either taken unawares or caught in a handy (?) position. If unsuccessful the kingfisher, as it rises on the wing, utters a few, as though irritated, noisy cackles, as much as to say "like my cussed bad luck again," and flies on not much the worse for the ducking.

(131) HALCYON COROMANDELIANUS, *Ruddy Kingfisher*, though seldom seen, has similar habits to the former bird. It is a prettily coloured and marked species. In length 10½ inches; bill and legs red; irides brown; plumage is more or less rufous with shining peach lilac, chiefly on the head, face and quills, here and there a little white showing, and glistning pale blue; beneath ferruginous.

(133) CEYX TRIDACTYLA, *Three-Toed Purple Kingfisher*, is much smaller in size than bengalensis, being about 5½ inches in length. It is doubtlessly one of the most beautiful little kingfishers in the district, or in India as far as that goes, without taking into consideration the claims of Ruddy kingfisher. In habits, very similar to *bengalensis*. *Tridactyla* is rare and difficult to find. Bill is coral coloured; legs red; irides brown. Bill somewhat similar in shape to *Halcyon*, gonys having a more upward incline; tail very short; feet of three toes, two in front and one behind; back dark lusterous blue; upper tail-coverts including lower back, rich rufous with lilac gloss; head rufous and glossed lilac; violet and white near the ears; dark blue at base of the bill; wings deep blue; quills black; lower parts of the body ferruginous; throat white.

(137) CERYLE GUTTATA, *Large Crested Black and White Kingfisher*, is fairly common on or about the rivers here. In the plains, it is called Machi-Bagh Fish-tiger and in the hills Ung Kashyiu water-

dog, both names portray striking characteristic of *guttata*. This large black and white streaked kingfisher is frequently met with on the banks of Runjeet and Teesta, unlike *bengalensis*, it ascends over mountain streams, and is often found quite up to 5,000 feet elevation in its hunt for fish in big jhoras. One might have reasons to doubt the presence of fish at this ascent of the mountains; but *Guttata* evidently has not the slightest misgivings in the matter, as it has been successful, on several occasions, in some of the dark pools in fishing out a fair sized fish or aquatic insect or two. How fish are found at this elevation, is difficult to suggest a feasible solution to the occurrence. It is usually in the rains that *Guttata* finds its way up these hill streams, when rivers in the valleys, are rushing torrents and perilous even for large kingfishers to dive into. The specimen of *Guttata* before me, is from about 5,000 feet elevation. In length it is 14 inches; bill is short for a kingfisher; it has a fine crest of long narrow feathers, which droop down, back of the neck; colour of the plumage is black and white, fairly equally distributed, over various parts of the bird, in form of bars and spots chiefly; lower parts are white; flank and under tail coverts branded with black. This big kingfisher is not a little local in habits, it seldom leaves the Himalayas. Its place, in the plains, seems generally taken, by *Cergle rudis*, Pied Indian Kingfisher (136), a smaller bird, about 11 inches in length, black and white in colour, white patches and streaks are better defined and more prominent than in *Guttata*. Whilst hunting it flies over the surface, when of a sudden it halts, and hovers over the water as though it had spotted something, then dives perpendicularly after the fish, which is at times, brought up from a good depth below, as occasionally, the splash it has made, has moved down stream before the kingfisher emerges again. *Guttata*, like not a few of the race, as often as not, being partial to well wooded, rocky and hilly precipitous country, is seen sitting solitary on rocks or water worn-roots of trees near by hill torrents and plunges hawk-like in an oblique line, hence the name "Water-Tiger." It is not so successful as Pied Kingfisher in its dive after fish, may be, partly because it ignores small fry and goes for bigger mouth-fulls, as it has been seen to land a fair sized fish; or perhaps these aquatic dwellers in our hill streams are more lively, and on the alert than their brethren in the plains. May be the enervating climate tells on their constitutions.

FAMILY EURYLAIMIDÆ *(Broadbills)*

These beautiful birds, look like parrakeets in the distance, when among woods and green foliage; but closer observations soon dispel

these illusions of first impressions, when you catch a glimps of their graceful tails, which they spread out fan-like, as the birds let themselves drop from a hight down to the perch, after capturing an insect passing over, much above the tallest trees, which Broadbills secure on the wing; much the same way as a fly-catcher. Once you witness this graceful performance, you are soon convinced that the birds at some distance from you are no ordinary parrakeets. They remind one of the *Ampelidae* or the brightly coloured *Irenina* Blue-birds, or at times the more sedate *Coraciadae*. Bill is short, broad and depressed, margins dilated, ridge (Culmen) rounded, tip hooked; nares with a few bristles; wings shortish; tail graduated, giving it a rounded appearance; tarsus short; outer toe syndactyle. Their food like Rollers and Bee-eaters insectivorous.

(138) PSARISOMUS DALHOUSIÆ, *Yellow-throated Broadbill*. This species is found at a lower elevation than Darjeeling. In spring it ascends to near on 6,000 feet. It is a woods loving bird, and seldom comes out into more open country. It frequents as a rule, dense forests. This species keeps much in pairs, and feeds occasionally on larvae, mostly on insects, beetles, butterflies and day-moths. In size 14 inches; bill green, black on the ridge; orbitar skin yellow; plumage is a predominating bright parrot green, above, here and there yellow, blue and black; blue showing conspicuously as a wing patch; tail blue; a yellow patch behind the eyes; upper part of the neck and throat yellow; a blue patch on crown of the head; lower parts of the body bluish-green. These birds build a big egg shaped pendent nest, some 30 feet from the ground, constructed of creepers of fibrous plants, pulled of in strips and worked round outside of the nest. Within are grasses and broadish bamboo spathes. Eggs are elongated ovals, either pure glassy white, or blotched with red and pale reddish purple on a pinky tinged ground.

(139) SERILOPUS RUBROPYGIA, *Red-backed Broadbill*, is rare in the district and only occasionally met with in the interior of Sikkim and Bhutan hills. Length it is 7¼ inches; head crested; bill, bluish in colour, similarly shaped, only shallower than Yellow-throated species; colour of the plumage differs from *Dalhousiae:* above, back is olive, rest of the feathers slaty grey, excepting upper tail coverts and lower back, which are deep chesnut, also tertiaries; blue wing patch on primaries; quills and tail black, tipped white; underpart pale grey. This bird is about half the size of the former species.

FAMILY BUCEROTIDÆ *(Hornbills)*

Hornbills are large sized birds, usually found on outskirts of thick, dense-forests, not infrequently in the vacinity of big hill-streams or Jhoras. They are readily distinguished by their enormous size bills. In some of the species, the size is still further increased by a protuberance, placed at base of the culmen; tongue short and heart shaped; wings are short and rounded, tail long; tarsus short and stout; feet syndactyle and of fair size; hind toe short; claws short, thick and curved; orbiter skin naked (unfeathered); eyelids protected by eyelashes, which is an uncommon provision among birds, met with again, among most of the non-parasitic cuckoos (Taccocua.)

(140) HOMRAIUS BICORNIS, *Great Hornbill*, is monarch of this group. These birds are met with in the district usually in pairs, either on the wing, flying singly over thick forests, or perched not far from each other, on tall trees in the woods, frequently overlooking mountain torrents. I have on several occasions seen them in the vicinity of Rungdung Khola, below Mineral Springs. Their food consists chiefly of fruit, which they toss up in the air and catch again in their mouths, held open.

Tough fruits and "*pangra*" *beans*, which they are partial to, are first crushed between their enormous mandibles before swallowing. These hard stone like beans nearly 2 inches in diameter, injure the margins of the bill. Among the older birds of *bicornis*, much wear and tear of the bills are prominently shown, pieces of Tomium chipped off. Bills of the younger members, being in their natural state have regular, serrated edges; as the bird advances in years these edges get chipped and broken. The general appearance of the Hornbill suggests (Ramphastidæ) *Toucans* these latter birds, which are found in other parts of the world, show a much closer relationship to *Scansores*. Great Hornbill is 48 inches in length; bill light yellow, black at the pointed end, broad casque is red; irides deep brown. As seen on the wing it appears more black and white, should it be observed closer, seated on the hill side below you or perched on a tree, patches of yellow are more noticeable, on the wings and neck. This bright yellow colouring is usually the effects of oily substance from the gland at the base of tail-coverts, which birds in general use freely, when preening their feathers, to prevent them getting wet and letting in the rain and water. This large sized bird, and the heavy weight it carries, when flying, aided by the powerful sweeps of its primaries, produces a sound, which can be heard a mile or more off, caused by repeated strokes of its wing. Its flight is laboured, at the start or when flying low; but once it has got a

good lead and soars up aloft, it sails in a graceful and easy manner, but scarcely rivals in flight the big *Raptores* in their feats of aërial navigations. *Homraius* like its race builds, in big holes in trees, decayed portions partially hollowed out by the birds themselves, when fresh chambers are required, owing to last year's spots being either discovered or destroyed. After the female hornbill has taken her place on the eggs, the male shuts her in, by plastering the opening, just leaving a hole big enough for her to project her long beak and neck to be fed, by her devoted mate. This wall construction reminds one not a little of the way swallows build their nests of mud pellets, worked up into soft clay balls. When the young are hatched, the plastered up orifice is broken down and mother bird regains her freedom, which she much appreciates, spending, remainder of the day shampooing her body and limbs, which must be a bit stiff after the long imprisonment, before trusting herself to long flights; whilst her mate busies himself as before securing food for the party. It is not till next morning does she consent to lend a helping hand. I was never fortunate enough to be present when the breaking down operations, or removing the obstructing wall, commenced, as far as I could make out and from general enquiries, this is done mainly by the male bird. It is doubtful if the mother can liberate herself. I am told by some Lepcha Shikaries that on one or two occasions they had found a mother hornbill dead inside, caused no doubt by reckless shooting of its mate by thoughtless nimrods unacquainted with the nidification of birds and their different breeding seasons, Hodgson enlikened the loud, harsh cries of a wounded *Homraius* to the braying of a donkey, doubtlessly these vehement vociperations were greater, as it thought of its imprisioned mate, and youngsters may be.

(142) HYDROCISSA ALBIROSTRIS, *Bengal Pied Hornbill*, is also found in the district. Occasionally seen in denser parts of the forests. It is smaller in size than *Homraius*, being about 30 inches in length. Pied Hornbill seldom ascends much above a few thousand feet. Bill is long, sharp pointed, casque unlike *Homraius* is long and acute covers about $\frac{2}{3}$ of the bill. *Albirostris* has similar black and white plumage, more black noticeable on lower parts, and breast of the bird, patches of white prominently displayed above. This Hydrocissa is fairly common in Sub-Himalayan districts.

(146) ACEROS NIPALENSIS, *Rufous-necked Hornbill*, is rare and seldom met except in Sikkim, where it ascends not much over 6,000 feet elevation. Occasionally a solitary pair or two is found in the district near the Runjeet. This curious looking hornbill differs from the foregoing birds. Bill has transverse ridges and groves with chesnut spots on the sides of upper mandible; naked skin about

the face is pale velvety blue colour. In length *Aceros* is about 4 feet; male has bright rufous on the head, neck and breast; black on the back also the wings, which are tipped with white; greater part of tail white, upper part black; under parts of the body more or less chesnut.

This brings us to the end of *Fissirostres*. The next tribe *Scansores* has many typical groups. These comprise, the climbing birds, which have their toes in pairs, two in front and two behind. The *Zygodactyli* of not a few naturalists. Outer toe is turned backwards or at right angles. As might be expected these birds are arboreal in habits, most of them live exclusively on insects, some few on fruit. They build their nests in holes of trees and lay glossy white eggs, excepting *Cuculidae*. They consist of the following families:—

I.	PSITTACIDÆ	... ...	Parrots.
II.	PICIDÆ	... ...	Woodpeckers.
III.	MEGALAIMIDÆ	... ...	Barbets.
IV.	CUCULIDÆ	... ...	Cuckoos.

I. Family PSITTACIDÆ *(Parrots)*

These birds are sometimes called the monkeys of Bird-land. They comprise: I. The True Parrots, II. Parrakeets, III. Lories. Macaws and Cockatoos are not found in India, nor the first group—True Parrots.

Sub-Family PALÆORNINÆ *(Parrakeets)*

Have several representatives in Sikkim and lower elevations in the district, chiefly found in more wooded parts near big rivers.

It seems hardly necessary to dwell at any length, on these well-known birds, for field observations. They give us however a convenient introduction into this interesting tribe. The peculiarities of bill are familiar to all; it is short, thick and strong, upper mandible much curved and hooked, lower mandible having a sharp tip; tail of Parrakeets is long and wedge shaped, feathers of which

are narrow and pointed. This family comprise birds of gay plumage and endowed with superior intelligence. Green is the predominating colour. Both Alexandrine (introduced by Alexander the Great into Europe) and Rose-ringed Parrakeets are found at times in the district; but they are not so often met with as Rose-headed species.

(149) PALÆORNIS ROSA, *Rose-headed Parrakeet*, which is met with at an elevation of 3,000 to 5,000 feet usually in woods, at a close proximity to the rivers, at times higher up the hills, foraging among standing crops; Indian Corn in preference, belonging to *bustiwallah*, on slopes of the hills. This species is 14½ inches in length. Male has varieties of green, tinged with yellow on back and scapulars; bluish on lower back and upper tail-coverts; hind neck verdigris in colour; small red spots on lesser coverts; shoulders bluish also the more prominent tail feathers; under plumage yellow. Underlying these different colours is more uniform bright green; head typically pale rose, with a narrow collar of black; whereas the female has more plum-blue on the head.

SUB-FAMILY LORIINÆ *(Lorikeets)*

Are also well-known, usually, more so as caged specimens, where they become remarkably tame. They are popularly known as "Love birds," probably on account of their loveable manners and confiding traits. Big numbers of these birds are caught in Assam and sub-Himalayan jungles, and brought down to Calcutta for sale. Green is their prevailing colour when seen in their natural state of freedom, yellow and red portions of their plumage is not so readily made out, unless close at hand.

(153) LORICULUS VERNALIS, *Indian Lorikeet*, is not found in the district. Plumage is grass-green; wing coverts darker, tail and wing bluish green; red on tail coverts; under parts of the bird yellowish; a little verdigris-blue on the throat of the males. Lorikeet is 5½ inches in length. These active little birds are often seen going through a sort of trapeze exercise, when observed, among high tender twigs and branches of trees in the jungles. Their food consists of fruit and flowers, chiefly for the sweet juices present in them. Lorikeets are occasionally found hors-de-combat, lying helpless on the ground, below a tody palm or date tree, from the effects of imbibing too freely but not over wisely on fermented juice collected in the earthen pots. In this state of inebriation they become an

easy victim to dangers which stalk at noon day. The name given to this bird in Bengal is Latkan "pendent" owing to its partiality to sleeping head downwards, gripping firmly the twig, above. These birds are social and gregarious, extremely active in their wild state and fly swifty when on migratory journeys.

FAMILY PICIDÆ *(Woodpeckers)*

This is another interesting and typical family of *Scansores* or climbing birds—of arboreal habits. On several occasions I have noticed these birds being mistaken in their preserved condition for kingfishers. So unobservant an error, would never have occurred on seeing them in their wild state, amidst their natural surroundings in the forest, for two more different birds in habits, food and characteristics, it would be difficult to meet in native haunts of each. One loves the roaring, rushing torrents whilst the other prefers to have such places at a little distance: a sort of soughing and sighing echoes of the forest. Woodpeckers though not impartial to having their silvan retreats beside the cheerful murmur of the rivulets or the wilder music of many waters, they usually seek out deep shady glades of ancient oaks and other timber trees, with broken weather-beaten boles, which form choice hunting grounds for many a lurking termite, insect or larvæ. Woodpeckers are master climbers, up a perpendicular trunk of a tree, they go with ease and facility, holding on with their strong toes and claws, whilst the clock-work regularity, tapping with their long, pointed wedge like bills, never misses the smallest crevice. This merry *tok-tok, tok-tok* tapping can be distinctly heard, proceeding from the big tree above you, in the silent depth of the forest, where, perchance, you may have rested, for a brief breathing space, before proceeding on your tramp again. Should you catch sight of the tiny little Woodpecker, at its untiring labours, you will notice, that, it takes up each section of the tree in turn. Up and up it goes briskly, devotedly and vigorously at its work, as though it were propelled by some unceasing impetus, or a moral task of ridding trees of destructive enemies. As it taps, it holds tightly on, with the strong feet, nature has provided it with, in pairs, excepting the curious three toed genus *Chrysonotus* a striking analogy to *Ceyx tridactyla*, the Three-toed Purple Kingfisher. Tail of Woodpeckers, you will notice is fairly rigid, with elasticity, feathers are frayed at the ends. The last vertebra disklike; and compressed in shape, candal vertebræ is moveable. The Woodpecker makes good use of its tail, which is a

useful and indispensable appendage, as a fulcrum, when proceeding up a tree, among the many uses tails can be put to according to the various habits and characteristics of birds in general. The predominating colours of these birds must be looked for in the forest. You have, here, all the colours and tints of the woods from the bright emerald green of the leaves more or less in most of the species, to burnt umber colour and ashy grey, not infrequently met with of the trunks of trees or black and white of the bark wood. The male Woodpecker usually bright red on the head and a black cheek stripe. How frequently have we heard or read about this apparent defect in nature, which makes these birds, an admirable mark for (unsporting) sportsmen. This may be all well enough when judging from specimens crowded together in a glass case; but how often have we mistaken this silent, fiery crest, which becomes motionless at our approach, for a bright flowering parasite. Turning once more to the Kingfisher, which had intruded, unceremoniously, into our remarks, it has a short tongue, how different to the long flexible tongue of the Woodpecker, which is still further aided in its reach, by the riband-like muscles wound round the trachea, and the sliding shuttle, os hyoides, thus it has every facility of thrusting its tongue into deep fissures and holes of trees, the tip is brush-like, composed of pointed barbs, which the Woodpecker inserts into small openings its beak has forced an entrance into, and draws out the imprisoned insects it has surprised. This operation is further simplified by a little glutton adhering to the tip of its tongue. The bill is longish, straight, conic and wedge-shaped, sides or edges angular, the tip truncated in most of the species, wings are broad and strong 4th and 5th quills usually the longest. Tail wedge-shaped, shafts strong and elastic. This big family—the Woodpeckers, have many groups divided into sub-families, differing much in size, colour, form of bill etc. Nearly all of them have representatives in our hill forests at various elevations, but in habits and peculiarities they differ but little. Woodpeckers make their way up a tree with great facility pressing their tails against the bark. They are unable to come down head first as do the nuthatches, but fly obliquely to a lower part of the tree and recommence their hunt over ground not already gone over.

GENUS PICUS

Birds of black plumage, above, spotted or striped white, streaked below most of these birds are rare and difficult to find in the district. The following species have been more frequently observed:—

(160) PICUS MAHRATTENSIS, *Yellow-fronted Woodpecker*, seldom ascend much beyond 4,000 feet elevation. It appears to prefer tall

scrub jungle skirting the Chota Runjeet, one would scarcely fail to meet a few there usually hunting a little distance from each other, also in some of the orange groves in Sikkim. It seem to keep much to thinly wooded country. It is 7½ inches in length; bill plumbeous; irides crimson; upper plumage is black with white stripes and bands; head yellow; the neck (side) stripe, brown; white about sides of the head, neck and breast; breast and lower parts brown, crimson towards the tail; top of the head, of male bright crimson; female yellow. This bird is commonly known as Mahratta Woodpecker, after the country in which, it was first discovered.

GENUS YUNGIPICUS. These are birds of small size, spotted and marked with white above; wings long; tail centre feathers lengthened, outer ones soft and rounded.

(163) YUNGIPICUS PYGMÆUS, *Himalayan Pigmy Woodpecker.*

(162) YUNGIPICUS RUBRICATUS, *Darjeeling Pigmy Woodpecker*, this bird is more likely to be seen in forests near Darjeeling than *pygmæus* (163) though neither of these species are common. *Rubricatus* in winter, seems to be more at home near rivers Big and Little Runjeet, more so than forests near the Teesta. *Pygmæus* on the other hand keeps much to higher altitudes. The latter species (162) is 5½ inches long; colour, is more or less black, spotted and branded with white; plumage, above, is black with cross lines; rows of white spots on the wings; upper tail-coverts black; also tail, with white here and there; lower parts of body brownish—white with dark stripes. The male has crimson on the head (Occiput). These two species have been found only in the Himalayas (Nepal and Sikkim).

(173) CHRYSPHOLEGMA FLAVINUCHA, *Large Yellow-naped Woodpecker*, is another species one is more likely to see in the woods near Darjeeling as it is fairly plentiful in the forests. It is 14 inches in length, and has a longish crest, which is conspicuously marked with yellow; most of the plumage, above, is yellowish green; back of the neck glossy yellow; about the sides of the head and throat light yellow; foreneck dull green varied with white spots; breast greenish; lower parts of the body grey; some of the primaries bright chesnut, others green, tips dark brown; wings light coloured, with black bars; tail black; bill bluish; irides red; orbitar skin light green.

SUB-FAMILY PICUMNINÆ *(Piculets)*

These are the small members of the family we have been considering. Piculets have some appreciable difference in structure and habits; more prominent of which, we find the bill, it is short and conical in shape; tail of short soft feathers. These birds grade into, and remind us not a little of Yungipicus, Pigmy Woodpeckers, we made the acquaintance of when considering (162 and 163) nevertheless there is a marked difference in their general structure and anatomy. Their similarly formed tongues chiefly, and other minor advantages, and habits generally gives them a safe place among *piculæ*. Both species of Picumninæ are to be found in Darjeeling and at a lower elevation in the district. Piculets appear to be much tamer than Woodpeckers, for so I have found them, when met with in low scrub jungle or on bushes by side of the road leading to the house, for instance, as you stand and watch them, they stop in their diligent search for insects, to look up, in a confiding manner, more so, I take it, at one sympathetically observing them on the bushes below, for they hunt usually near the ground.

(187) SASIA OCHRACEA, *Rufous Piculet*, is often seen in Darjeeling on trunks of trees and bushes, in early spring. It can easily be made out by its ochreous colour, with a reddish tinge, above, and more yellow beneath. In length it is 3¾ inches; greenish on the head and wings; a white streak behind the eyes; tail black; prominently showing plumbeous coloured conical bill, cannot be mistaken; irides are pale brown. Speckled species is rarer and prefers a lower altitude, where it is more likely to be seen, at about 5,000 feet elevation; in a somewhat similar position as Rufous species.

(186) VIVIA INNOMINATA, *Speckled Piculet*, I fear that I have proverbially speaking, placed cart before the horse in giving the second place to this pretty Piculet; but it appears at times more advisable to introduce the commoner species first, after making its acquaintance, the more elaborately dressed P culet can be the easier distinguished. *Innominata* is a shade bigger than *Sasia* being about 4 inches in length. Bill is smaller and more compressed; tip slightly blunted on upper mandible; rictus bristled; wings longish and rounded; it has a soft flexible tail which is never used as a fulcrum in this sub-family; claws sharp, curved, strong and large. When seen, its prominently or typically marked, breast and under parts are most striking which are white, with conspicuous black half moons (ocellated in shape) and below cross-barred; forehead of the male is chesnut, dark green on the female; above, it is dusky-brown in colour; tail black with patches of white; yellowish tinge is conspicuous above, on the head, neck, back and partially on

the wings. This pretty Piculet is just as interesting to watch as the Rufous species, though it may not appear quite so tame. It is easier discovered in the out-skirts of forests which it is more partial to than when within thick undergrowth. It is often seen, hunting for insects, wren-like, among fallen logs, moss grown and decaying wood, or where cattle, of hill gowalas' bathans, are won't to graze.

SUB-FAMILY YUNGINÆ *(Wrynecks)*

Are fairly plentiful in the plains, they may be seen, usually, where insects abound, hunting for them on land, perhaps more frequently near ant-hills. The bill is short, conical, and with a rounded appearance; wings pointed; tail broad and flexible; tarsus short; toes in pairs; tongue like Woodpeckers long and extensile, sharp and pointed; plumage soft.

(188) YUNX TORQUILLA, *Common Wryneck*, is somber in colour, but beautifully speckled. I cannot do better than quote the following lines from Blyth about this peculiar little bird: "Instinctively trusting to the close resemblance of its tints to the situation on which it alights, it will lie close, and sometimes even suffer itself to be taken by the hand: on such occasions, it will twirl its neck in the most extraordinary manner, rolling the eyes and erecting the feathers of the crown and throat, occasionally raising its tail, and performing the most ludicrous movements; then taking advantage of the surprise of the spectator, it will suddenly dart off like an arrow," such is our Indian Wryneck, and it would be difficult to find a more accurate description of this bird. It rarely climbs on trees like Woodpeckers. It feeds on the ground, on ant-hills preferably. Very little difficulty need be experienced in making its acquaintance, more so on account of the peculiar habit it has of turning and twisting its head backwards and looking over its shoulders, as it were, or rather back. The Wryneck is $7\frac{1}{2}$ inches in length; with crimson irides; upper plumage is grey, prettily speckled; breast and below dull yellowish white with narrow cross-lines followed by triangular black spots; quills barred deep brown and isabella; tail speckled grey; dark brown stripes on hind neck. These few markings together with its peculiar habits will suffice to recognise the common Wryneck.

FAMILY MEGALAIMIDÆ *(Barbets)*

This is a common and well-known family of birds in India, so that it will need but little in the way of introduction, more so, as one species the "Copper Smith" as it is commonly called, must have already, unceremoniously introduced itself in the plains. These birds are readily recognised partly by their prevailing leaf green colour, which predominates in most of the species, and also by their general habits and characteristics. Some species of this family have at times, been mistaken for Woodpeckers, by more casual observers. Their anatomy generally, and shape of bill brings them near the Toucans of South America, more so, the Great Himalayan Barbet. Barbets as a family have the bill stout, slightly conical in shape, tip compressed and sides inflated. They are furnished with stiff projecting bristles; wings and tail short; toes in pairs, hind claws curved. Barbets are bright plumage birds, where leaf green predominates over patches of red, yellow and blue, as the case might be. They are lively and active in their habits, in the hills more so, than the species found in the plains and live much on fruit and berries, insects occasionally.

(191) MEGALAIMA VIRENS, *Great Himalayan Barbet*, is often met with in wooded parts of the station, more especially Ghoom forest. It usually keeps to the higher branches of trees and is a good strong perching bird, which is more noticeable from the well padded and furrowed appearance of under part of the toes, produced by habitually and firmly gripping the branch it has settled on, leaving a hollowed out impression in soles of the feet. This Barbet is fairly common from 6,000 to 8,000 feet elevation and makes occasional visits to Darjeeling (on Birch hill they are more frequently seen) in spring or during the rainy season; at which time it is seen on topmost branches of the tallest trees. They are usually in pairs, and when they rise for another long flight to some dense forest glade, they utter harsh call-like sounds. How different this cry is from their loud far reaching wail from some forest depth, not unlike *pi-o, pi-o, pi-o*, so often heard proceeding from the outskirts of Darjeeling. There is a romantic story associated with this bird among hill people, but to appreciate it, you must hear it in Nepalese. *Virens* is 13 inches in length; leaf green colour predominating, head nape and neck are dusky violet-blue, coppery-brown on the back, scapulars and lesser wing coverts; primaries dull blue, the remaining quills are yellowish; tail light silky bluish-green; breast brown, below bluish green, pale yellow on the sides, blotched with brown; under tail coverts crimson, similar to most of the Toucans. *Virens* lives chiefly on fruit. The next two Barbets which are likely to be met with in the district are *Asiatica* (195) and *Franklinii* (196).

(195) CYANOPS ASIATICA, *Blue-throated Barbet*, is rarely seen over 3,000 to 4,000 feet elevation. It has a peculiar, noisy call, not unlike *kuruwàk, kuruwàk, kuruwàk*. In length it is 9½ inches; plumage is green, above, with coppery gloss on the back; crimson on the top of the head; cheeks, throat, and foreneck blue. This species is commonly called in the plains "Bussunt Bairi" old woman of the spring, rather unpoetic name.

(196) CYANOPS FRANKLINII, *Golden-throated Barbet*, is more familiar in Darjeeling than other Barbets. I have seen it on several occasions in Birch Hill forest in spring and during the rains. It is easily recognised by the prominent patch of golden yellow on the throat. This Barbet is 9 inches in length; above it is bright green; beneath tinged with yellow; deep blue on the shoulders, some blue on the primaries, secondaries green; crimson on the head; crown and throat bright glistening orange-yellow. The presence of this Barbet is known, by the fairly loud and cheerful cry of *kattak-kattak-kattak*, proceeding from the trees, a short distance from the house, it may be.

(197) XANTHOLÆMA INDICA, *Crimson-breasted Barbet*, most of us must doubtless be on the best of terms with the bird going under the name of "Copper Smith," whose alluring lullabies have broken somewhat harshly midday siestas, for which accomplishment this *Xantholæma* has acquired an unenviable reputation, by its persistant and remarkably loud *took-took-took*, nodding its head at each call from side to side. The sound resembles an Indian copper-smith at work. *Xantholæma* is 6½ inches in length. In the plains it is called *Tamháyat* (cŏpper-smith). A note by Sundevall would I feel sure be interesting whilst considering the merits of this species, "that it is like a rather low note on the flute from the lower G to the second E. The sound often appears to come from a different direction to that, from which it does really proceed; and this appears to me to depend on the direction of the bird's head when uttering the call, the same individual always utters the same note, but that two are seldom heard to make it exactly alike. When, therefore, two or more birds are sitting near each other a not unpleasant music arises from the alteration of the notes, each sounding like the tone of a series of bells"!

FAMILY CUCULIDÆ *(Cuckoos)*

In Darjeeling no introduction is required to *Cuculus Canorus* at least, which is never at a loss to make itself heard, for its pretty *co-coo* is a true harbenger of spring. Those who have seen this light grey pigeon-like, in shape, bird, must have observed its whitish breast with black horizontal lines, also the long, broad racket-tail. This peculiarity of tail, is found, more or less prominent in all the true cuckoos, together with lines on the breast, in most of the species. Members of this family excepting Malkohas, Coucals and Sirkeers lay in other birds' nests. The reason for this lack of appreciation for its eggs appear difficult to account for. It is suggested by some, that parasitic cuckoos lack both the constructive faculty and love for home life. Be that as it may, and with due deference to both cuckoo and its critics, a few suggestions may not seem unreasonable. Food of these Cuckoo, *Canorus* more so perhaps, is chiefly composed of small hairy green caterpillars. Long lines of, one species of these particular insects are seen crawling—follow the leader style, which wander, as if, aimlessly across our paths and hill roads, and up tall ever-green trees, before the Cuckoo has arrived in Darjeeling. This we might take it, is the Commissariat, which is in advance. Such small mouthfuls as these caterpillars represent would require constant feeding for the Cuckoo and general activity, when not giving us a song. Eggs of Cuckoos are small in comparison to size of the bird. From details collected, it has been noticed that the Cuckoo lays from 3 to 4 eggs at each season, May and a second batch at times, the latter end of August. By observations of a *Canorus*, which takes up its abode near the house, it has been fairly accurately ascertained, that it deposits its eggs, usually in Dark-grey Bush-Chats' nests, and that an interval of 8 to 10 days elapsed between each lay, so that it would be impossible for the mother or pair of them put together, for the matter of that, to hatch the eggs, all would be addled or chilled with exception of the last one laid, and this one would stand a poor chance, being turned and twisted about among three or even two cold bad eggs.

GENUS CUCULUS

Has a smallish bill; broader at the base, compressed and gently curved, tip notched; wings long and pointed, 3rd quill the longest; tail longish and rounded; tarsus short with protecting scutæ in front; feet short and slender.

(200) CUCULUS HIMALAYANUS. *Himalayan Cuckoo*, is generally among the first to visit Darjeeling in early spring. As a rule, it is solitary in its habits, like all Cuckoos more or less, and seeks out a tall bushy tree, not infrequently a cryptomeria. It sits in its cool,

shady, bower, calling throughout the warm sunny days, its not unmelodeous song of four notes, a sort of *hut-tut, tut-tut* or perhaps *hoo-hoo, hoo-ho,* would better describe the sound, not unlike the *coo* of a dove, for which it is sometimes mistaken. This bird is about 12 inches in length, more dove-like in build than most of the *Cuculinæ*. It has a faint greenish gloss on the back and close narrow bars of black on lower parts of the body; tail grey with biggish white spots. Amongst the last perhaps to arrive, in those alluring spring days in Darjeeling is

(201) CUCULUS POLIOCEPHALUS, *Small Cuckoo,* its call is cheerful and unique. A sort of rapid *Quick-quick-quick-quick,* commencing long before dawn. Occasionally at midnight, when aroused from a comparatively light, wakeful dose, by a sudden gust of wind or the discovery of approach of Forest Eagle-Owl, *Huhua* (71) or one or other of the marauders of sleepy little birds. In size *Poliocephalus* is about 10 inches in length. It is a longish bird with elegently shaped body, and racket-tail conspicuous, similar to other Cuckoos. *Poliocephalus* has the peculiarity of presenting two different types of colouring or markings, which offer the puzzling appearance of being another bird or two different species, in fact, so much so, that not a few of our naturalists in India have given this second type another name. Usually this bird looks like a smaller edition of *Canorus.* The next is quite different, it has a fine rufous-bay colour spotted and elegently barred with dark chesnut, and could be mistaken from a distance, by a hurried glimpse for a Bar-tailed Tree-dove excepting of course the prominent difference of tail of these two birds. This type of *Poliocephalus* is uncommon in this district; possibly more plentiful in Sylhet. Both these types are identical in measurements, in their anatomy, song and habits the same; in nidification usually the same. This Cuckoo deposits its eggs in the nest of *Horornis fulviventris* (523) Fulvous-bellied Hill-Warbler, which has smaller, but similarly coloured eggs only much darker chocolate, whilst *Poliocephalus'* egg is a light reddish brick colour, elongated oval in shape. Now and then, on rare occasions a spotlessly white glossy egg laid by one or other types of this species is discovered. At one time I was inclined to believe that this white egg belonged to the rarer rufous-bay coloured bird, but on carefully noting the egg, an ordinarilly marked *Poliocephalus* was hatched. Later on I satisfied myself that the light reddish brick coloured eggs were the usual type of eggs belonging to both varieties I might say, of *Poliocephalus.*

(203) CUCULUS MICROPTERUS, *Indian Cuckoo,* prefers a lower elevation than this. Its warning voice is frequently heard proceeding from some jungle, containing a few tall trees, in the gorges below Darjeeling. *Micropterus* as a rule seems to prefer dense

forests. I have heard it, from early dawn, continued throughout the day, in Ghoompahar range, more frequently perhaps at Manibhunjin the thick forest on Nepal frontier where the spur dips down to the Little Runjeet Valley. It seems incessent in its advice to planters in the "dumps" to "make more pekoe"; or hill cultivators and crofters to "put down seed" in Nepali of course; or "Bhuta Kato" to more prosperous Lepchas to cut down their crops of Indian corn.

GENUS HIEROCOCCYX *(Hawk-Cuckoos)*

These birds are more hawk-like in appearance, stouter and heavier in build, and feed on fruit, chiefly on Caterpillars.

(205) HIEROCOCCYX VARIUS, *Common Hawk-Cuckoo*, commonly called "Brain-fever bird" is, plentiful in the plains where its crescendo notes are heard to advantage. (?) In spring its song is loud and shrill not unlike *pepecha! pepecha!! pepecha!!!* going up the scale a higher note each time or perhaps more correctly *whi-whecha*, Sundervall remarks: "that each word is pronounced about twice nearly in this manner, in the musical scale C. B. B. A.—A. C. C. B.—B. D. D. C.,—and it thus mounts the scale of notes at every second cry, three or four times, till the note is as high as the bird can raise it, when it makes a short pause and begins anew." In Bengal *varius* goes under the name of *kok-gallo* or *choke-gallo*. A romantic story is connected with this Cuckoo. The mother of a little Hindu bride, sent her old nurse, to visit the daughter. When she was admitted into her presence, she was asked how she was faring. According to the custom and requirements of young brides, she could not speak, but her eyes filled with tears. The nurse went home to the mother and all she could say was, "*chok-gallo, chok-gallo, chok-gallo*" = (her) "eyes are gone" literally speaking—melted away.

(207) HIEROCOCCYX SPARVERIOIDES, *Large Hawk-Cuckoo*, is frequently seen in spring in Darjeeling. Its call is much like *varius* and looks like a big *Striatus* being about 15 inches in length. Both its hill names Nimbinpyeul and Mipiu are fair representations of its song.

(208) POLYPHASIA NIGRA, *Indian Plaintive Cuckoo*, is often heard at about 6,000 feet elevation, where it keeps up a "wandering voice" call with remarkable Ventriloquistic effect, caused partly by holding its head in different direction, and throws out its *whi-whew, whi-whew*, or perhaps more like *ee-veeru, ee-veeru*, all over the hill side and jungle. It is with difficulty one can find its whereabouts. Closer you get to the bird the further away seems to get the voice. *Nigra* is 9 inches in length; colour of the plumage varies a good deal, usually, dusky grey above, with a green gloss; under tail-coverts pure white; quills dark with a white band; tail feathers

black with white bands and tips; the remaining underpart are light ashy in colour.

(210) SURNICULUS DICRUROIDES, *Drongo or Fork-tailed Cuckoo*, is rare and only occasionally met with in Darjeeling. It is Drongo-like in appearance, and habits not a little. Plumage is black, with a bluish green gloss; some white on its wings and tail-coverts. Its call has the metallic Dicrurus sound.

(211) CHRYSOCOCCYX HODGSONI, *Emerald Cuckoo*. This is a beautiful little cuckoo, clothed, above in brilliant emerald-green with a rich golden gloss; beneath cross-barred with shining green. It is about 6½ inches in length. It arrives in Darjeeling early in spring, just when the trees have adorned their emerald-green attire. So that *Chrysococcyx* is scarcely distinguishable from the foliage, as it sits peacefully in a secluded corner of one or other of the tall bushy trees about the place. Its clear musical whistle is about three notes uttered, alone betrays its presence.

(214) EUDYNAMYS ORIENTALIS, *Indian Koel*, is found in the plains, where its clear melodious voice is heard in hot balmy days in early spring. As the sweltering heat of summer advances, its call becomes more noisy and persistant, "*kuil, kuil*," not unlike its name. This species is 17½ inches in length; male is glossy greenish black; female more dusky-greenish with white spots, above, bands of white on the tail and wings; beneath white, spotted and streaked with black.

SUB-FAMILY PHÆNICOPHAINÆ *(Malkohas)*

GENUS ZANCLOSTOMUS

Bill, compressed and well curved; wings short and rounded, 4th, 5th and 6th quills the longest; tail long and graduated; tarsus longish; hind toe short; claws curved and sharp.

(215) ZANCLOSTOMUS, TRISTIS, *Large Green-billed Malkoha*, is in appearance not unlike a smallish pheasant, about 23 inches in length; plumage is dark, greenish grey; wings and tail glossy dark green, the latter feathers tipped white; bill light green; crimson papillose skin round the eyes, surrounded by longish hair-like, bristly feather shafts. *Malkohas* have bright coloured bills and conspicuously marked bare skin round the orbits, blue, green, and crimson, as the case

may be, which give them fairly easy distinguishing marks, no difficulty need be experienced in making the acquaintance of these birds, although when observed they usually run soon to shelter among bamboo clumps or bush-jungle near by where they frequent. They lead a solitary existance and care little for intruders into their seclusion. Their food is chiefly the larger insects; grasshoppers, mantides, caterpillers and at times fruit, when procurable on the ground.

SUB-FAMILY CENTROPODINÆ *(Concals)*

GENUS CENTROPUS

Birds, with rough spinous plumage; they might be called the hedgehogs amongst birds. Bill is strong, well curved and high at the base; wings rounded; tail long, broad and graduated; tarsus long; feet large; hind toe and claw long.

(217) CENTROPUS RUFIPENNIS, *Common Concal*, or "Crow-pheasant" as it is called, is a bird of similar habits to Malkohas. It is common in the plains, and can be seen in most parts of India. In general appearance it is pheasant-like; typically its hind claw is long and dagger shaped; tail long, broad and graduated. It is partial to waste lands and unfrequented places, at times found feeding on cultivated ground; short bushy and scrub jungle. Not infrequently in gorges, nullahs and in particular, perhaps, hedge rows, for which reason it is called in some parts of India the "Hedge Crow." Concal has the peculiar accomplishment, it has acquired of raising its large tail over its back, squirrel-like, which strikes one as a hint to its would be captors, a sort of "here's my tail try a little salt!" Concal can without much difficulty be run down by a horseman, in the open, as its flight is heavy and lacks the natural intelligence of most birds. We are told that Mahomedans and some of the Hindus consider this bird a delicacy—roasted. Its cry is a sort of *hoop, hoop, hoop.*

With this species we will dismiss *Scansores* and pass on to the next tribe, a typical group of, as a rule, rich and beautifully coloured birds, with usually, long slender, bills, not infrequently curved. These birds feed much on pollen and nectar from flowers; a few of the families on insects and berries.

TRIBE TENUIROSTRES.

Are composed of the following families, divided into two types :—

A. Richly coloured	... Honey-suckers etc.
B. Not so richly coloured	... The Creepers and Hoopoes.

FAMILY NECTARINIDÆ *(Honey-suckers)*

Or Sun-birds, as they are sometimes called, represent in India the group known as Humming birds of America, most of the Indian species rival in beauty and elegance of form, the famous trans-atlantic birds. The metallic brilliancy and splendour of the various colours of the male Honey-sucker can scarce but arrest your attention. These birds either hover lightly over a flower to draw the nectar, which lies concealed within the cup or deftly capture an insect on the wing. Whilst at work they lack the busy hum produced by their fair American cousins, nevertheless they chatter and complain in quite as pleasant a manner as any of the small birds.

(223) ARACHNOTHERA MAGNA, *Large Spider-Hunter*, which heads the list of *Tenuirostres*, has not the rich metallic colours of the male Honey-suckers, nevertheless it has a prettily marked coat. This species is 8 inches in length; colour of the plumage is greenish yellow, streaked with black, which gives it a dainty attractive appearance. Bill is long, slightly curved; tail short. It is a pretty sight to see this natty little bird picking off insects from the flowers in the warmer valleys and hill sides, below 3,000 feet elevation. Frequently I have seen them hanging on to big plantain flowers, probing its scimitar like bill between the folds for lurking insects, spiders it seems to be "dead nuts" on. Large Spider-Hunter appears quite a giant beside its brethren, the Honey-suckers, which are on an average about 5 inches in length. Its predominating size, generally strikes one, when these birds are found feeding in mixed groups of small birds. You see it hovering about the leaves or perched on a twig just resting awhile, before another excursion among the bright flowers. Most of the members of this tribe are active and bustling. Once fairly on the move it is difficult to follow the movements of the Spider-Hunter when bent on business, for it seldom seems to rest till it has searched every flower.

GENUS ÆTHOPYGA

These are small sized birds; bill long and curved; tail graduated, elongated central feathers. One might call them the typical genus

of the sun-birds. Their plumage is rich and varied with bright metallic gloss. You must have frequently noticed these little birds, hardly bigger than a butterfly, in gardens, and where a few flowers adorn the place, more so in spring. It hovers with the gentlest, tread, driving its long tubular bill in scented Honey-suckles and Wall-flowers with grace and elegance or goes head first into large Rhododendron flowers, scarcely bending the pendent branches, the blossoms are attached to. At times these interesting little birds find, the brushing away of thick pollen too much for their delicate eyes, so they pierce, with their long beaks the flower cups, just where the honey can be tapped, and suck out the juice with impunity. These little pollen distributers seem to select or discard for the day one particular genus or family of plants to draw out the the nectar, with the discrimination of connoisseurs. A few of the following species, have representatives in the district:—

(225) ÆTHOPYGA MILES, *Himalayan Red Honey-sucker*, or Yellow-backed Honey-sucker as it is sometimes called. This beautiful little Sun-Bird is fairly common in spring in our gardens, and more so when the Goorbeach (as Lepchas call this tree) is in flower. These long tail-like clusters of flowers well stocked with perfume and honey attract numbers of little birds, also when the gorgeous looking Red Rhododendrons are in bloom. It arrives in early spring and leaves again about end of July. They breed in more wooded parts of the district between 6,000 and 7,000 feet elevation. Their nests are difficult to find as they are artfully hidden away among dense foliage. Suspended to a twig, a flask shaped construction of moss, well interwoven, and plastered without with cob-webs; inside is neatly lined with soft silky fibres, usually collected from orchid seed pods, or other flowering parasites. This little pear-shaped abode is entered, from the side, eggs are small, oval in shape, white in colour finely streaked and speckled at the large end. This bird can be made out by its dark sanguineous colour, on lesser wing-coverts, back and about the head; upper tail coverts dark green; rump bright yellow; wings brownish green; breast brilliant scarlet-carmine; under parts of the body brownish green. *Miles* is 6 inches in length.

(226) ÆTHOPYGA VIGORSII, *Violet-eared Red Honey-sucker*. Though a rarer bird up here than *Miles*, it is occasionally seen flitting about the flowers. It appears to have a greater amount of metallic green. It has scarlet on the throat, neck and breast; shoulders and scapulars are sanguineous; bright yellow on the lower back, forms a bigger patch than *Miles* has. The shining violet feathers are not easily observed, as Honey-suckers are restless little birds. It has violet

about the ear-coverts also a line of these feathers from chin to the breast. Vigcrsii is 5 inches in length.

(227) ÆTHOPYGA GOULDIÆ, *Purple-tailed Honey-sucker*, is a much rarer species than either of the proceeding ones. It appears more at home below 6,000 feet elevation. Where it is occasionally seen. It seems to prefer denser cover, not infrequently beside a running stream. This bird is usually made out by its deep crimson lesser wing coverts, rich and glossy; violet on crown of the head, throat and shoulders; deep crimson back and scapulars; bright yellow breast, abdomen tinted with scarlet.

(228) ÆTHOPYGA IGNICAUDA, *Fire-tailed Red Honey-sucker*. This pretty Sun-Bird visits Darjeeling in spring. They are frequently met with in flower-gardens. It is bigger than the proceeding species being 7 inches in length. Its scarlet upper-tail coverts, about the head and middle tail feathers turning to crimson, soon attracts attention; head violet, back of the neck and back rich scarlet; under parts bright yellow, under tail coverts greenish.

(229) ÆTHOPYGA NIPALENSIS, *Maroon-backed Honey-sucker*, might be called the common Sun-Bird in Darjeeling. It arrives early in spring. It is distinguished by its bright yellow breast tinged with flame-colour; neck and back dark maroon-red, rump bright yellow; brilliant steel-green on the head and upper tail-coverts; some olive about the wings.

(231) ÆTHOPYGA SATURATA, *Black-breasted Honey-sucker*, is a much darker coloured bird, nevertheless quite as elegant and pretty as any of the species. Its prominent and typical glossy black breast, and more sombre attire, relieves the dazzling luster and beauty of its congenors when met with amongst a mixed group. It remains in Darjeeling during the cold weather and has been found in spring up to 9,000 feet elevation.

It will doubtlessly be noticed that only males of the Honey-suckers have been described. Females are sombre coloured, the species are not so readily distinguished from each other in their wild state, though they are easily made out from other birds.

SUB-FAMILY DICÆINÆ *(Flowerpeckers)*

Are small sized birds, different in structure and characteristics, nevertheless there is a similarity between them and the previous group. Here you have a decided change in shape of bill, which is short. These birds feed freely on pollen and insects.

GENUS DICÆUM

Have short compressed bills, broad at the base, longish wings; tail short. None of these birds, which are commonly known as soft-billed flowerpeckers, are either plentiful or readily met with in Darjeeling or the district. Most of them are seen on rare occasions.

(241) MYZANTHE IGNIPECTUS, *Fire-breasted Flowerpecker*, though fairly common in Sikkim, is rarely seen in Darjeeling. It prefers an elevation of from 5,000 to 6,000 feet. *Myzanthe* is 3½ inches in length. It is usually made out by the vermilion patch on the breast; above, black glossed with purple and green; quills blackish; under parts buff. These Flowerpeckers are not nearly so common or friendly as their hard-billed brethren say (623—633); these are birds of smallish size, about 3 to 4 inches in length, which are plentiful and social in Darjeeling. Care must be taken, in the field, not to mistake such birds as Minla (618) or *Flammiceps*, Flame-fronted Flowerpecker (633) for *Myzanthe* as I have occasionally seen done, or one or other of *Phylloscopinæ* for soft-billed Flowerpeckers; when viewing birds in their wild state. However when we come to Hard-billed Flowerpeckers, we will find ourselves, doubtlessly more at home among old friends in Darjeeling, possessing a personality quite their own.

FAMILY CERTHIADÆ *(Creepers)*

These birds form the second group, we found *Tenuirostres* composed of. They are represented by two types (i) *Certhinæ*, True Creepers, (ii) *Sittinæ*, Nuthatches.

(i) SUB-FAMILY CERTHINÆ *(True Creepers)*

So called on account of their peculiar mode of living and habits generally. Birds of typical structure, they compose, also link up a big and varied class, of birds, with more or less Tenuirostral tendencies. They are of small size 5 to 6 inches in length. Bill acute and compressed, generally long; feet large, with hind toe and claw large; plumage sombre, having a mottled appearance, which aids these birds not a little in their vocation of creeping up a perpendicular wall or tree, making them less liable to detection from would be enemies. Very few of the tree- or wall-creepers are met with in Darjeeling itself. In the district they are frequently seen either at an elevation above Darjeeling or below according to the distribution of each particular species.

(244) CERTHIA NIPALENSIS, *Nepal Tree-creeper*, is found usually over 9,000 feet elevation. It is 5½ inches in length; plumage is rufous-brown, with whitish spots and streaks, more prominent on the head; upper tail coverts ferruginous; quills brown with a light wing-bar; tail light chesnut, feathers pointed; breast white tinged brown on the sides; lower tail coverts and flanks ferruginous.

(245) CERTHIA DISCOLOR, *Sikkim Tree-creeper*, is found about 4,000 feet, occasionally it visits Darjeeling in the rains. In length it is 6 inches; colour brownish chesnut, above, spotted with white; lower back (rump) and tail-coverts are ferruginous; tail feathers, pointed, light brown in colour. This bird is more frequently seen in the outskirts of Darjeeling. Like most of the True-Creepers it is wren-like in habits, but more active than nuthatches when hunting for insects on trees. *Nipalensis* (244) is usually found on high altitudes, on the Singalillas, and in Sikkim. It is smaller in size than *discolor*, and distinguished from it, by well defined spots of white on the head; deep ferruginous on lower-back and tail-coverts; under parts white.

(247) TICHODROMA MURARIA, *Red-winged Wall-creeper*, which we might consider the most interesting and beautiful of *Certhinæ*. Its bill is very long, slender and a little curved, having a cylindrical appearance; wings long (typical of this group), 4th and 5th quills the longest; tail soft and short; toes long and thin; hind toe very long. Lepchas call this bird Lamdong-pho. It is often met with, hunting, precipitous rocky sides of our jhoras (water-courses), for insects, a good deal lower than Darjeeling. Some time ago, I saw a number, on the "Singtam slip" (land-slip). It was a pretty sight to watch these birds, busy at work. Their light cinereous-grey bodies, with wings and wing-coverts carmine and red, flashed in the sunlight. It is not often, one meets birds spread out in a perpendicular position to where you are observing them, fluttering their dainty little wings in the bright sunshine, like so many big butterflies. This bird is much bigger than the ordinary run of tree- and wall-creeper, it is about 7 inches in length.

(ii) SUB-FAMILY SITTINÆ *(Nuthatches)*

Though closely connected with the creepers, they differ a good deal from them. Bill is fairly long, straight, stout and compressed at the tip; rictal bristles strong; wings pointed 1st primary less

than half the length of the 2nd; tail in most of the species, short and square. One species at least is fairly common in Darjeeling. The nuthatch climbs with ease. It works up the side of a tree with great facility, after the manner of woodpeckers, only with greater agility and can come down again head-first when disposed to do so, an accomplishment *Picidæ* never acquire. This development of enforced climbing has given the nuthatch a well developed hind toe and inner front toe dwarfed. They feed chiefly on insects, occasionally a berry or two. In size they are small about 5½ inches in length. Compared with Woodpeckers, they apparently have a closer affinity to *Yungipicus* pigmy Woodpeckers. Nuthatches get their name from the partiality British species show for nuts, which they store up for a rainy day. Out in India and, may be more so, in the Himalayas these birds are not so thrifty. Doubtlessly too much familiarity with insects, has bred a contempt for storing, as for nuts, they seem to have discarded altogether such luxuries. Like *Picidæ* they seem to have fallen back on insectivorous diet.

(248) SITTA HIMALAYENSIS, *White-tailed Nuthatch*, may now and then be seen in spring, in thickly wooded parts of Darjeeling; but like angel's visits, it is becoming, each year rarer, owing to the ruthless cutting down of fine picturesque timber trees. *Himalayensis* though much like in colour and habits to other species, has a biggish white patch on the tail; two central rectrices, the remaining tail-feathers whitish tipped. *Himalayensis* is about 4½ inches in length.

(251) SITTA CINNAMOMEOVENTRIS, *Cinnamon-bellied Nuthatch*, is the commonest species we have in Darjeeling not unlike the former bird. It makes a peculiar *took-took-took* noise and is usually seen, working its way up the bark of trees, tapping for insects. I have frequently seen them in Silver Spring forest, or rather all that's left of this once fine forest, and the more wooded portions above the house. This nuthatch is readily recognised by its predominating plumbeous colour; bright cinnamon or chesnut breast and abdomen. It has a black streak on side of the head; tail black, with a white spot on the inner web of the feathers, not always conspicuous. These nuthatches are usually seen in pairs, but generally a bit apart, climbing different trees or proceeding along the lateral branches. Between their labours they keep up a cheerful *took-took* note to keep each other within their call, I take it, for they are extremely active and cover a good bit of ground in their peregrinations. How these, and many other birds don't get lost and ever come together again is marvellous. I have carefully marked certain pairs, on several occasions and have not infrequently found the one with the other year by year. This nuthatch is 5¾ inches in length.

(252) SITTA FORMOSA, *Beautiful Nuthatch*, is by far the loveliest of the group and one of the prettiest little birds to be found anywhere. It has so many bright colours, beautifully blended on so small a figure (compass). Varieties of shades and kinds of blue and other colours: cobalt-blue, azure-blue, verdigris-blue, lavender, rusty brown and patches and spots of black and white are all found on this beautiful nuthatch. Which glisten and show out in the sunshine looking bright and vivacious, much more so, in the live-bird than in a stuffed species. The difference being between live colours and dead colours, if I may be permitted to say so. This nuthatch is to be found in Sikkim or Tongloo, also at Senchal; but not so frequently at this latter place. *Sitta formosa* is at its best, in spring, when it adorns its wedding garments. In length it is $7\frac{1}{2}$ inches; irides dark brown.

FAMILY UPUPIDÆ *(Hoopoes)*

This brings us to the 3rd group of *Tenuirostres*.

SUB-FAMILY UPUPINÆ *(Hoopoes)*

Are birds so well-known to residents in the plains, chiefly owing to their typical forms, markings and characteristics, that it seems scarcely necessary to introduce the hoopoe. Its bill is very long, curved and compressed; head is crested with long and spotted feathers; tail broad. These birds are terrestrial in habits and feed on insects—grasshoppers, etc. Gait is elegant and easy, not lacking in dignity. Hoopoe's call is lively, a familiar, *whoop, whoop, whoop*, which is oftener heard during the rainy season, when we have a nice break of sunshine, in the weather, after a "down pour." Its crest is generally erect and most conspicuous by its absence when depressed or trailing over its shoulders. The Hoopoe is uncommon in Darjeeling.

GENUS UPUPA

Bill very long, slightly curved and compressed; crest large; wing long, 4th quill longest; tail broad, of 10 feathers; tarsus moderate, with scutæ in front; claws short; hind claw long.

(254) UPOPA EPOPS, *European Hoopoe* is found at high elevations, more frequently on the Himalayas. It has more white about the body than the Indian species. Size about 12 inches in length. This Hoopoe visits Darjeeling in winter, from Europe, most probably.

(255) UPOPA NIGRIPENNIS, *Indian Hoopoe*, is smaller in size, being about 10½ inches in length. *Nigripennis* is the common Hoopoe found in the plains where it is a winter visitant chiefly. It differs but little in colour from its congener. Indian Hoopoe is found at most places in the plains. "It frequents groves of trees, thin forest jungles, gardens, the neighbourhood of villages, and old deserted buildings, mosques, tombs and large mud walls."

TRIBE DENTIROSTRES

This brings us to the big Dentirostral Tribe, with its ramifications of families, sub-families, genera and species. This group presents many interesting types of birds. They have more or less typically shaped bills; similar prevailing characteristic and habits; similarities in structure. Upper mandible is notched in most of the families, having a noticeable "tooth," as it is commonly called, a sharp curved tip, which aids the bird to tear the fruit or what food it habitually subsists upon; not infrequently to clear away bark, fibres, moss and leaves from the ground, in its search for food; or rip up big beetles, insects and sickly small birds, in the case of *Lanius* (lahtora). Some of our finest songsters belong to this group. All the warblers are found in this tribe; and those prim lady-like birds the Wag-tails, Fork-tails, Red-starts and Robins, and we might add Pipits, to this somewhat select class of birds; but we must not overlook the claims to refinement, and elegance of numbers of other birds, prominent among which are fantails and flycatchers. The warblers and their allied species, possess a complicated lower larynx, acted on by pairs of muscles which aid these fine songsters in the production of those musical trills and refrains, all true lovers of nature delight to listen to.

Birds of this tribe have strong bills, of moderate length, toothed at the tip, in some of the groups more distinctly notched.

They are represented by the following families:—

I. LANIADÆ *(shrikes)* birds of moderate size; beaks strong, compressed and possessing a well developed "tooth" on upper man-

dible. They feed on insects, small, defective, birds and mammals which they usually capture on the ground, then return to their perch, to eat.

II. MUSCICAPIDÆ *(Flycatchers)* comprise, birds of small size; bill typically much depressed, broad at the base. Rictal bristles well developed, which aid them in holding insects, captured on the wing.

III. MERULIDÆ *(Thrushes)* most of these birds feed and remain much on the ground, in preference to perching on trees; bill compressed, of moderate size and strength; rictal bristles undeveloped.

IV. BRACHYPODIDÆ. These are thrushes with short legs and feet, Bulbuls and Orioles. All of them are arboreal in habits; seldom seen on the ground. They live principally on fruit, when procurable, and soft berries; but they often have to fall back on insectivorous diet.

V. SYLVIADÆ *(Warblers)* small birds, as a rule, with slender bills, a sort of isosceles triangle in shape; longish tarsi. These birds feed chiefly on insects, at times are seen on the ground, generally on trees and bushes.

VI. AMPELIDÆ. This last group, takes in all the remaining forms of structure, habits and peculiarities of Dentirostres. None of these birds can be placed with assurance in any of the foregoing families. They comprise birds of varied types—Hill-Tits, the hard-billed birds including the True Tits, and the remaining type of Flowerpeckers, Shrike and Thrush-Tits, and Accentores. Majority of them are found on tall bushes, evergreen recesses or scrub-jungle on the hill slopes, favoring places which are in close proximity to springs and water-courses. Some of these birds are bright and beautifully marked, others again are dull, sombre in colour, and prefer secluded haunts. Their bills are of the most part stout and somewhat conical in appearance.

I. Family LANIADÆ *(Shrikes)*

Are composed of the following Sub-Families :—

(i) Lanianæ	... True Shrikes, having large bills.
(ii) Malaconotinæ	... Bush Shrikes, bills larger, feed chiefly on insects.
(iii) Dicrurinæ	... Drongo Shrikes, with long depressed bills, tails long and forked.
(iv) Artaminæ	... Swallow Shrikes. Bill short; tail short, wings long and swallow-like in appearance.
(v) Campephaginæ	... Cuckoo Shrikes. Bill wide at the base, slightly hooked; feed on insects; tail more or less racket shaped—Cuckoo-like, also their plumage to some extent.

Sub-Family LANIANÆ *(True Shrikes)*

Birds with slightly parrot or hawk-like bills, strongly notched, having a prominent, overlapping "tooth" or hook; claws sharp. Most of these Shrikes are dull plumaged birds. The *Lahtora* chiefly, rivals some of the mammals in cruelty. True Shrikes appear to have a partiality for "high game." They usually empale their victims, on big sharp thorns, which surround their larders, they not infrequently maintain, which is generally, on a leafy thorn-bush or tree. It is suggested, that, this is to soften the meat for which they are screwing up an appetite. I have seen a sickly little bird thus empaled, calling out loudly for help, and Lahtora, looking on with grim satisfaction, in fact it hardly heeded me, when I turned my attention, to it, and knocked it off its perch with No. 8 shot, from a collector's gun. The only good quality I can see, just at present, in these Shrikes, is the warning cry of *lahtora,—shrike! shrike!!* uttered in an excitable manner, while it skims over long lemon grass in the Terai jungles. Every now and again the warning note is heard, directing your attention, by shooting down in a perpendicular flight, towards a spot where the monarch of the forests, you have gone out to hunt may be, is stalking you, slowly, prowling like a great cat to take you unawares. These useful acts of service, are certainly a redeeming characteristic, which Lahtora possess, along

with two or three other birds, which we will notice hereafter. These warning notes, and temporary anxiety for their safety, has saved many a shikarie's life. Not a few birds show a desire for protecting the weak against the strong. Head of the True Shrike is large. It has a conspicuous black eye-streak; wings long; rictal bristles ample; tail longish and graduated. The sexes of *Lanius*, are alike in colour. Very few of these Shrikes come up to our elevation either to breed or to escape the inclement weather, elsewhere. Most of the species prefer the warm valleys. The species more frequently observed in Darjeeling is:—

(258) LANIUS TEPHRONOTUS, *Grey-backed Shrike.* It is seen oftener in winter, in Darjeeling. It flies fairly high and keeps a good deal to the tops of taller trees, excepting when foraging. Small birds have a marked dread of this Shrike, quite as much as the kestrel, whose voice it appears to imitate. It is 10 inches in length. It can generally be made out by its dark ashy colour, above; wings and tail are dusky brown; foreneck, breast and upper part of the abdomen white; ferruginous below; reddish on upper tail coverts and lower back; head, scapulars and back dark ashy grey. The black, eye-streak prevalent in this group is not so prominent in this species.

(256) LANIUS LAHTORA, *Indian Grey Shrike*, which, was mentioned in the introductory remarks, is more at home at a lower altitude. It has a wide geographical distribution and is found in most places in the plains. The "Butcher bird" as lahtora is commonly called is about 10 inches in length; bluish or iron-grey in colour; wings are black also the middle tail feathers; wings have a broad white band.

SUB-FAMILY MALACONOTINÆ, *(Wood Shrikes)*

Are more arboreal in their habits; they are seldom or ever seen on the ground, like *Lanius* when making a capture. Their bills are longer and more compressed; wings longer than the true shrikes; tail shorter; tarsus short; feet small and feeble. These shrikes feed on insects, occasionally on berries.

(263) TEPHRODORNIS PELVICA, *Nepal Wood Shrike*, is rarely seen in Darjeeling. It is more frequently met with in the woods, beside Runjeet and Teesta rivers. This wood-shrike is nearly 9 inches in length. It is pale ashy brown in colour, above; darker on the primaries and tail. It has a fairly conspicuous, white lower back

(rump); a black streak about the eyes; underparts of the body are whitish tinged with red on the breast. These birds are shy; and hide among denser foliage, when seen they are usually capturing insects on the wing or hunting for caterpillers.

(267) HEMIPUS PICATUS, *Little Pied-Shrike*, is seldom seen over 5,000 feet. Like most of its kind, it prefers well wooded parts of the district or thick jungle undergrowth, where it appears to associate freely with small birds about the place. Not infrequently it is found beside hill streams. It is 5 inches in length and is readily distinguished. Male is black on the back and scapulars; white lower back (rump); white wing band; tail feathers, white tipped; beneath, the body plumage is white.

(269) VOLVOCIVORA MELASCHISTOS, *Dark-grey Cuckoo-shrike*, is fairly common in Darjeeling, and could be mistaken, at a hurried glance for one of the Rock-thrushes. It is about 10 inches in length. Its plumage is plumbeous and appears bluish among the green foliage; quills and tail black; pale grey beneath; bill and legs black; irides hazel. This Cuckoo-shrike is seen more frequently here in spring, at no great distance upon the trees, at times nearer the top, usually gliding about the big lateral branches in search of insects and beetles. Its song is musical, which is uttered at intervals, during the day.

GENUS GRAUCALUS

Bill strong, deep, wide at the base, ridge curved and hooked; rictal bristles weak; wings long and pointed; tail rounded at the tip; claws large and curved.

(270) GRAUCALUS MACEI, *Large Cuckoo-shrike*, is also, occasionally found in Darjeeling. It is more abundant at a lower elevation. This species is not unlike a large Hawk-Cuckoo in appearance. In habits it differs, being shy and avoids exposure. Its call, at times is harsh and grating: but its song is musical which sounds like a soliloquy; but when taken by surprise, it lets you know that you are intruding on its privacy. It feeds much on insects, occasionally on fruit and berries. This Cuckoo-shrike is 12 inches in length; plumage above is light plumbeous-grey; tail blackish, tipped white; breast light grey; lower parts white, below the breast cross striped; bill blackish; irides dark coloured. It is the light grey colour, with the cross-stripes, appearing like horizontal lines, and racket tail which, at a passing glance, at times, mistakes this species, for the Hawk-Cuckoo or one of the hawks and gets accidently shot, as a marauder of poultry-yards and pigeon-coops. Its head is big. Its heavy, clumsy looking bill with widish, inflated margin at the base, cannot be mistaken.

The second group of *Campephaginæ* is a different type of bird: small in size and prettily coloured.

GENUS PERICROCOTUS, *(Minivets)*

Comprise of birds, much smaller in size, and are some of the most gorgeously plumaged among *Dentirostres*, which up to this point, have been birds of the most part, of sombre colours. Minivets visit us in spring, when these bright scarlet (males) birds, which might aptly be called "the flame of the forest," are frequently seen, with their glossy black heads and wings, as the case might be, of the males, with their bright yellow coloured mates, enjoying a little friendly chase among taller trees in the garden or perched on the tip of a bushy evergreen, kharani tree (ash) warbling a pleasant song of contentment and pride. Bill of these birds is moderately long, fairly broad and high at the base, culmen a bit curved; rictal bristles slight; wings moderate, 4th and 5th quills the longest; tail long, outer feathers graduated; tarsus and feet short and limited; claws curved. The two species, which are common in Darjeeling, are the Large and Short-billed Minivets.

(273) PERICROCOTUS BREVIROSTRIS, *Short-billed Minivet*, is oftener seen in Darjeeling, where it is fairly common. It seems to think that there is no other bird more beautiful than its sweetheart. The greater part of a spring morning you can hear it calling out "*pretty, pretty, pretty!*" and its mate replies, "*sweet*" in a most satisfactory manner. It arrives a good bit before *speciosus* and builds its nest usually on oak or tall evergreen trees. It constructs a delicate shallow cup shaped nest, which is placed between forked twigs. Eggs are broad-oval in shape, richly blotched and streaked brownish red and pale purple, on a greenish white ground colour. *Brevirostris* is about 7½ inches in length; deep crimson in colour; blue-black on the head, neck, upper part of the back, wings and a few of the tail feathers; wings with specks of crimson, also a conspicuous wing spot. In the female yellow takes the place of crimson.

SUB-FAMILY DICRURINÆ *(Drongos)*

Most of the birds found in this group are common in India, some species, more so, have a wide distribution, whilst others prefer certain localities. A number of these species are represented in Darjeeling and the district, where they retire to breed in spring and during the rains. As a rule these birds, love the warm sunny climes

best. Typically, Drongos are of slender form and build, clothed with black glossy plumage and adorned with long forked tails. Their flight is graceful, rapid and strong. Bill is largish, wide at the base, thick, curved and notched at the tip; rictal bristles strong and numerous; legs short; feet small.

(278) DICRURUS MACROCERCUS, *Common Drongo*, or Drongo-Shrike as it used to be called; or king-crow by residents in India; and "kotwal" by Indians. These names aptly certify to certain useful qualifications, this species possess. For the Common Drongo is on a fairly secure footing, with rascals in the shape of crows and other mischievous birds, even that hardened sinner *Milvus Govinda*, the common kite, holds this species of Drongo in respectful estimation and prefers to solicit its services, no doubt acting on the principal which governs not a few rules of bird life, such as, "a good friend, but a bad enemy," or the law which no amount of bird legislation can upset "let him hold who has the power, and let him keep who can," which rules of the game in foraging, both common kite and the crow scientifically known as *Corvus Splendens*, tenaciously adhere to. This Drongo is well-known so requires no special introduction. It feeds chiefly on insects, usually caught in the air.

At times should a dainty morsel present itself, it will follow hard after it, and secure it on the ground in a, somewhat, characteristic manner. This bird is social and seems to prefer the haunts of man, principally, the homely Indian cultivator. It is often seen perched on backs of cattle, relieving them of flies which torment their peaceful grazing, or may be, at times, merely enjoying the novelty of a free ride. The king-crow is 12 inches in length; bill longish, stout, depressed at the base.

(280) DICRURUS LONGICAUDATUS, *Long-tailed Drongo*, is fairly common in Darjeeling, where it arrives generally amongst the first of our spring birds. When this Drongo makes its appearance you may be certain that wintry weather has ceased, for a certainty, and no more surprises are to be experienced in the shape of "Cold waves." This bird though very like the "king-crow" in appearance, is generally made out by its longer tail. *Longicaudatus* is not quite 12 inches in length. Its plumage is glossy bluish black; bill is depressed at the base; tarsus very short; tail long, consequently it would experience some difficulty to rising off the ground, were it occasionally to land like the "king-crow" when in persuit of an injured winged termite or other insect. This Drongo's song is musical at the same time, having the metallic Drongo like sound. White-bellied species has a prettier note than *Longicaudatus*. It is partial to warmer elevations also Lesser Racket-tailed Drongo, both these species are uncommon and keep much to certain localities.

(284) EDOLIUS PARADISEUS, *Large Racket-tailed Drongo*, together with *Bhringa remifer* (283) go to form two beautiful and elegant species. Their long tail feathers, which droop gracefully down over the branch, the birds are perched on, more especially *paradiseus*, is particularly striking. The lengthened outer tail feathers are nearly 20 inches, comprise, chiefly a long black barb, with a black feathery web at its tip, the inner web only, with a twist down side up. It is a pleasure to watch these beautiful Drongos in the warm valleys on tall trees, beside the Runjeet or one of the big rivers. Flight of these birds is usually undulating, when proceeding any distance, but when making short sallies, their movements are graceful, more particularly when observed on the hunt for insects on the wing. They shoot up, rocket like, deftly secure the prey, then return to their perch. Then again, one can't help admiring, the ease with which these birds protect and handle, without any apparent obstruction, their long posterior appendages. No high born dame ever carried her court-train with greater grace. In shape and colour, *Dicrurinæ* are very similar to each other: a predominating uniform black with glossy steel blue.

SUB-FAMILY ARTAMINÆ *(Swallow-Shrikes)*

This is last of the groups Shrikes are composed of. These birds are Swallow-like in flight; in appearance not unlike them; in habits similar. At the same time Swallow-shrikes remind us not a little of Drongos to which they have a close affinity. Bill is thick, shortish, wide at the base, deep, and culmen rounded, curved commissures; rictal bristles undeveloped; tarsus and toes short and strong; claws acute and curved; wings long, 2nd quill the longest; tail short; birds of grey plumage, feed on insects on the wing, much like Swallows; but their flight is not long sustained.

(287) ARTAMUS FUSCUS, *Ashy Swallow-shrike*, is found in most places in the plains. Not infrequently they may be seen mixing freely with Swallows in Darjeeling in their aërial pursuits; but they are seen to greater advantage at a lower elevation below 5,000 feet where I saw them fairly plentiful, skimming over tea bushes, in their hunt for insects, also near hollows and jhoras, which required much closer attention than this aërial feeder could afford to give; as Flycatchers and Flowerpeckers scarcely missed a chance of securing a passing gnat or mosquito. Swallow-shrikes like their second-cousins the swallows prefer clear open country, village clearings in the jungle and unprotected, bare hill sides. They feed

exclusively on insects, but like the Drongos are seen oftener on their perches. Their flight is elegant and easy, much like *Hirundininæ*. In some parts of the country it is called Palmyra Swallow, owing to its partiality to this palm and other trees of like structure and qualities: as their sweet juices attract swarms of insects. These Swallow-shrikes are often seen in the plains, more so perhaps than in the Himalayas. Skimming over the surface of quiet peaceful tanks and lakes. Occasionally they are seen passing to and fro over the surface of hill rivers. Their flight is typical: a few rapid flaps of their wings, then taking advantage of the impetus gathered, they sail with out-stretched wings, either on the straight or executing curves, loops and circles. Their cry is wild, though hawk-like in sound. *Fuscus* is 7 inches in length; extent of wings 15 inches; bill pale blue; plumage ashy-grey, with a reddish tinge on the back, under parts are white; sexes are alike in colour.

II. FAMILY MUSCICAPIDÆ *(Flycatchers)*

The second group of Dentirostres, have many interesting representatives in Darjeeling: Flycatchers, appear to be in many respects well marked out by nature. They comprise birds of small size of the most part, feebler bills than Shrikes; gape fairly wide; strong and numerous rictal bristles, assist them in securing insects, on the wing; legs short and feeble, suitable for the perch from where they make short rapid sallies and usually return to the same perch. Bill is typical, fairly wide, depressed and shallow, hooked and notched at the tip. Without entering into minor details of anatomy and structure, these few leading characteristics will suffice to distinguish this typical group of birds.

They are divided into (i) *Myiagrinæ*, (ii) *Muscicapinæ*.

(i) SUB-FAMILY MYIAGRINÆ *(True Flycatchers)*

Comprise, birds with flat triangular bills; rictal bristles long, numerous and well developed; feet feeble. They feed on insects, chiefly caught on the wing. They are restless in their habits; all their movements are easy and graceful. It is a pretty sight to watch these typical Flycatchers at work, you can hear, without difficulty, the loud snap of their mandibles, at each flick at an insect.

We find three species heading the list are birds found in the plains; but not ascending the hills.

GENUS TCHITREA *(Paradise Flycatchers)*

Are not clothed in bright and gay plumage, nevertheless they form a group of beautiful and graceful birds. Though some of their closely related species are richly adorned. To this genus belongs the very beautiful group of birds known as "Birds of Paradise" found in the tropics. A no mean representative, is seen on rare occasions in the wilds of Burmah. It is known as King Bird of Paradise of richer colour than *Cicinurus regius* of New Guinea. This rare species found in Burmah has a most entrancing love dance, which few human beings have been permitted to witness. Our representative in India has generally predominating white plumage.

(288) TCHITREA PARADISI, *Paradise Flycatcher*, seldom gets beyond foot of the hills, where it is found in thickly wooded parts. It is frequently observed in more open country. *Paradisi* is about 9 inches in length. Its long central tail feathers are about 16 inches long, which gives *Tchitrea* together with its structure and habits a beautiful airy appearance on the wing. It is restless and active in habits, never seems to tire in its light wanderings, flitting from perch to perch with the lightest tread. It seldom seems to rest or ever to land on the ground. Indians have a legend to the effect, that this bird was turned out of Paradise for misdemeanours. Certainly Paradise Flycatcher looks like a truant bird from Eden. Colour of this species is white, with glossy greenish black on the head and neck; black on some of the quills, primaries and secondaries; head crested with hackle like feathers; bill and eyelids of this species, and *affinis* are cobalt-blue; irides deep brown. The peculiarity about this bird is, changes of colour the plumage undergoes. Chestnut is often met with in place of white, in a big number of birds at various seasons of the year. Prevailing white is not infrequently the change of colour effected by age of a full grown bird, not by any seasonable moulting. The female differs but slightly, the accessory tail feathers are shorter. This species may well be called "the Rocket bird," owing to its long streaming tail, more obvious when on the wing. Paradise Flycatcher is often seen in the plains. Occasionally it visits gardens and orchards. In the district it prefers warm valleys and seldom ascends above 2,000 feet, at this latter elevation in spring.

(291) LEUCOCERCA FUSCOVENTRIS, *White-throated Fantail*, is the first of this interesting family we find in Darjeeling, where it is fairly common in the woods. Frequently visiting in company

with other small birds, our gardens, trees and bushes, near the house, searching for insects usually on the wing. A pretty sight it is to see, this graceful little Fantail Flycatcher, come waltzing along at every turn and twist it takes, opening and closing its fan, as though it took a pride in possessing such an accomplishment. Unlike the True Flycatchers it often lands on the ground, by the road side and deftly, with a graceful, scarcely a few inches off the surface, in a semicircular flight and sweep of its wings, secures an insect, just rising from off the gravel path, the audible snap of its mandibles can be distinctly heard. From a short distance, the plumage of this Fantail appears black; but a closer scrutiny proves it to be sooty-brownish black. It has a white chin and throat, also white tipped tail feathers, which are easily made out. In size *fuscocentris* is 7½ inches long; extent of wings 10 inches; irides are deep brown. This bird is called *chak-dil* or "Wheel Dyal." Male has a sweet, clear, merry song, bright and cheerful, often heard in spring, uttered whilst it gaily waltzes from branch to branch or bush to bush. Usually the song is of four or five notes, running down the scale, incomplete, ending abruptly, which produces an irritating effect on the listener, owing to the sudden break, now and then it relieves you by completing the broken scale. This fantail, like *Tchitrea* has light airy movements as though half in play and fun, even when it has a more serious project on hand, of nest construction, which production is a work of art, few birds could make a neater job. A beautiful little cup shaped nest attached to a single green twig, prettily finished off outside, by winding cobwebs tight (?) round it, leaving a frayed out bunch of moss and roots below, to make you think, that, it was merely a tangled stray bit of herbage caught by the branches. Should you have the good fortune of discovering this fantail's nest, you will see that an expert, and master builder has been at work.

(294) CHELIDORHYNX HYPOXANTHA, *Yellow-bellied Fantail*, is a pretty little bright yellow coloured bird, which is readily made out, when in Darjeeling, restlessly fluttering among the branches of tall trees by side of the road, which passes through the well wooded parts. This fantail has a light gossamer-like flight, when seen, it either makes short sallies in the air after insects, or prettily opens and closes its fanlike tail. It is a smaller bird than *fuscocentris* and perhaps does not come up to its bigger congener in waltzing accomplishments, nevertheless, its a good second best, any way, in the district; but it has a much lighter tread and all its movements are graceful. This little Fantail is found in most places at a high elevation, in spring. On the road to Tongloo, in Ghoom forest in particular it is frequently observed. *Hypoxantha* is 4½ inches in length; extent of wings 6 inches; plumage is bright yellow, on lower parts,

also an eye-streak of the same colour; upper parts are dusky ash, with a greenish tinge; some white on the outer tail feathers. This fantail has a pretty, soft warble, when at rest on the tip of a big evergreen; this subdued song, so full of rich notes, recalls not a little the mellow trills of the canary.

(295) CRYPTOLOPHA CINEREO-CAPILLA, *Grey-headed Flycatcher*, as it is called, owing to its greater display of *Muscicapinæ* tendencies, than any of the *Myiagrinæ*. It gives us a convenient link between the two sub-families, more obvious perhaps, in birds in their natural state. Occasionally it may be seen to flutter its tail in true fantail fashion. In habits generally, it rivals typical qualities of the next group of Flycatchers. Like most of its family it is a spring visitant. It arrives amongst first of the migratory birds. It is not nearly so friendly as the last two fantails. It prefers denser, more luxuriant and secluded bowers, whilst in Darjeeling. In spring, its cheerful call is often heard, which is not unlike, more musical of course, the sound the wheels of a clock would make when wound, a rapid mechanical clicking. This merry, lively *chir-r-r-r-il* is pleasant to the ear. It has rather, a stimulating effect on the mind of the listener. This bird is bigger than last mentioned species, being about $4\frac{3}{4}$ inches in length, of a more robust build and temperament; plumage, above, is light yellowish green, with prominent dark ashy head and nape. Its typical grey head will always help you to distinguish it from other little birds it usually associates with in Darjeeling; rump and upper-tail coverts tinged yellow; breast pale ashy and lower parts of the body are a brownish yellow. *Cinereo-Capilla* has a pretty song quite apart from the clock-winding cackle, which is uttered more as a note of excitability. One of the characteristics in flight of this Flycatcher fantail, is a typical mid-air hover poised on the wing when securing an insect, this peculiarity in flight is often noticed in the kestrel, "king-crow" and some of the kingfishers; in the hills more often seen in Honey-suckers as they hover lightly over a flower to extract the honey. Together with this hovering poise on the wing. I have noticed on several occasions a peculiarly typical lateral or horizontal motion quickly performed from side to side within radius of about a couple of feet or so. This peculiar flight I subsequently found was due, more or less to, the anxiety to secure as many mosquitoes it had got in amongst, whilst a biggish colony of these insects were fertilizing. The Flycatcher in its act of snapping at the mosquitoes, kept up a quick excited rattle like noise. I have detected in no other species this quick lateral, back and forth flight.

SUB-FAMILY MUSCICAPINÆ

Is the second group of Flycatchers. These birds feed on insects partly on the wing, or pick them off the leaves and are fairly at home on the ground. The first few, do not often avail themselves of this accomplishment. Bill is depressed and moderately wide, a little hooked and notched at the tip; rictal bristles moderate; wings more or less rounded; tarsus short. As different species are examined, the further we proceed down the list, the tarsi are more lengthened and strong; feet usually small; tail not lengthened. Not a few of these birds grade into the *Saxicolinæ* thrushes. Their young are spotted in plumage before they assume their full fledged livery.

(296) HEMICHELIDON FULIGINOSUS, *Sooty Flycatcher*, is frequently seen in Darjeeling, perched on the tip of a big bush or tree. When on the wing, it is swallow-like in appearance, and gets mixed up with them, when flying about; their wings being much shorter, they can easily be distinguished. In size *fuliginosus* is 4½ inches; plumage fuliginous-brown; wings and tail dark; under parts of the body whitish. This bird is more readily distinguished, when making a dash after a rising or passing insect, after the capture it usually returns to the perch, it has been sitting on. *Fuliginosus* has a shallow bill, wide at the base, narrow tip, scarcely hooked and notched; rictals short; wings long for a Flycatcher, 3rd quill the longest; tail short; tarsus short; feet short.

(299) ALSEONAX FERRUGINEUS, *Ferruginous Flycatcher*, though not so plentiful as the former bird, it can occasionally be seen in Darjeeling. It is generally, made out by its rusty-brown colour. *Ferrugineus* is 5 inches in length, above, plumage is brown; ferruginous upper tail-coverts; head tinged olive; tertiary quills and wing-coverts pale chesnut; tail feathers blackish; also the remaining quills; front of the neck white; beneath more yellowish; ferruginous under tail coverts and flanks. This Flycatcher is seldom seen near frequented roads. It seems to have a preference for more solitary places.

(301) EUMYIAS MELANOPS, *Verditer Flycatcher*, as I prefer to call it, keeping to the old familiar name of this friendly little bird, which brings to mind so many fond associations of the past. This bird is sometimes called Spring Flycatcher, which is typical of its unfailing qualification of being among the first of the visitants to arrive in Darjeeling, the first bright cheerful day after a somewhat dreary winter. This pretty little bird is perhaps one of the commonest and best known of our Darjeeling birds. It is frequently seen, in spring to soar up and up, as do the sky-larks, warbling

sweetly and lark-like as it rises, as ever one would like to hear and see, but being a Flycatcher, it never disappears "far o'er the downy cloud," nevertheless, it goes a good height for so small a bird. It is usually an insect, which sends it soaring up, it returns to the same perch. It is pretty to watch in descending, with its light outstretched wings, when nearing its perch it slowly and buoyantly dives down to the tip of the evergreen, it had sat on and trilled its song. This little "blue-bird," as it is popularly called, and the Yellow-bellied Fantail (294) display similar habits. They warble in those warm balmy spring days in May, a song clear and rich; scarcely inferior to some of our well-known Warblers.

GENUS MUSCICAPULA

These birds grade into the Redbreasts and robins (other than the Saxicolinæ robins). They are birds with feebler bills, depressed and wide at the base, a sort of isosceles triangle, when viewing the bill from above, bill is not so well notched or hooked as the proceeding groups; tarsus slender; toes slight, middle toe lengthened.

(312) MUSCICAPULA SAPPHIRA, *Sapphire-headed Flycatcher*, though a fairly uncommon bird, it is occasionally met with in forests and jungles. It lives a solitary life among thick bushes and undergrowth. It is 4¾ inches in length; bill black; irides dark brown; plumage of the male above is purplish tinged dark blue, darker about the upper tail-coverts; crown of the head sapphirine blue; black about the sides of the head; purple, breast and front of the neck, a centre line down the breast ferruginous; quills and tail black with blue edgings to the feathers; under parts of the body white. The female displays more olive.

GENUS NILTAVA

Is a much more interesting group, from our point of view than *Muscicapula*, chiefly owing to the tameness of *Sundara* and the frequency with which one meets this species in Darjeeling. These are birds of rich and bright plumage; robin-like in the trust and confidence they repose on our good nature. Bill of *Niltava*, is short, stout and less prominently depressed, compressed at the tip and strongly notched; bill is not so wide as the foregoing birds; nareal and rictal bristles and plumes, short and weak; wings long and rounded 5th quill, longest; tarsus slender and short; middle toe lengthened; plumage of the male is black, with rich blue markings; female pale brown with a few lilac feathers on the neck. These birds are frequently observed on the land, differing from True Flycatchers; but are equally at home on branches of bushes.

(314) NILTAVA SUNDARA, *Rufous-bellied Fairy Blue-Chat*, this beautiful bird is about 6¾ inches in length; wing extent 10 inches. In general characteristics it takes the place in Darjeeling, the English Robin does in the homeland, more than any other bird we have here does, in spring and during the rains. In winter one of the redstarts is more in evidence, *Ruticilla frontalis* (503) Blue-fronted Redstart chiefly. The male is bright smalt-blue, above, head, nape, shoulders lower back and upper tail-coverts; wings black, edge with a little blue; tail dark blue, feathers black on the inner web; breast and lower parts bright ferruginous; rest of the plumage is deep black; irides dark brown. Female is light olive brown, with a few lavender blue feathers on sides of the neck.

(315) NILTAVA MACGRIGORIÆ, *Small Fairy Blue-Chat*, is much rarer and difficult to find. It is timid and seclusive in its habits. It is now, seldom seen in Darjeeling owing partly to the systematic clearing away of jungle undergrowth, which used to be valuable cover for small birds, also the ruthless shooting of inoffensive little birds. One would have a better chance of falling in with the small Fairy Blue-Chat, in some of the seclusive retreat in Ghoom forest, or on Birch hill. It is 5 inches in length. Black predominates the plumage of the male; colour above is rich violet purple; forehead and neck spots are brilliant ultramarine; wings and tail black, feathers edged blue; breast violet-blue; lower parts of the body are dusky ash in colour.

(316) NILTAVA GRANDIS, *Large Fairy Blue-Chat*, is the giant or large species of *Niltava* genus. This bird is a little more accommodating than the Small Blue-Chat; but it does not show itself on such a liberal scale as *Sundara*. Its bright and beautiful colours come as a surprise when least expected. Whilst the hill track you are taking leads through some dense forest glade. This biggish bird silently rises for a minute or two to settle on a bush before you, startled at your approach, out of a dark recess or corner of the hill and forest, where a spring gushes out of the side of the bank. Its flight on such occasions is light, easy and butterfly-like, as it alights on a perch. It is usually found near springs, watercourses, and dark recesses where it as a rule feeds, on the ground as Niltavas frequently do. The prevailing colour of *Grandis* is black; but it has a brilliant display of lazuline or azure or turquoise blue, whichever colour you please, on the crown of the head, large neck spot and patch on the shoulders and lower back; rest of the plumage is deep black; above, glossed dark purple. It is 8¾ inches in length; bill black; legs a reddish tinge; irides dark brown; wing expanse about 12½ inches. In habits this bird reminds us not a little of the Yellow-billed Whistling Thrush (343).

GENUS SIPHIA

Birds of small size. Bill depressed, narial bristles lengthened, toes longish; lateral toe uneven; claws long and curved.

(319) SIPHIA STROPHIATA, *Orange-gorgeted Flycatcher*, is perhaps the best bird of this group to halt at, as it is a typically marked species, also, occasionally seen in Darjeeling, chiefly in spring. At times on the road side, feeding on insects and caterpillars or perched on a branch in a secluded position. It is 5½ inches in length. Colour is dusky olive-brown, which appears dark grey from a short distance away among the bushes. Its bright-orange gorget, like a breast plate, strikes the eye of the observer, as soon as the bird appears in sight and aids one to the more readily distinguish it, together with the white on the wings when flying.

(323) ERYTHROSTERNA LEUCURA, *White-tailed Robin Flycatcher*, is a rarer bird, more so in Darjeeling. It is a spring visitant, having descended to the plains in the cold weather to escape the bleak treacherous weather. In size, it is 5 inches in length; colour above, is light olive; wings brown; tail dark, some of the outer feathers white tipped with brown; beneath it is white with a brownish tinge. This bird though solitary in habits, in spring it gets more social and when seen it is usually in company with other small birds. *Leucura*, wherever met with, is tame and friendly, Robin-like in characteristics.

(326) ERYTHROSTERNA MACULATA, *Little Pied Flycatcher*. In the early part of the year, this little black and white Flycatcher is frequently seen in Darjeeling. It is distinguished without much difficulty. Occasionally you will see it, sitting quietly on the electric wires, at places where they pass over short scrub jungle; or near more wooded parts of the station. From a distance this bird looks not unlike a smaller edition of Dark Grey Bush-Chat (486) or perhaps, the last mentioned species, owing to its white markings. *Maculata* is 4½ inches in length; squat in appearance. It has a prominent white stripe over the eyes to nape of the neck, and a large white wing spot; tail feathers are more or less white; sides of the head and neck black; breast and underparts of the body white.

FAMILY MERULIDÆ *(Thrushes)*

These well-known birds require no preface. They are chiefly of moderate size, excepting a few small birds, which have an uncommonly close affinity to the thrushes. Bill of moderate size, excepting a few more aberrant groups, fairly straight, compressed, culmen slightly curved and in most instances notched; tarsus moderate in some, longish in others; feet strong, usually well adapted for progression on the land. Their food consists chiefly of insects and grubs or fruit and berries. Blue appears to be prevailing colour of this family generally. *Merulidæ* thrushes are found divided into the following sub-families:—

(i)	MYIOTHERINÆ	... Ground-Thrushes.
(ii)	MERULINÆ	... True Thrushes.
(iii)	TIMALINÆ	... Babbling Thrushes.

SUB-FAMILY MYIOTHERINÆ *(Ground-Thrushes)*

Typically these birds have the legs and feet long and strong: wings short; tail usually short in most of the species; bill varied, stout in some, slender and straight in not a few. The approach to these thrushes, is occupied by small birds: the wrens and Short-wing. These pert little wrens are true thrushes by construction, habits, etc. Different localities in the district and in Sikkim find one or other of its members more prevalent. Some of the commoner species of wrens were fairly plentiful in the station; but of late years they have forsaken us, and are becoming conspicuous by their absence. A few years ago, I saw one or two stray ones on Birch hill; rarely found now, in Silver Spring forest above the house. Few places in India appear to be so rich in different species of wrens and thrushes as the Himalayas, district of Darjeeling being no exception. Nevertheless, in these days, one would have to go a mile or two, before meeting a true wren. Not a few of the species prefer a high altitude. Cold wintry weather does not seem to trouble them much. Wrens appear to differ but slightly, no matter in what part of the world they are met with, in their natural surroundings. They are generally seen, hopping about among fallen logs and rotting undergrowth near or on the ground.

TRUE WRENS, have strong legs, and tail typically short. This hind appendage is carried in a fashion peculiar to this group, which gives them an uncommonly pert and cocky little appearance, where-

ever found. Their wings are short and rounded, unsuitable for long flights; hind toe and claw long. In habits they are solitary and silent as a rule, though some of the hill wrens whistle beautifully and have a powerful far reaching call. I well remember, a bleak cold day in November, some years ago, when I put up, in a rambling, long yâk drovers' bathan, for about two or three weeks, near Jongri about 13,000 feet elevation, where I made the acquaintance of a friendly little spotted wren.

(334) TROGLODYTES PUNCTATUS, *Spotted Wren*, which brought back memories of the Highlands and the heathered hills. One would need to look far before finding another species resembling so closely, the habits and characteristics of the homely little wrens of days gone by. Usually wrens in the district are difficult birds to find, especially members which prefer high altitudes. Species which are partial to lower elevations, below 5,000 feet seem faithly accustomed to hide away in thickly tangled bushes. Owing to this characteristic persistancy of keeping close to cover, it is with difficulty that the different species are made out. Doubtlessly, the higher one gets the more friendly wrens seem to become; but they keep much to fixed localities. This friendly spirit shown by the little Spotted Wren on this particular occasion, might be accounted for, it may be, to the sympathy shown them by shepherds and their families. I have frequently noticed, in the district with pleasure, the terms of close friendship which exists between these humble folk and the friends nature has placed beside them.

(329) PNŒPLYGA SQUAMATA, *Scaly-breasted Hill-wren*, used to be the common Darjeeling wren, at all seasons. Even now they are not infrequently met with. Its loud cheerful little song is often heard in spring, which is uttered every now and then, after intervals of a few minutes. *Squamata* is 4½ inches in length; its irides are brown. Lepchas call it *marchok-bong*; plumage, above, is dark olive-brown or dark chesnut as it appears, uniformly speckled with buff; breast white and spotted; under parts are more broadly marked. More or less the bird has a scaly appearance, owing to the brown and white edgings, tips of the feathers; below, plumage is browner. At different seasons of the year, colour alters a good deal. In spring, birds in general are at their best, in bright adornments. Most birds have darker vestments in winter.

GENUS BRACHYPTERYX, *(Short-wings)*

Have a strong affinity to wrens. They are closely associated with them in habits and structure. They differ much in a few more typical points, both in shape and colour. As you watch a solitary species busily hunting for grubs near the ground in the

bushes, it stops now and then in the search to look up at you, in a most confiding manner. Unlike the wrens these social little birds, don't seem to mind you looking at them. Bill is of ordinary size, straight, slightly notched and curved at the tip; gape smooth; wings short and rounded 4th, 5th and 6th quills the longest; tail short and soft; tarsus long and strong; feet large; hind toe large; claws long; predominating colour of these birds is dull blue.

(338) BRACHYPTERYX CRURALIS, *White-browed Short-wing*, is common in Darjeeling. When observed it is usually tame and friendly, though only on rare occasions, it will be induced to show, where it has so artfully hidden its nest, one usually can rest assured that it has done its level best to prevent its discovery. *Cruralis* can always be depended upon in being bright and cheerful, even on those dark wet days in July, which seem never too damp and cheerless to dull the little Short-wing's ardor. Rain or mist, "Sun or shine," you can usually meet it, in among undergrowth busy at work, lifting its head for a pause now and again, and sending forth a shrill call, that makes you wonder, if you have not already noticed the bird, from where the sound came. It takes you all your powers of observation to locate the voice, partially by the uplifted head and quiver of the little throat of the bird, a few yards it may be, below you. *Cruralis* is a true vantriloquist, the first few notes, sound as though proceeding from a much greater distance, in the direction the voice is thrown. To your no less wonderment and surprise, when you are half assured by the last note or two, that the clear shrill call has come from the little Short-wing, which suddenly shows itself. This species is 5¼ inches; plumage of the male is dull greyish blue with white, eye streak not unlike eye brows.

We will now turn our attention to bigger members of MYIOTHERINÆ *(Ground-Thrushes)*.

WHISTLING THRUSHES

These might be called Blackbirds, though much bigger. True Blackbirds are *Turdulus* and *Merula*. These handsomely marked thrushes *(Myiophonus)* have one species the *Temminckii* which is common in Darjeeling, whose rich mellow whistle, it would be difficult to surpass. They are birds of black plumage, over laid with rich glossy blue. Bill is large, strong, compressed, notched and hooked at the tip; rictal bristles hardly noticeable amongst the short plumes; wings long and pointed, 5th quill longest; tarsus long and strong; feet strong; claws strong and curved.

(343) MYIOPHONUS TEMMINCKII, *Yellow-billed Whistling Thrush*, is common in Darjeeling and remains with us pretty well throughout

the year. During winter it selects more secluded nooks and corners in jungles. At other times it is partial to the neighbourhood of Jhoras: the rushing torrents during the rains, which descend in cascades down the hill sides. This bird is often seen on dry water-worn cob stones in middle of the stream or Jhoras as they are more aptly called. A pair of these thrushes, are generally to be found in the Kagjhora, below the railway bridge. One often wonders what happens to the young *Temminckii* successfully launched into the world, year by year, two or three at a time. Lets hope each have been successful in finding an unmolested portion of a Jhora, somewhere in the district. Each bird prior to inviting a mate, if it has not already gone through the onerous duties of house-keeping; or per chance has its companion, locates itself within a certain area, perhaps a couple of hundred yards or so, of one or other of the hill streams, beyond this limit, is usually the confines of another member of the same species. On no account, will one trespass into the realms of another, not that they fear legal proceedings, but seem to follow natural instincts. When driven by hunger Temminckii will leave the Jhora where provisions are scarce, and make for scrub jungle or shady forest recesses, which appear to be considered "Tom Tiddler's ground" by most law abiding birds. Birds seldom seem to fight over their special reserves. The Whistling Thrush feeds much on aquatic insects, it is not a little partial to grubs and earth worms. In Jhoras, they are generally seen in company with Plumbeous Water-robin (505) and its bigger congener, the dignified White-capped Redstart (506). This, worthy triumvirate of species appear to live on extremely good terms with each other, notwithstanding the great difference in size between them. *Temminckii* is about 13 inches; Water-robin 5¼ inches in length, and Redstart 7½ inches. This will give an idea of their respective sizes. So that size is not always a source of danger in Birdland. *Temminckii's* heavy bill cannot always be lightly esteemed by small birds generally, leave alone the strong grip it can get on to its claws when desirous. Whistling Thrush jerks up its tail in true *Blackbird fashion. All three friends have their hind appendage well under control.* A fellow feeling makes us wondrous kind they say. It has in spring a most musical and alluring whistle, human-like in sound, as it could be, a run up and down the scale. This song is usually indulged in whilst on the wing, and grows sweeter, I often imagine, as it flies homewards to greet its brood of nestlings. The general appearance of this species is dark glistening cobalt-blue; smalt-blue on the wings, shoulders and tail; bill yellow.

(344) HYDRORNIS NIPALENSIS, *Large Nepal Ground-thrush* is a big Pitta: one of our richly coloured group of birds. *Hydrornis*

differs from the general run of Pittas by its large, heavy, more or less hooked bill; wings are short and rounded, 5th, 6th and 7th quills the longest. This bird and Pittas keep much to warm valleys in the district and seem to dearly love a tropical sky. They prefer locations, near banks of our big rivers, Great Runjeet and Teesta. At times they take up their abode in luxuriant forests. Like our Indian mynas they are found frequently feeding on the ground, and are not unlike these birds in habits. Lepchas call them "Coloured mynas." This species is 10 inches. It has a bright and beautiful verditer-blue wing-patch, resembling the white mark on the mynas wings; plumage, above, is dingy green; yellowish brown on the wings; upper neck and nape verditer-blue; under parts are rufous.

(346) PITTA CUCULLATA, *Green-breasted Ground-Thrush, (Pitta).* This beautiful bird is found, frequenting banks of our hill rivers at a low elevation. Appreciating, evidently, low lying undulating country or straths, river sides and Jhoras. Its bill is stout, of moderate size, slightly forked at the tip, and notched round the base. In size *Cucullata* is about 7 inches. This bird displays a variety of colours, above, plumage on the back is dark green, with a deep gloss; bright verdigris-blue on upper tail coverts, and a little of the same colour showing on upper parts of the wings; primaries, black with a conspicuous white wing patch; breast and underparts light green; under tail coverts bright vermillion; head dark, chesnut; sides of the head and neck black.

(345) PITTA BENGALENSIS, *Yellow-breasted Ground-Thrush,* is the common Pitta of the plains, where it is often met with near forests, avenues, and in clumps of trees, or foraging on the ground near village cultivations. The Hindu name for this ground-thrush is "naurang: nine-coloured bird," this will give an idea of the bright display of colour found on birds of this group.

GENUS HYDROBATA, *Water-Ouzels, (Dippers)*

Here we have a more typical bird of the district, with interesting characteristics and habits. One species is familiar with our hill streams. These birds generally procure their food from below the surface of the water. They appear to love the rushing torrents so frequently met with in the Himalayas. They usually, seem to carefully calculate the strength of the currents before venturing a dive into the turbid waters. These birds are strong on the wing, both in flights in the air and progression through deep pools of water, caused by the flow of the river, where they propel themselves under, surface of the water with startling rapidity. After the dive,

I have occasionally timed these birds, and one or two minutes progess under water does not seem to cause them any inconvenience, or requiring a short rest to regain their breath, one would expect to find the dipper a bit blown on reaching the surface after covering, in so short a time 20 or 30 feet below the water. In all probability they could cover a greater distance were it not for the limited passage, across our hill rivers and the strong currents frequently encountered. Bill of the Dipper is longish, straight, slightly ascending, an uptilt of bill noticeable in most of the kingfishers and Insessoreal water-birds; tail short; hind toe short; lateral toe equal; claws curved.

(347) HYDROBATA ASIATICA, *Brown Water-Ouzel*, is the only representative, we have on our side (Eastern) of the Himalayas. Owing to its characteristics and habits no difficulty need be experienced in making the acquaintance of this interesting smallish bird. It frequents most of our rivers, Runjeet and Teesta, where it locates itself the greater portion of the year. In spring, it may be seen, at a fair elevation, far up hill streams and big Jhoras, drawn, it may be by the migratory impetus of not a few of the *Insessores* or bird life generally. Like the kingfishers it is often seen perched silently on a sharp, pointed rock, or at other times on a dry spot on the bed of the Jhoras, or flying up stream. Like most of the Insessorial "Water-birds" it starts, nest building, amongst the first of this big natural order of birds. In size this Water-Ouzel is $8\frac{1}{4}$ inches; general appearance of the plumage is dark brown; bill black; irides dark brown. In habits it is typical, being unlike other birds in the district, more especially, in its mode of procuring food. It dives into the troubled waters, striking out vigorously under deep sweeping currents and reappears at some distance beyond. On such occasions you are reminded not a little of that master-diver, in the plains, Indian Skimmer, *Rhynchops* (995) though at the same time, you are conscious of the fact that this expert in the art of diving, prefers deep sullen "mill ponds," whereas the little ouzel ventures, where few human beings would care to run the risk. The tail of *Hydrobata* is short, like a true diver; its toes have no web to aid its paddling, so that it has to rely on the strength of its wings, in its battle with the elements, and many a time must its little store of energy, hung on a balance, when the overpowering currents are sweeping it down stream. In spring and during the rains it is frequently seen picking up aquatic insects, shells, etc. in Jhoras. It strikes one, that on such occasions it is not in its element. This apparent self-imposed drudgery, no doubt is to meet the big demand for food to keep the household from starvation, for these little hungry mouths have to be attended to every few minutes.

The Water-Ouzel lives, at all times on the best of terms with all rivals for aquatic diet on hill streams. The remaining species of dippers are found chiefly on the Western side of the Himalayas.

(350) ZOOTHERA MONTICOLA, *Large Brown Thrush*, is a remarkable bird in many respects. It offers us a convenient gradation between the Pittas, Dippers and the Merulinæ thrushes. In size it is a shade smaller than Yellow-billed Thrush (343), being 12 inches in length. Bill of this species is longish, compressed, slightly curved and hooked; wings and tail short; tarsus fairly strong; lateral toes equal and short; hind toe long; claws curved. *Zoothera* prefers high altitudes, a few may be met with, at times, in Darjeeling, chiefly in the cold weather. It is evidently more at home, on the Singalillas, in dense bamboo and Rhododendron jungle or where more or less luxuriant forests exist; where the ground beneath is damp and moist. *Zoothera* has given not a little trouble to get it to betray its nest, so as to learn a little of its nidification. This thrush seldom perches on trees. It is generally found on the ground, scraping away dead leaves, which lie in thick layers, in some dense shady retreat, damp and forbidding; tossing the leaves about with its ample sized bill, as though it were in the General Post Office sorting letters, it is not the leaves, however, that it directs its attention to; but the tit-bits in the way of grubs which it is intent on. The nest of *Zoothera*, which I found by some lucky chance, is a biggish mound of damp green moss outside, neatly rounded of sides, broad at the base, and tapering a bit towards the top. Inside, the nest is a neat, cup shaped hollow, with soft fibres, black hair like moss roots, and fibrous shreds off a creeping plant. Eggs are *Tennuinkiin*. Plumage of this big thrush is dark olive brown, with a dark ashy tinge; wings brown and dark; throat and underparts of the body white; breast spotted.

SUB-FAMILY MERULINÆ *(True Thrushes)*

Comprise Thrushes and the Blackbirds. The first few species are known as Rock-Thrushes Chat- and Ground-thrushes etc. having long and stout toes; strong claws; bill stout, narrow, compressed and notched at the tip; rictal bristles scanty and weak; wings longish 3rd and 4th quills longest; broad and pointed. They are strong on the wing; silvan in habits and feed chiefly on insects, earthworms and berries.

GENUS PETROCOSSYPHUS *(Rock-Thrushes)*

Have longish straight bills, with the tip curved; tail long (usually). Birds which frequent rocky localities and scrub jungle.

(351) PETROCOSSYPHUS CYANEUS, *Blue Rock-Thrush*, is occasionally seen in Darjeeling. In winter it descends to foot of the hills where they appear to congregate. They are shy and faithless. It has a sweet melodious sort of warble, which approaches in richness, some of the rich songsters in this family. *Cyaneus* is about 8½ inches in length; plumage of the male is dull indigo blue, spotted with darker tints, which effect is caused by dark edgings to tips of the feathers; under tail-coverts and lower parts are tipped with a pale brownish tinge; irides are deep brown.

GENUS OROCETES

These are Chat-like birds in general appearance, and habits not a little. They can safely be called Saxicoline Thrushes; wings are short, 3rd quill longest; rictal bristles more developed; bill shortish, straight, curved at the tip.

(352) OROCETES ERYTHROGASTRA, *Chesnut-bellied Thrush*, is one of our permanent residents in Darjeeling. In winter these birds are frequently observed; in spring they are much in evidence. This richly marked thrush is seen usually on the tallest trees, at times it descends to the land to forage. It has a fine clear melodious song. In the district, or about Darjeeling the only two other species of *Merulinæ* which excel in song *Erythrogastra*, is the next, the Little Blue-headed Chat-Thrush and (361) Grey-winged Blackbird. *Erythrogastra's* song is frequently heard in spring. It seldom seems to care to expose itself, to the gaze of an unsympathic world, usually it is either securely hidden away among dense foliage or perched high upon a tree. One or two pairs have taken up their abode on trees at the head of the upper road leading to the house, and make free use of the hill side to forage for worms and caterpillars. In bright spring mornings their song is particularly clear and melodious. This species is 9½ inches; plumage of the male is deep, prominent, chesnut on the breast and under parts; above, it is bright blue on the head, shoulders and lower back; duller blue on the back, wings and tail; sides of the head, neck and remaining portions of the bird are black; bill is black; irides deep brown.

(353) OROCETES CINCLORHYNCHUS, *Blue-headed Chat-Thrush*, is a smaller bird than the last, being about 7½ inches in size. In build and habits it is more Chat-like. In winter it migrates to the plains and returns early in spring, looking fresh and brushed up. Like

the former species it is shy and seldom exposes itself. It is solitary in its habits. Its sweet, clear, song cannot be mistaken. It is one of our finest songsters, and I owe not a little to this Chat-Thrush, which was together with *Sibia* and *Poliocephalus* (201) among the first friends I made in Darjeeling. Frequently when one has been listening to its sweet carol, proceeding from a tall shady olive tree, it may be, above you and out of sight, you will presently see it fly out with wings outspread hover in midair, at a passing moth or butterfly, which appears like a speck in the sky. The insect once secured the Chat-Thrush drops like a feather lightly down again, with ease and grace into its safe retreat among the green leaves, where its song is continued. These birds feed also on berries which are still found plentiful in Darjeeling. Small bluish berries of the *Jhinginee*, *Kharani*, etc., evergreen trees, in winter, and other seasons of the year, are a favourite among most birds. Their presence is generally observed by the dark stains left on the ground. Colour of the Chat-Thrush is similar to *Erythrogastra*, above the plumage is pale blue on the head and shoulders; black on the back and wings with traces of blue; a conspicuous white patch on the wings, about the secondaries; lower back and upper tail-coverts ferruginous; tail black with a bluish tinge; breast and underparts ferruginous; bill brownish black; irides hazel.

(355) GEOCICHLA CITRINA, *Orange-headed Ground-Thrush*, is rare in the district. At times they are found on warmer slopes of the hill, but more frequently in Sikkim, near Jugdum, at about 4,000 feet elevation one would have a chance of finding it. *Citrina* feeds on the land beside scrub jungle in the outskirts of a forest. On being approached it usually hides in dense thickets near at hand. It seems disinclined to show itself. *Citrina* is 8½ inches in length. It is readily distinguished by its bluish grey or plumbeous coloured plumage, which marks out the back half of the bird; brownish orange on the head, and lower parts of the body. This peculiar distribution of colour, which two colours one would scarcely have expected to have blended so well, make it an easy species to recognize. In spring *Citrina* has a shrill plaintive song. The sexes differ but slightly in colour.

GENUS MERULA

True Blackbirds, have longer bills, compressed and notched at the tip; short and strong rictal bristles; feet strong; wings strong; tail square; bill orange coloured. All these birds are fine songsters.

(361) MERULA BULBUL, *Grey-winged Blackbird*, or *kalchachar* as it is called here, is a favorite among hill folk on account of its

fine melodious song in spring, so frequently heard in those genial sunny mornings. This ouzel is shy and prefers to remain on the trees, except when it descends, to low bushes where it is occasionally seen searching for insects and berries. These birds are made out without much difficulty chiefly by the silvery ashy-grey patch on the wings (greater coverts) and edgings of some of the quills, which show out against the black prevailing colour of this species; the lower parts of the body are pale black and ashy coloured. This *Merula* is 10¼ inches; bill is yellow and readily made out. The female has the same wing patch, a little less conspicuous; plumage is brownish-ash with a rufescent tinge. This Blackbird is often kept in confinement and becomes tame and friendly. In this state it often indulges in a clear loud whistle, running down the scale of four notes or so, when a sudden break, which becomes irksome to the listeners, when one would prefer to hear the scale thought it be,—completed. It often mimics other birds to perfection. This Primadona among birds reserves its rich mellow voice, only for a state of freedom, in its own selected leafy bower. Like most of the *Meruliдæ* these birds repair with marked regularity for a bath in jhoras, as soon as the sun is fairly warm. One sometimes comes across this *Merula* in Sikkim, and the district, near solitary Lepcha homesteads, where it seems to have become fairly tame and social. They are usually seen singly. On more than one occasion I saw this species take up its abode, where two or three solitary hill shanties stood within a few patches of cultivated ground. The Blackbird was tame and social, perhaps more so towards its rural neighbours, and appeared to take an interest in the crofters' routine of home life. Its song from among the few trees, which were about the place, sounded sweet and melodious, and gave a striking, finishing touch to some of those peeps of simple home-life, one often meets with on these hill slopes in Sikkim and around.

(362) MERULA ALBOCINCTA, *White-collared Ouzel*, is seen in Darjeeling only during winter, especially when snow storms are raging on the Singalillas. In spring when the weather becomes more congenial on the wintery hights, these birds can always be seen on the road to Tongloo and Sandakphu; and higher ranges in Sikkim, above 10,000 feet they are fairly plentiful. They feed much in bamboo jungles or near by. *Albocincta* is 10¼ inches. It is easily distinguished by the wide, white, collar round the nape and neck; rest of the plumage is black, with a little gloss. The female is dusky brown, with a greyish collar. Bill, legs and orbits yellow.

GENUS PLANESTICUS

Is a typical group of Mountain Thrushes, inhabiting, for the

most parts, high altitudes. These birds are chiefly migrants from North Asia, in the cold weather.

(365) PLANESTICUS ATROGULARIS, *Black-throated Thrush*, congregates in winter, here, in fairly big numbers. They keep much to taller trees, and feed on berries, occasionally descend to the ground for insects. *Atrogularis* is 10½ inches in length; plumage of the male is pale ashy-brown; wings and tail darker; neck, has a blackish pectoral gorget; bill and orbits yellow; lower tail-coverts, barred with brown lines; breast and under parts whitish-brown, with dark streaks.

GENUS OREOCINLA

Comprise, thrushes with strong, longish bills; wings long; toes long; birds of soft silky, spotted plumage.

(370) OREOCINCLA MOLLISSIMA, *Plain-backed Mountain Thrush.*

(371) OREOCINCLA DAUMA, *Small-billed Mountain Thrush.* The last two birds found in the district of this family, are similar to each other, in habits and general appearance; so that it will be more convenient to examine them together. Both species are gregarious, they are seen much together in companies of five or six at a time; when approached, they rise off the ground, where they have been feeding, usually in hollows on the hill side; in places where trees are plentiful. It is among the dead and decaying leaves, ferns and mosses, that they usually feed, scratching the ground like game-birds, for insects and earthworms. It is curious that a dog (hunting) will stand, to both these birds when flushed, as though they were game, which it won't do to any of the other thrushes. *Mollissima* is the smaller of the two, being 9½ inches, whilst *dauma* is 10½ inches in length. Both birds are good specimens of mountain thrushes, both in colour and habits. They ascend a good altitude in spring. I found *Mollissima* nest building beyond Jougri up to about 13,000 feet elevation. *Dauma* is usually distinguished when in company with the former species by its more conspicuously spotted back and body, also by its much smaller bill. This bird is prettily marked with black and white spots. *Mollissima* has rich olive brown plumage with an orange tinge; under parts white and tawny or dull yellow.

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D. (243) C. himalayana—Himalayan Tree-creeper.
D. (244) C. Nipalensis—Nepal ,, ,,
D. (245) C. discolor—Sikkim ,, ,,

GENUS Salpornis.

P. (246) S. spilonota—Spotted-grey ,,

GENUS Tichodroma.

D. (247) T. muraria—Red-winged Wall- ,,

SUB-FAMILY Sittinæ.

GENUS Sitta.

D. (248) S. himalayensis—White-tailed Nuthatch.
D. (249) S. leucopsis—White-cheeked ,,
D. (250) S. castaneoventris— Chesnut-bellied ,,
D. (251) S. cinnamomeoventris— Cinnamon- ,, ,,
D. (252) S. formosa—Beautiful ,,

GENUS Dendrophila.

D. (253) D. frontalis—Velvet-fronted Blue ,,

FAMILY Upupidæ.

SUB-FAMILY Upupinæ.

GENUS Upupa.

D. (254) U. epops—European Hoopoe.
D. (255) U. nigripennis—Indian ,,

Tribe Dentirostres.

Family Laniadæ.

Sub-Family Lanianæ.

Genus Lanius.

D. (256) L. lahtora—Indian Grey Shrike.
D. (257) L. erythronotus—Rufous-backed ,,
D. (258) L. tephronotus—Grey- ,, ,,
D. (259) L. nigriceps—Black-headed ,, ,,
P. (260) L. Hardwickii—Bay-backed ,,
P. (261) L. cristatus—Brown ,,
D. (262) L. arenarius—Pale-brown ,,

Sub-Family Malaconotinæ.

Genus Tephrodornis.

D. (263) T. pelvica—Nepal Wood-Shrike.
D. (264) T. sylvicola—Malabar ,, ,,
P. (265) T. pondiceriana—Common ,, ,,
P. (266) T. grisola—Arakan ,, ,,

Genus Hemipus.

D. (267) H. picatus—Little Pied-shrike.

Sub-Family Campephaginæ.

Genus Volvocivora.

D. (268) V. Sykesii—Black-headed Cuckoo-Shrike.
D. (269) V. melaschistos—Dark-grey ,, ,,

Genus Graucalus.

D. (270) G. Macei—Large ,, ,,

Genus Pericrocotus.

D. (271) P. speciosus—Large Minivet.
D. (272) P. flammeus—Orange ,,
D. (273) P. brevirostris—Short-billed ,,
D. (274) P. solaris—Yellow-throated ,,
D. (275) P. roseus—Rose ,,
P. (276) P. peregrinus—Small ,,
P. (277) P. erythropygius—White-bellied ,,

SUB-FAMILY Dicrurinæ.

GENUS Dicrurus.

D. (278) D. macrocercus—Common Drongo-Shrike.
D. (279) D. balicassius—Crow-billed ,, ,,
D. (280) D. longicaudatus—Long-tailed ,, ,,
P. (281) D. cœrulescens—White-bellied ,, ,,

GENUS Chaptia.

D. (282) C. ænea—Bronzed ,, ,,

GENUS Bhringa.

D. (283) B. remifer—Lesser Racket-tailed ,, ,,

GENUS Edolius.

D. (284) E. paradiseus—Large ,, ,, ,, ,,
P. (285) E. Malabaricus—Malabar ,, ,, ,, ,,

GENUS Chibia.

D. (286) C. hottentota—Hair-crested ,, ,,

SUB-FAMILY Artaminæ.

GENUS Artamus.

D. (287) A. fuscus—Ashy Swallow-shrike.

FAMILY Muscicapidæ.

SUB-FAMILY Myiagrinæ.

GENUS Tchitrea.

P. (288) T. paradisi—Paradise Flycatcher.
P. (289) T. affinis—Burmese ,,

GENUS Myiagra.

P. (290) M. azurea—Black-naped Blue ,,

GENUS Leucocerca.

D. (291) L. fuscoventris—White-throated Fantail.
P. (292) L. albofrontata— ,, -browed ,,
P. (293) L. pectoralis— ,, -spotted ,,

GENUS Chelidorhynx.

D. (294) C. hypoxantha—Yellow-bellied ,,

GENUS Cryptolopha.

D. (295) C. cinereo-capilla—Grey-headed Flycatcher.

SUB-FAMILY Muscicapinæ.

I.—*Muscicapeæ.*

GENUS Hemichelidon.

D. (296) H. fuliginosus—Sooty Flycatcher.

GENUS Alseonax.

D. (297) A. latirostris—Southern Brown ,,
D. (298) A. terricolor—Rufescent-brown ,,
D. (299) A. ferrugineus—Ferruginous ,,

GENUS Ochromela.

D. (300) O. nigrorufa—Black and Orange ,,

GENUS Eumyias.

I.—*Glaucomyias.*

D. (301) E. melanops—Verditer ,,

II.—*Eumyias.*

P. (302) E. albicaudata—Neilgherry Blue ,,

GENUS Cyornis.

D. (303) C. unicolor—Pale ,, ,,
D. (304) C. rubeculoides—Blue-throated Redbreast.
P. (305) C. banyumas—Horsfield's Blue ,,
D. (306) C. Tickelliæ—Tickell's ,, ,,
P. (307) C. ruficauda—Rufous-tailed Flycatcher.
P. (308) C. magnirostris—Long-billed Redbreast.
P. (309) C. pallipes—White-bellied Blue Flycatcher.

GENUS Muscicapula.

D. (310) M. superciliaris—White-browed ,, ,,
D. (311) M. æstigma—Little Blue-and-White ,,
D. (312) M. sapphira—Sapphire-headed ,,

GENUS Nitidula.

D. (313) N. Hodgsoni—Pigmy Blue ,,

GENUS Niltava.

D. (314) N. sundara—Rufous-bellied Fairy Blue-Chat.
D. (315) N. Macgrigoriæ—Small Fairy ,,
D. (316) N. grandis—Large ,, ,,

GENUS Anthipes.

D. (317) A. moniliger—White-Gorgeted Flycatcher.

GENUS Siphia.

P.	(318) S. tricolor—Brown-winged	Flycatcher.
D.	(319) S. strophiata—Orange-gorgeted	,,
P.	(320) S. leucomelanura—Slaty	,,
D.	(321) S. superciliaris—Rufous-breasted	,,
D.	(322) S. erythaca—Rusty-breasted	,,

GENUS Erythrosterna.

D.	(323) E. leucura—White-tailed Robin	,,
D.	(324) E. pusilla—Rufous-backed	,,
P.	(325) E. acornaus—Brown	,,
D.	(326) E. maculata—Little Pied	,,

FAMILY Merulidæ.

SUB-FAMILY Myiotherinæ.

I.—*Wrens.*

GENUS Tesia.

D.	(327) T. castaneo-coronata—Chestnut-headed	Wren.
D.	(328) T. cyaniventer—Slaty-bellied	,,

GENUS Pnöepyga.

D.	(329) P. squamata—Scaly-breasted	Hill- ,,
D.	(330) P. pusilla—Brown	,, ,,
D.	(331) P. caudata—Tailed	,, ,,
D.	(332) P. longicaudata—Long-tailed	,, ,,

GENUS Troglodytes.

D.	(333) T. nipalensis—Nepal	Wren.
D.	(334) T. punctatus—Spotted	,,

GENUS Rimator.

D.	(335) R. malacoptilus—Long-billed	,,

GENUS Brachypteryx.

D.	(336) B. nipalensis—White-bellied	Short-wing.
D.	(337) B. hyperythra—Rusty-bellied	,, ,,
D.	(338) B. cruralis—White-browed	,, ,,

GENUS Callene.

D.	(339) C. rufiventris—Rufous-bellied	,, ,,
D.	(340) C. frontalis—Blue-fronted	,, ,,

GENUS Hodgsonius.

D. (341) H. phœnicuroides—White-bellied Short-wing.

Whistling Thrushes.

GENUS Myiophonus.

P. (342) M. Horsfieldii—Malabar Whistling Thrush.
D. (343) M. Temminckii—Yellow-billed " "

GENUS Hydrornis.

D. (344) H. nipalensis—Large Nepal Ground- "

GENUS Pitta.

D. (345) P. Bengalensis—Yellow-breasted " "
D. (346) P. cucullata—Green-breasted " "

GENUS Hydrobata.

D. (347) H. Asiatica—Brown Water-ouzel.
P. (348) H. Cashmiriensis—White-breasted Cashmere Dipper.
P. (349) H. sordida—Black-bellied " "

GENUS Zoothera.

D. (350) Z. monticola—Large Brown Thrush.

SUB-FAMILY Merulinæ.

GENUS Petrocossyphus.

D. (351) P. cyaneus—Blue Rock-thrush.

GENUS Orocetes.

D. (352) O. erythrogastra—Chesnut-bellied "
D. (353) O. cinclorhynchus—Blue-headed Chat- "

GENUS Geocichla.

D. (354) G. cyanotus—White-winged Ground-thrush.
D. (355) G. citrina—Orange-headed " "
D. (356) G. unicolor—Dusky " "

GENUS Turdulus.

D. (357) T. Wardii—Ward's Pied- Blackbird.
P. (358) T cardis—Variable " "

GENUS Merula.

P. (359) M. nigropileus—Black-capped Blackbird.
P. (360) M. simillima—Neilgherry ,,
D. (361) M. boulboul—Grey-winged ,,
D. (362) M. albocincta—White-collared Ouzel.
D. (363) M. castanea—Grey-headed ,,

GENUS Planesticus.

D. (365) P. atrogularis—Black-throated Thrush.
D. (366) P. fuscatus—Dusky ,,
P. (367) P. pilaris—Fieldfare.

GENUS Turdus.

D. (368) T. Hodgsoni—Himalayan Missel-thrush.
P. (369) T. iliacus—Redwing Thrush.

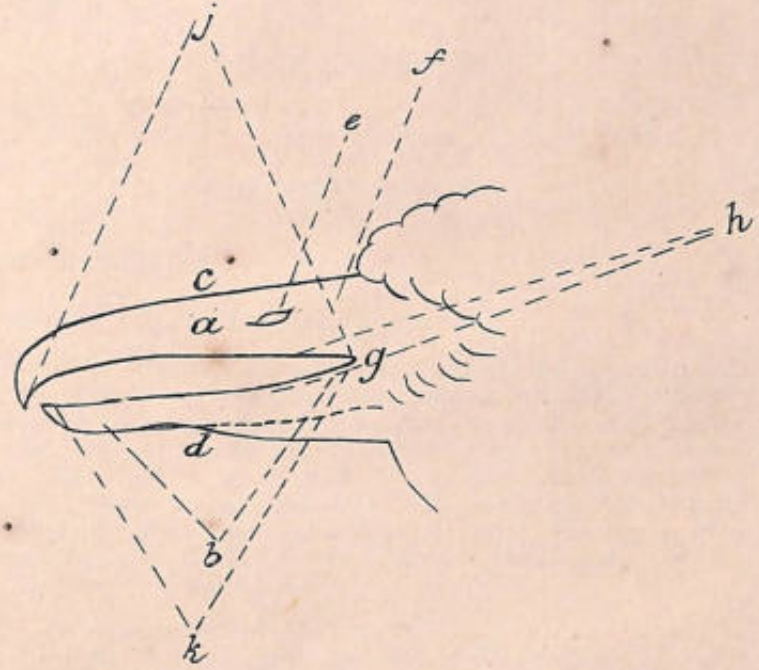
GENUS Oreocincla.

D. (370) O. mollissima—Plain-backed Mountain Thrush
D. (371) O. dauma—Small-billed ,, ,,
P. (372) O. Nilgiriensis—Neilgherry ,,

ZOOLOGICAL GARDEN
CALCUTTA.

PART II.

Fig. II.



a. Upper mandible.
b. Lower mandible.
c. Culmen.
d. Gonys.
e. Nostril.
f. Nasal fossa.
g. Commissural point.
h. Rictus.
j. Upper tomium.—pl. tomia = sharp cutting edge.
k. Lower tomium.

Kinds of bills of birds—

1, Fissirostral. 2, tenuirostral. 3, Dentirostral. 4, Conirostral. 5, Pressirostral. 6, Longirostral. 7, Cultrirostral. 8, Lamellirostral.

INSESSORES.

TRIBE DENTIROSTRES.

FAMILY MERULIDÆ

SUB-FAMILY TIMALINÆ *(Babbling Thrushes)*

This is the third and last sub-family *Merulidæ* are composed of. They are birds of arboreal habits, social, seldom seen solitary, usually in company with other birds. They have strong legs; have climbing propensities, whilst on the other hand, they are seen much on the land. Bill is compressed and notched; wings short and rounded; plumage loose and laxed, as a rule. They are birds mostly of dull sombre colors, some are richly adorned. Their eggs are generally blue, plain in most, whilst others are spotted and streaked. They comprise the following groups:—

(i) Thick-billed or Finch-Thrushes.
(ii) Jay-Thrushes, Shrike and Babbler-Thrushes.
(iii) Quaker and Wren-Babblers.
(iv) Creeper Thrushes.
(v) Laughing Thrushes.
(vi) True Babblers.
(vii) Reed Thrushes.

(i) THICK-BILLED OR FINCH-THRUSHES

These birds are chiefly found on high altitudes. Most of them are scarce and difficult to find; only a few species visit Darjeeling, and that on rare occasions. Bill is big and finch-like; legs and feet strong; wings weak and rounded; tail graduated, and fairly long; plumage soft and laxed.

(376) HETEROMORPHA UNICOLOR, *Brown Finch-Thrush*, is perhaps the best birds to seek an acquaintance with, of this curious genus of finches, with their formidable looking bills, as the previous species are not easily found. This bird is readily distinguished when met with on the higher slopes and jutting out spurs on the Singalillas. It has a biggish finch-like bill. *Unicolor* is usually seen feeding in thick bamboo jungles or bushes, by side of the road to

Tongloo and Sandakphu at an elevation of 9,000 feet and over. A number of these birds are generally observed together keeping up a cheerful chatter whilst they forage for insects. They are local in their habits and seldom move from place to place like the more migratory birds. Though they feed much among the lower branches near the ground, they frequently expose themselves, in the bright sunshine. This species is 7¾ inches; bill bright yellow; head crested; plumage ashy olive-brown; brighter coloured on the head, wings and tail.

(377) CHLEUASICUS RUFICEPS, *Red-headed Tit-Thrush*, is generally found at Chuabhunjin, across the Sikkim frontier, after leaving Phalut. Scanty groups are occasionally met with on the Sandakphu road. They are similar in habits to the former bird (*Unicolor*). In size, smaller; about 5½ inches in length. Plumage of this Tit-Thrush is olive-brown, above, with a reddish tinge; head and neck bright ferruginous; underparts of the body white; legs greenish; irides reddish brown; bill bluish white, and finch-like; short, stout and deep, sides compressed, culmen much arched.

Most of the Tit-like Thrushes are found, between Phalut and Shampu, the lake below the glacier,, which comes off Kinchinjinga, about 14,000 feet elevation.

(382) GRAMMATOPTILA STRIATA, *Striated Jay-Thrush*, is the first bird of this sub-family which makes itself quite at home in Darjeeling. Most of the previous species are not a little partial to higher altitudes. This biggish thrush is frequently met with here. It usually arrives late in the season and is seldom seen before May. Though it comes fully a month earlier, it hides away among thick jungle on the outskirts of the station. From these secluded retreats its clear, cheerful call, can be heard, on bright sunny mornings, groups of four or five of these thrushes congregate together. Once the rains have fairly set in, this bird becomes more solitary and less concerned of being observed. At such times, it may be seen, on a high branch, overhead, looking grimly, down, as you pass through a bit of forest along side of the road. I have seen this species, many a time in Bankside and Silver Spring forest jungle. Its umber brown plumage, with striated markings, is easily made out. Head has a full crest; bill is jay-like; shortish, stout fairly compressed and curved, scarcely hooked and notched at the tip, rictal bristles few and scanty; wings short and rounded 5th and 6th quills the longest; tarsus strong; feet stout; claws fairly broad; bill black; legs dull bluish; irides red brown. *Striata* is 12 inches in length. Like most of the thrushes, this bird has blue eggs; rather elongated in shape and pointed at the small end. Its nest is big, shaped like a shallow cup; constructed of moss and creepers.

GENUS GAMPSORHYNCHUS

These birds are smallish in size. Bill like the wood shrikes, of moderate length, wide at the base, deep and fairly compressed, culmen curved and well hooked at the tip and notched; vibrissæ developed; wings rounded; tail graduated and longish; tarsus fairly long and strong; claws curved.

(384) GAMPSORHYNCHUS RUFULUS, *White-headed Shrike-Thrush.* This strange looking bird is found in warmer altitudes below Darjeeling. Biggish flocks are frequently met with in the Teesta and Runjeet valleys, in particular above the suspension bridge where the forests are fairly thickly wooded, or scrub jungle not far off. They are generally seen feeding and taking a constitutional in the dense undergrowth. At times they are found on the land foraging for insects; but usually twisting and turning on slender twigs or like acrobats swinging on the taller wands of jungle plants. *Rufulus* is readily distinguished, even from a short distance away. In size it is 9 inches. This Shrike-Thrush is a somewhat aberrant form of *Timaliinæ*. It has a moderate sized bill, wide at the base, compressed; culmen curved, tip having a projecting shrike-like tooth overhanging the lower mandible; wings rounded; tail long and graduated; tarsus long and strong; claws curved. Plumage is olive-brown; head and shoulders white; tail feathers tipped whitish; beneath white tinged with ferruginous. This is a rough estimate of the plumage of this bird. The species before me is more richly coloured than usual.

GENUS ALCIPPE

Is much smaller in size, birds, with dull sombre colours. Bill short, fairly stout and compressed, culmen a little curved, hooked and notched; rictal bristles serviceable; wings rounded, of ordinary size; tail fairly short; tarsus moderate and stout, considering the general build of the bird; front toes unequal; claws curved.

(388) ALCIPPE NIPALENSIS, *Nepal Quaker-Thrush*, with its plain and sombre, unattractive colour is apt to get overlooked, as it, in company with other and more taking and pleasing birds perhaps, hops dimurely about feeding on insects. Nevertheless its mode of life and general habits are quite as interesting as other birds. This species of *Alcippe* is found more frequently, a little below Darjeeling, where it builds its nest, effectively hidden away among low bushes about 3 feet from the ground. Nest is constructed of black moss, roots and fine grasses protected, without, by dry leaves held together by thread-like roots. The eggs are delicate reddish white, with a few rich blotches of maroon red, having a reddish haze round the

bigger marks. One has some respect for a bird which has successfully foiled all comers searching for its nest. *Nipalensis* is 5½ inches in length. Plumage of this little Quaker-Thrush, above, is olive-brown on the back, wings and tail; ashy colored about the head; it has a dark line over the eyes; underparts are whitish with a reddish brown tinge; chin white; bill light yellow; irides light in colour (whitish). The next few birds are scarcely within scope of this enquiry, nevertheless a fairly connected narrative of bird life in general, appears advisable, showing an obvious affinity between the groups. Species may be introduced, casually, to give a convenient gradation to the commoner birds met with in and around Darjeeling. Wren-Babblers, though interesting groups in themselves, are chiefly birds of the plains. A few of them ascend to our elevation. Most of these Babblers frequent dense undergrowth in the forests, and are seldom seen above 4,000 feet elevation. One or two species are found on the Singalillas in summer.

GENUS STACHYRIS, *Wren-Babblers*

Are often found associating freely with some of the hard billed Flowerpeckers, either *Pyrrhoura* (629) or *Palpebrosus* (631) at a lower elevation, or *flammiceps* (633) near Darjeeling, and some of the tits and their associates on the Singalillas. Bill of birds belonging to this genus, is longish, straight, compressed, inclined to be conical in shape, scarcely notched and tip slightly bent; tail shorter than the previous bird, and showing a tendency to be graduated; tarsus stout and longish; front toes nearly equal; claws curved; hind toe and claw large; head crested with stiff plumes.

(391) STACHYRIS NIGRICEPS, *Black-throated Wren-Babbler.* This species is occasionally met with in Darjeeling, whilst on its way to Tongloo, or similar altitudes in Sikkim; but it is not common here. These birds appears to congregate in bigger numbers at a much lower altitude in winter, where they can be more frequently observed. Like members of the *Timalinæ*, *nigriceps* is arboreal in habits and is seldom found on the land, low bushy jungles are its favorite resorts, and feeds on insects. It is 5½ inches; wings are short and rounded; crest usually prominent and shows out conspicuously. Plumage is olive-brown above; head brownish black; crown whitish; a white streak reaching to lower mandibles; throat black with traces of white; beneath pale in colour, with a reddish tinge. This bird constructs a big oval nest of bamboo leaves and fibres. Eggs are pure white and glossy.

(394) STACHYRIS CHRYSÆA, *Golden-headed Wren-Babbler*, is found at a lower elevation also *Ruficeps* (393) both these birds are similar in habits to the former species. In plumage *Chrysæa*

differs, it is olive-yellow above, top of the head yellow with black streak, darker on wings and tail, which show olive edgings; lower parts of the bird are bright yellow. In size it is $4\frac{1}{2}$ inches. It is one of the prettiest birds of the group. *Ruficeps*, red-headed species is not so often met with, except at a lower elevation. This bird strikes one, as being a good strong climber. It is often seen on tallish trees at times, or doing a balancing exercise walking up obliquely whip like wands in the jungles. *Ruficeps* is $4\frac{3}{4}$ inches. Upper feathers are olive; head light reddish colour; beneath it is whitish with a fulvous tinge; breast dark yellowish.

GENUS POMATORHINUS, *Scimitar-Babblers*

These are biggish, thrush-like birds, with long thin bills. They feed on insects chiefly on the land; in their hunt they toss the leaves with their bills and scratch the ground with their feet. *Pomatorhinus* are easily made out by their long scimitar-like bills; which are long, compressed, pointed and curved; wings are short and rounded; tail broad, long and graduated; feet and tarsus long and stout; hind toe large; claws large. These birds are found at various altitudes, in thick jungle.

(405) POMATORHINUS ERYTHROGENYS, *Rusty-cheeked Scimitar-Babbler*, is more frequently met with in and near Darjeeling. These show our approach to the better known birds in the district the *Garrulax* and their affined species. Scimitar-Babblers are more frequently met with in spring and during the rains, in Birch hill forest, at times in Bankside and Silver Spring: among the trees and jungle about the house. They are again seen, on the Singalillas, in forests and thick bamboo clumps; by the side of the road to Sandakphu, in company with other and rarer species. Scimitar-Babblers seldom fly high, just skim along the surface of the land. They are usually found feeding beside heaps of decaying vegetation, tossing about dead and sodden leaves and refuse, when disturbed they indulge in a hop, skip and a jump, and dive into the nearest thicket. In spring their song is loud and cheerful, not lacking in melody. A sort of whistling call, which gets answered, not infrequently by its mate, no doubt, a good way down the hill. *Erythrogenys* is $10\frac{1}{2}$ inches in length. Colour, above, is olive-brown; lower parts white; upper parts of the breast with dusky streaks; undertail coverts and thighs bright rusty; sides of the head rusty colored and edges of the wing-feathers; legs yellow; irides pale yellow.

GENUS GARRULAX

Are birds of largish size about 12 inches. Most of these thrushes break forth now and again into discordant cries, which

sounds not unlike derisive laughter, more so when a number are congregated together. Bill is longish, fairly strong, slightly hooked and notched, tip curved; legs and feet strong; claws long; middle toe lengthened, rictal bristles longish; wings moderate 5th and 6th quills longish; tail rounded at the end and longish.

(407) GARRULAX LEUCOLOPHUS, *White-crested Laughing-Thrush*, is a fairly typical bird of this interesting and varied group of Timalinæ (Dentirostres) which has a big number of representatives in the district and in Sikkim. Some with plain and sombre plumage others again beautifully coloured and marked. They are found at various altitudes. *Leucolophus* favors from 5,000 to 6,000 feet where this species, in fairly big numbers, associates with other birds. Its whistle and song in spring we might call fairly melodious, generally proceeding from some thicket or jungle-cover close by. The noisy discordant cackle, referred to, is invariably indulged in to drive away intruders in the shape of human beings; eagles and other members of their rapacious family; usually all those who are held as the hereditary enemies of more defenceless birds. White-crested Laughing-Thrush, carries off the palm in effectively driving away those who approach too close to their charge. It is an interesting bird to watch and is typical in several respects. Little difficulty need be experienced in distinguishing it. This species has a big prominent white-crest, which it elevates in a rigid manner when either alarmed or annoyed. *Leucolophus* is 12 inches in length; head, neck and breast are pure white. It has a conspicuous black streak from the nostrils to ear-coverts; the remaining plumage is rich olive-brown, tinged with chesnut, dark on tail and quills. These thrushes feed chiefly on berries, insects and caterpillars, at times on the ground when greater facilities for food present themselves. I frequently saw these birds below Darjeeling quite at home about 4,000 feet elevation. They are found in big numbers on the Singla Spur. *Leucolophus* is supposed to now and then make a breakfast off a small bird—may be,—one can't account for tastes. I am inclined to think that this is an overhasty accusation, for small birds, generally hold *leucolophus* in high esteem and invariably appreciate its presence at their social gatherings. When you find yourself in a colony composed of warblers, tits and flowerpeckers, happily feeding and improving each golden hour, these thrushes set up a note of alarm, at your approach. I should call them the policemen of *Insessores*. A hereditary distinction held in Darjeeling by *Sibia Capistrata* (429). Over and above the wild chatter they kick up on these occasions, they have been supplied by nature with strong bills, legs and feet together with fairly sharp claws, which they can turn to good account, as weapons of defence, also, in the more harmless occupation of digging up the ground for grubs; or

holding on to thin branches and twigs of trees, which get pressed down under their weight. White-crested Laughing-Thrush is generally a bit of a nuisance when, one is anxious to learn about the habits etc. of some species you have just spotted. It is difficult to evade the sharp "on the look out" eyes of these birds. As soon as you approach within respectable distance, the noisy discordant laughter, marks your presence out to the smallest, most careless little bird. The rapid volley of abuse that is showered on your innocent pate, makes you feel a bit ashamed of yourself, and your inspection is reserved for a more convenient time. On such occasions the white crest of this thrush is raised to an alarming extent, which makes you feel certain that *leucolophus* at least means business, and woebetide *Athene Cuculoides* or *Brodiei* (79-80) should they slip noiseously in amongst them to make a morning's meal.

(408) GARRULAX CÆRULATUS, *Grey-sided Laughing-Thrush*, is found about the same elevation as the previous species. It is quieter in habits and differently coloured. In size 11 inches. The crest so prominent in *leucolophus* is lacking in this species. In colour *Cærulatus* is darker; feathers are tipped black, above, plumage is olive-brown with a chesnut tinge; wing feathers are grey; sides of the head black. Now and then a stray species of this bird finds its way up to Darjeeling; but as a rule they are uncommon here, and difficult to find owing to their habits of remaining in thick jungle cover.

(416) TROCHALOPTERON CHRYSOPTERUM, *Yellow-winged Laughing-Thrush*, used to be fairly common in Darjeeling, even now it is frequently met with in spring, near undergrowth jungle. Its whistle is often heard during "the rains;" but the bird, cares little to show itself. It feeds chiefly on the land. In spring *Chrysopterum* has a song quite as sweet as any of these thrushes. It is prettily marked and coloured. In size 10 inches; bill dusky brown; legs yellow-brown; irides red. Plumage is chiefly olive above; bright yellow edgings on the primaries; olive on back and upper tail-coverts which have a reddish tinge: wing-coverts are chesnut; neck and breast is dark prettily marked with black circular spots.

(418) TROCHALOPTERON VARIEGATUM, *Variegated Laughing-Thrush*, is a beautifully marked bird. The bright variegations are produced by white spots and streaks, displayed over various shades of black. These show out prominently and produce a pleasing effect of combination of colours. Plumage, above, is brownish grey; wing-coverts have black spots; rufous on the greater coverts; bright yellow on the primaries; tail ashy grey with yellow and white tips to the feathers; olive on the breast; underparts black.

On the wing this bird displays richer colours. This species prefers a lower elevation. It is usually found on Tukdar Spur. I saw a number, frequently, where Rungli Rungli Hât Road leaves the outskirts of the forest.

(420) TROCHALOPTERON SQUAMATUM, *Blue-winged Laughing-Thrush*, is generally made out by blue on the edges of first primaries, and black half-moon shaped marks on olive-brown on the head, neck and upper plumage; tertiaries are black, coverts ashy, also remaining quills; tail black with a greenish gloss; lower plumage olive; irides reddish brown. This bird is 10½ inches. Wings short, and rounded, which effect is produced by tertiary quills and primaries being equal or nearly so. In habits most of these thrushes differ but slightly.

(422) TROCHALOPTERON PHŒNICEUM, *Crimson-winged Laughing-Thrush*, is perhaps the most beautiful species of this group which occupy the unmeritted distinction of being garrulous owing to the characteristics of a few of their members, who ungrudgingly offer protection to small birds. By the time we reach *phœniceum* this family trait is absent. Crimson-winged Thrush is found in Sikkim, and the outskirts of Darjeeling, seldom over 6,000 feet elevation. This species is frequently met with in the forest; on road to Kalimpong. It is easily distinguished from other species, by its bright crimson wings (outer-edges of the primaries and terminal portions of secondaries and tertiaries) also ear-coverts, sides of the neck and a streak on side of the head; plumage above is rich olive-brown, some white showing itself more prominently when the bird opens its wings to fly. *Phœniceum* is 8½ inches; bill black; irides red-brown. Eggs of this species are artistically marked with dots and hair-lines, a sort of hieroglyphics, on a blue grounding more of the style of a bunting's egg, only much bigger, generally elongated oval in shape. Nests are generally found in undergrowth, about 10 feet from the ground, firmly fixed to a cluster of lateral branches. The nest is constructed of dry bamboo leaves, twigs and lined with soft fibre and black hair-like moss-roots.

GENUS ACTINODURA, *Bar-wings*

Introduce us to the short-legged thrushes. Their plumage is dense, fluffy, soft and silky. They have prominent crests. Birds, smaller in size than the foregoing thrushes. Wings have a barred appearance, tail slightly so; this is caused by broadish white lines across the wings (primaries) in a lateral position and black lines, on a reddish ground, reminding one, a little of the Wood-cock's, (Scolopax rusticola 867) wing. These lines give them a typical

appearance and their generic name. They are gregarious in habits, and are seen in company with other birds. Bill is compressed and slender, slightly curved; rictal bristles scanty and weak; wings short and rounded; tarsus short; lateral toes unequal, anterior claws long and a little curved; hind toe and claw strong and curved.

(427) ACTINODURA EGERTONI, *Rufous Bar-wing*, is seldom found over 6,000 feet. A little below Darjeeling it is frequently seen. These bar-wings generally keep to bushes and trees, where they hunt for insects, grubs and berries which they feed on. When any of the berries which they are partial to, are ripe, numbers of birds may be seen busy at work. When one tree has been gone over, or become overcrowded with other birds going, only, for the ripest fruit, they fly off to another tree. Their flight is slow, laboured and undulating, with repeated strokes of the wings, not unlike some of the true Babblers (Malacocircus). Plumage of *Egertoni* is much brighter than the next species and keeps much to warmer altitudes. It is 9 inches in length; tail is long and graduated like the *Timalinæ*, above, it is reddish-brown, on the back, shoulders of the wings and coverts; crown of the head brown with a pinkish tinge on the crest; ear-coverts ashy-brown; the primaries are more or less chesnut, some are reddish ash in colour barred with black; tail feathers are tipped white, with faint bars; breast and underparts ashy reddish brown.

(428) ACTINODURA NIPALENSIS, *Hoary Bar-wing*, differs a good deal from the former species. In color it is less attractive. It seeks the colder and less congenial heights of Sandakphu and Phalut however it is seldom found in big numbers far north, about the elevation of Tongloo it seems more attached to. *Nipalensis* is 8 inches in length. Colour, above is dull reddish brown with an olive tinge; large crest is brown; shafts of the feathers are white, which gives the bird a streaked look; a somewhat hoary appearance. The colour of these birds changes a good deal, one of the specimens before me, from Sandakphu, at a time when it was shedding its coat to make room for its winter plumage, is bright rufescent brown. It looks like one of the Spiny Babblers.

GENUS SIBIA

First of this group is one of the common Darjeeling birds, an interesting species to make the acquaintance of. Bill is long, slender and a little curved; wings ample in size for a *Timalinæ*, and rounded; tarsus longish and strong; hind toe broad and large, claws acute and curved, lateral toes unequal, but possessing a good strong grip when necessary; tongue forked, with signs of a brush at the tip, which aids the bird in its flower pecking habits.

(429) SIBIA CAPISTRATA, *Black-headed Sibia*, is perhaps the best known bird we have in Darjeeling. Sibia is much in evidence all seasons of the year, and bird life in our station would be much poorer, and bereft of its vivacity and cheerfulness if sibias would take it into their heads to emigrate in a body, like *Cruentus* (807) Green-Blood Pheasant has thought fit to do, off those captivating slopes: rich grassy downs; and shady Rhododendron forests on the Singalillas, between Sandakphu and Phalut. If I called *Gar-leucolophus*, White-crested Laughing-Thrush and some of its race the policemen of the smaller Insessoreal colony or community, I should say, *Sibia* is the head-constable, but you can't grease Sibia's palm! to let you trespass beyond forbidden ground, even though it sees you unarmed —gun or any other murderous weapon, and only wish to watch the little hide and seek among the branches, or note the peculiarities of certain birds. No! Nature in the shape of birds, seems averse or has been brought up to think so—to permit peeping into her sanctuaries. It hardly seems necessary to describe *Sibia capistrata* which ought to be fairly well known to one and all. As it appears on the branch above you, it is deep rufous on the lower back and upper tail-coverts; paler rufous, front of the neck, breast and below; head with a prominent black crest. Rufous and black are the predominating colours, overlooking brighter and darker tints; tail is rufous; bill black; irides brown. In length this species is 10 inches. Like most birds, on these hills, it has a variety of accomplishments together with a fine clear voice, nature has endowed it with. Its song, also like most birds, is varieated according to circumstances, times and seasons—a clear pleasant whistle, not unlike *tit-ee-ree, ree-ree, ree-ree*, throughout the day, winter, sun and rain. It is uttered a good deal to suit the occasion. In November the call changes to remind one of the coming cold weather; in the latter end of February, it heralds the approach of a genial spring. When on more serious business, such as "sentry go" among the branches on the confines of a busy "camp of excercise," it assumes the babbler accomplishments. In build it is like a greyhound, and can slip through the maize of branches with great ease and speed. Sibia is also a remarkably good boxer; I have seen it in spring come tumbling to the ground, landing good telling blows on the Collered Pigmy Owlet's formidable beak, and when on the ground, holding on with one leg and hitting out with the other till owlet had, had quite enough of it and flew off when able, looking much the worse for the encounter. This I afterwards, discovered, was for looking with hungry eyes at Mrs. Sibia's household, getting their first lesson in flying. *Sibia* when he likes is a perfect acrobat, it clings to flowering stocks and slender stems, head down probing the buds for lurking insects.

(430) SIBIA PICAOIDES, *Long-tailed Sibia*, is not to be seen in Darjeeling, as it is more partial to 4,000 or 5,000 feet elevation. This bird differs from the last named species, by having a longer bill and wings, much longer tail, which gives it a clumsy flight, in an undulating wavy manner, when flying from tree to tree; short distances apart. In habits generally it resembles the former Sibia; but the longer tailed species are not so active, sharp and intelligent. Both these Sibias are good acrobats, the latter birds, perhaps, not so accomplished a master at the profession, as *Capistrata*, in climbing or turning on the trapeze. *Picaoides* is common about, elevation of Kurseong. It is 14 inches in length. Bill and legs are blackish; irides red-brown; iris silvery; plumage, greyish black with a greenish tinge, darker on the head; wings with a large white spot about the secondaries; tail dusky, the feathers broadly tipped with white; lower parts of the bird are ashy in colour.

GENUS MALACOCIRCUS

True Babblers are, perhaps, not so interesting a group of birds, as the one we have just, reluctantly, parted company with, nor are they seen as far up as Darjeeling. Two species are found on the hills. Bill of these birds is short, compressed, deep and curving in shape, a slight perceptable hook at the tip which is entire, gonys ascendings, a few undeveloped rictals; wings short and much rounded, 4th, 5th and 6th quills the longest; tail broad and fairly long; tarsus stout, with protecting scutæ; feet large; claws curved. These are sombre coloured birds, grey with a rufescent tinge, having a striated appearance in most. They feed much on the ground.

(432) MALACOCIRCUS TERRICOLOR, *Bengal Babbler*, better known amongst residents in India, as the seven sisters, or Sâthbhiyon (seven brothers). They are certainly noisy birds and appear to keep up a constant altercation, at every turn of life's weary journey. There is a story current among Indians that, a king "once upon a time," called them in and solicited their services to dig a well, when the job was finished, after resting a while, they made off to the king, and demanded payment for their labour which had been agreed upon; but lo and behold some wily on-looker had hastened to the palace, and drawn the sum of money, set aside for them. The king, we learn, would not entertain their demands, and positively refused to pay over again. This is why, the noisy and animated altercation goes on, as soon as they, or their heirs, administrators and assigns, remember the vile trick which was played upon them. It seems hardly necessary to enter into a more complete description of colour of these birds, which are already well known. However a few points may be of interest. The bill is moderately short, compressed,

deep and curved, commissures partially curved, gonys ascending, which give these birds a somewhat "down in the month" appearance ; wings like true *Timaline*, short and much rounded ; tail broad and ample ; tarsus short, strong and protected by shield like scales ; claws serviceable. The colour of these birds is much like the ground they are generally found on, which offers them protection from assaults of their rougher neighbours.

(536) MALACOCIRCUS MALCOLMI, *Large Grey Babbler*,, is found as a rule a little further up our hill sides ; but seldom advances over 1,000 or 2,0000 feet elevation. These birds can generally be seen on the paths, say, preferably north east of Muthigara Road, feeding in companies of sixes and sevens, where I have more frequently observed them ; alighting off trees or bushes one after another and keeping up a constant chatter. They are bigger than the Bengal Babbler. They have similar habits and peculiarities. Like most birds of this group they are weak on the wing. Their flight is generally laboured. They usually forage within easy distance of undergrowth or road-side hedges, into which they dash on approach of danger. Nevertheless should a hawk seize any member of their company, or a friendly bird close by, the rest of the babblers, go for the offending hawk, with a will and tenacity, which invariably makes it let go. I have seen this done on more than one occasion and feel sure that the hawk, which usually darts from a long lead, off branch of a tree, a good distance away has mistaken its quarry—a large grey babbler for some other family more helpless in protecting its members, I have noticed a sparrow-hawk in its rapid descent, on more than one occasion, change its mind, as it were, in its head long dive ; when it neared the object of its quest ; which feat appears surprising, considering the blind velocity it gathered for the stroke. The usual vocation of babblers, appears to be, to turn and return, toss up in the air dead leaves lying in heaps in jungle or by sides of the road. In size this bird is about 11 inches. Legs dull yellow; irides light yellow. It feeds on beetles, grasshoppers and insects. In spring it has a pleasant song, resembling "*quæ, quæ, quæ, quho, quho.*" Colour is pale brownish grey ; head feathers with white shafts ; a little yellowish about the quills ; a reddish tinge on breast, underparts are whitish grey.

(440) MEGALURUS PALUSTRIS, *Striated Marsh Babbler*, might perhaps, be a good typical bird to halt at and examine briefly. Like the true babblers it seldom ascends over a few hundred feet in elevation, in the district. In the terai these birds are more plentiful. *Palustris* prefers marshy ground, beside water-courses and rivers. Usually at such places, where hill rivers drop down to the plains, forming wide sandy churs and water logged marshes ; fertile

breading grounds of insects in general. A warm humid atmosphere and spots unfrequented by human beings seem to suit it best. It appears to fatten on the malaria producing mosquitoes. I have occasionally seen these Marsh-Babblers above Sivoke, in all their glory, whistling, in spring, a melodious air, often heard proceeding from the thick reeds which grow at the water's edge. Marsh-Babbler is 10inches in length. Plumage, above, is bright olive-brown; wing feathers edged with brown; a fairly prominent white streak over the eye; back and scapulars olive-brown the feathers with a black stripe; crown of the head rufescent with dark lines; underparts whitish brown; breast speckled, throat white. In spring these birds rise on the wing in a typical flight, somewhat after the manner of larks, and carol a pretty song in the air, before returning to the tall reeds near the edge of the water. This manner of song is unique for a *Timaline*. It is undoubtedly a beautiful outburst, pleasant to hear and witness. It is not unusual to see Flycatchers, etc., rise vertically after insects. The sky-larks and a few other birds rise and soar from an exuberance of life; I detected no winged insect draw forth the Striated-Babbler. Like the Larks it appears to be more a buoyant out burst of joy and gladness. This bird builds, in low bushes, near the ground, its nest of grass, well worked together, with roots and hair entwined. Eggs are beautifully glossy, bright greenish blue.

The Reed-birds are out of our range, as they are not found in the district.

FAMILY BRACHYPODIDÆ (*Short-legged Thrushes*)

These birds, are mostly, of rich and brilliant plumage. Excepting *Pycnonotinæ* which are black in colour with a patch here and there of bright red and yellow, as the case may be. Whilst on the other hand such birds as the Green bulbuls and *Irenina* are beautifully coloured and prettily marked. Legs and feet of birds of this family are typically short and more suitable for perching; wings usually long. They comprise Bulbuls and Orioles. Many of the species of short-legged Thrushes are to be found in Darjeeling, more so in the district. They are found in most parts of India; feed much on insects, and show a partiality for fruit and berries.

This family is divided into :—

(1) PYCNONOTINÆ ...	...	True Bulbuls.
(2) PHYLLORNITHINÆ	...	Green ,,
(3) IRENINÆ ...	...	Blue-Birds.
(4) ORIOLINÆ ...	...	Orioles.

SUB-FAMILY PYCNONOTINÆ *(True Bulbuls)*

Are a well known and characteristic family of birds in India. Bill is short, straight and depressed at the base ; rictal bristles more developed than former group ; tongue typically bifid in some, slightly pencilled in a few ; plumage is dense and puffy, in most of the species. In a number of these birds, an intermixture of hair-like, undevoloped feathers are found on the head and nape, more particularly, *Criniger*. True Bulbuls are arboreal in habits, preferring better wooded portions of the district, but they frequently visit more open country and come close to human habitations, gardens, and orchards. Whistle of this bird is a rich toned warble or call which has gotten for it, the Persian name bulbul meaning nightingale.

Genus Hypsipetes, head crested with lanceolate shaped feathers ; bill lengthened and fairly strong, culmen slightly arched ; wing long 4th and 5th quills the longest; tail more square in shape and longish; feet and legs very short ; a few weak rictal bristles *Hypsipetes* present two types of birds, first has red bills with dark (black) plumage and the second, dark bills ; tail squarish in shape, with lighter plumage, more olive coloured in most species.

(444) HYPSIPETES PSAROIDES, *Himalayan Black Bulbul*, Phakkipho of Lepchas is often met with below 5,000 feet I saw this bird occasionally on Ging Spur and more wooded slopes on sides of the hills. It is 11 inches in length ; plumage with grey on the wings and back ; the lower parts of the bird are lighter ; undertail coverts show a good deal of white ; crest black ; quills and tail tipped with black. Bill bright red ; legs red ; irides reddish brown. They feed on wild fruit and berries ; at times on pollen, insects and sweet juices in flowers and blossoms.

(447) HYPSIPETES MCLELLANDI, *Rufous-bellied Bulbul*, seldom ascends over 2,000 feet elevation ; but can usually be observed in biggish numbers in the Teesta and Runjeet valleys, generally perched on trees by the river side. In spring these birds have a loud clear warbling call, pleasant to hear. In size this species is about 9 inches ; wing expanse 13 inches. The bright reddish brown on the breast, aids one to distinguish it, with yellowish colour on under tail-coverts, this latter marking is easier noticeable when the bird is not far off or on a tree over-head. Plumage, above, is olive-green ; ear-coverts brownish ; head brown, crest with centres of the feathers pale ; underparts of body are whitish ; bill dull olive ; irides light brown

(448) HEMIXOS FLAVALA, *Brown-eared Bulbul*, is found a little below Darjeeling. I have seen these birds many times on trees beside Takvar Road also near Pashok on the way to Kalimpong. It is generally found about 5,000 feet elevation. On rare occasions I

have observed one or two of this species on Birch Hill forest and Silver Spring feeding on berries. *Flavala* is 8½ inches in length. Plumage is ash coloured above, crown of the head grey, crest, not so full as *Hypsipetes*, pointed and longish, lanceolate feathers; wings and tail darker in shade; you will, doubtless, observe the greenish yellow edgings to exposed parts of the secondaries; a black streak on the sides of the head, more so in well marked specimens you come across; ear-coverts are typical, being silky brown; breast of this bird is ashy in colour, and lower parts white; bill black, arched and slender; tail is long and square shaped. There is but little to add about the general habits and characteristics of these well-known birds.

GENUS ALCURUS, have striated plumage, and differ a little from the foregoing. Bill is stronger and wider at the base, rictals weak; outer tail feathers slightly shorter; head crested as in other groups.

(449) ALCURUS STRIATUS, *Striated Green-Bulbul*, could be placed first among our commoner bulbuls, as it is fairly plentiful in spring in Darjeeling and during the rains. It is frequently met with in the woods round the station, but is seldom seen beyond the elevation of Ghoom forest. In habits it is much the same as other bulbuls. Usually seen on trees about the place, and often comes close to the house. They associate in small flocks of about half a dozen or more in number. This striated Bulbul feeds chiefly on fruit and berries. It is not a little partial to wild cherries; occasionally you see them snapping at a passing termes or smaller sized moth. When it first arrives at a certain locality it seems shy and easily takes to flight; but when it gets more accustomed to the surroundings, near human dwellings it becomes tamer and descends to perch on our smaller trees, where it can be observed to advantage; on the tip of a bush or tree, singing, may be, or warbling a cheerful and melodious song, musical and full of rich notes, which can be made out quite a quarter of a mile away, harmonising the harsher calls of other birds. A love for Indian music may be an acquired taste; but one must needs be pretty dull of hearing not to appreciate the warble of Himalayan birds. Striated Green-Bulbul can be made out by its more typical colouring. In size it is 8¾ inches; plumage, above, olive green turning to ashy tints; white narrow streaks on the head, back and below the chin; under tail-coverts are bright yellow; breast white tinged with yellow; crest with dark green pointed feathers, or in some species olive brown.

GENUS CRINIGER, is a fairly typical group in structure, colour, and habits not a little. These birds display a good deal of yellow markings. Bill stronger and deep, of moderate length, culmen curved; rictal bristles long; tail fairly even, outer-feathers shorter; head crested, hair like feathers more distinct on the head and nape.

(450) CRINIGER ICTERICUS, *Yellow-browed Bulbul*, comes into Darjeeling on rare occasions. Usually found at an elevation of 5,000 feet where these birds are fairly plentiful. They associate in small flocks. This *Criniger* has a rich melodious call oftener heard in spring. When perchance one is on a long tramp out of Darjeeling, or an excursion to a lower elevation, to one of the tea gardens ; or a trip to Phalut along Ghoom forest. This species is fairly common, where road along Nepal frontier dips down to below 5,000 feet at Manihungin, before you negotiate those steep ziggags on the brow of Singalillas, near one of the first passes, met with into Nepal. This species is 8 inches in length ; yellow is the predominating colour, which meets the eye on viewing this bird, with a pretty stand up crest. The plumage, above, is olive-green ; it has a bright yellow superciliary streak ; wings and tail have a dark tinge ; lower parts of the bird are bright yellow ; bill black, longish, strong, culmen arched ; irides bright red.

(451) CRINIGER FLAVEOLUS, *White-throated Bulbul*, could be mistaken for last named species, more so from a distance. This bird has a greater display of yellow than *ictericus*. It is 8½ inches in size ; upper plumage is olive yellow ; wings and tail brown ; cheeks whitish grey ; lower parts are bright yellow. Bill is bluish in place of black in *ictericus* ; legs lighter in colour ; crest also is larger. These few remarks will aid in separating these two species, when observed, which are similar also in habits and characteristics. Lepchas call *flaveolus*, kussopeechiop-pho, which is an uncommonly close representation of the low mellow whistle of *flaveolus*, so much so, that were you to whistle it say at Manibhunjin, or in the woods below Darjeeling, I doubt not that you would draw the attention of *flaveolus*, for I have seen it prick up its ears, when any one practicing it has got the proper key or pitch, whilst on the other hand yellow-browed species will not turn a feather.

GENUS IXOS, *Bush Bulbuls*, are more difficult birds to meet as they are chiefly found in well wooded parts of the district, a good bit lower elevation than Darjeeling. In Teesta Valley or on the road to Kalimpong, one, is more likely to observe these birds and listen to their pretty warble. Some species are common in the plains.

GENUS OTOCOMPSA, Birds with bright yellow (chiefly) under tail-coverts ; head black, crest more erect. Bill fairly short, a little curved ; plumage, above brown.

(458) OTOCOMPSA LEUCOGENYS, *White-cheeked Crested-Bulbul*, This does not mean that the other species are not crested ; but merely that the crest is more prominent, and well under control of the bird ; that it takes much pleasure in displaying it, when its

pugnacious nature has been roughened. *Leucogenys* fairly common at an elevation of 5,000 feet which appears to be the limits of ascent of not a few of the *Bulbuls*. *Leucogenys* is about 8 inches in length. It has bright yellow lower tail-coverts ; head and crest brown ; a white streak behind the eyes ; black about the sides of the head ; ear-coverts white ; quills dusky brown ; upper plumage yellowish brown ; tail tipped white, feathers brown and black ; breast light brown, and below whitish. These *Bulbuls* fly high and keep much to the taller trees. They are active and restless in their habits. Lepcha name is Mánghlo-kur.

GENUS PYCNONOTUS, there birds have strong bills, longish, fairly curved ; rictal bristles more developed ; legs and feet strong ; squarish tails, under tail-coverts red. Plumage darker than the foregoing groups excepting *Hypsipetes* and lacking the pointed stand up crest.

(461) PYCNONOTUS PYGÆUS, *Common Bengal Bulbul*, is frequently seen in Darjeeling. They make their appearance early in spring. It seems scarcely necessary to figure so well-known a bird as, the bulbul. If one, is not acquainted with it in its state of nature, little difficulty will be experienced in finding a caged specimen, in captivity. *Pygæus*, in its natural surroundings, usually frequents villages and homesteads, whether in the plains or in the district ; they are seen in towns, where gardens and orchards abound, in preference to the woods and jungles, where it generally repairs to in the breeding season. It is often met with near human habitations and cultivated lands where the chances of a forage present themselves. In the hills it shows a preference for some of our berries and softer varieties of fruits. This species is often found, in partial captivity, carried about on the wrist of its owner, secured with a string fastened round the wings, below, shoulders of the bird. The string is about a foot or two long at the end of which is a red tassel. Red being the colour, supposed to turn the bulbul's ire, and put it in a good fighting humour. This form of contest is frequently indulged in, in the plains, where two trained and veteran bulbuls, which have displayed considerable prowess on former occasions, go for each other, in right good earnest, using all the weapons of offence and defence, which nature has endowed them with, usually flicking each other with rapid strokes of the wings. It is hard to conceive where the pleasure or diversion comes in, to watch, such forms of sports. However this practice is dying out with the exit of some of the old Mogul customs in the east. *Pygæus* grows exceedingly tame and flies about the house when liberated and soon appreciates acts of kindness shown to it.

GENUS, PHYLLORNIS, *Green Bulbuls*, have longish bills, culmen more curved, tip bent and notched ; wings longish 4th quill longest ; tail shorter than most of the groups. Plumage is a bright verdure green, with patches of blue and yellow markings. These bulbuls are better known as *chloropsis*.

(463) PHYLLORNIS JERDONI, *Common Green-Bulbul*, is a rich and beautifully coloured bird, which reminds us not a little of the pretty *Irena*, Fairy Blue-Bird (469). One feels that, you have got out of the province of the *Pycnonotinae* on viewing these bright coloured Green-Bulbuls or *Chloropsis* as I prefer to call them. They approach, in habits generally and in colour not a little, *Ireninae*. This handsome *Phyllornis* is found, as a rule at an altitude of about 5,000 feet. It is generally seen in pairs feeding on insects and berries. I saw this species of *Chloropsis*, occasionally on the Tukdar Spur where it dips down to the warm valleys, through which Teesta river flows. It is 7¼ inches in length. It has leaf-green plumage ; shoulders bright blue ; yellow and hyacinth-blue streaks on the side of the head ; throat and gorget black, bordered with yellow. In South India this bird is called "the jewel of the forest." The Green-Bulbul has a pretty song like most of the family. It is occasionally seen in Darjeeling in warm summer days.

(465) PHYLLORNIS AURIFRONS, *Gold-fronted Green-Bulbul*, is also met with in Sikkim and lower altitudes below Darjeeling. In spring it is frequently found about 4,000 feet ; but it is more abundant in Runjeet Valley. Caged specimens are occasionally seen for sale in Calcutta, at the bird market in Territta Bazar where I saw one or two, a few years ago, where this arboreal bird seemed to take kindly to those dark, dismal, dank cellars. *Aurifrons* is 8 inches ; wing extent 12 inches ; bill black ; legs and feet bluish ; irides brown. In colour, verdure green predominating ; verdigris blue on the wings ; brilliant golden orange on crown of the head and breast ; black in front of the neck, with yellow edgings ; wings and tail grey.

(465) PHYLLORNIS HARDWICKII, *Blue-winged Bulbul*, is perhaps more frequently met with, than former species. It is usually found without much difficulty on Nepal side of the district, and Little Runjeet valley. This *Chloropsis* is richly coloured. It is one of the most beautiful species of this group. Typically, green is perhaps not quite so prominent, owing to the lavish display of yellow and blue. In size it is 8 inches. Colour of the male is, green above ; underparts rich orange ; head and neck tinged yellow ; it has a brilliant smalt-blue streak on the sides of the head (face) and shoulders, which are verdigris blue ; wings and tail purple ; breast black with a dark purple gloss. Female, differs but slightly in richness of colour. When you catch a glimpse of this bird, with its beautiful

tints of colours, as it slips with ease through upper branches of trees in persuit of some of the swifter insects on the wing, the sight is surprising and quite repays a few minutes observation. Now and then it opens its wings to hover in the air or fly off to another tree. The momentary flashes of azure or turquoise blue or the tints of yellow are most striking. This bird looks extremely graceful, as it slips with ease and rapidity through the branches of trees or big bushes, in their chase after winged termites and moths, halting now and then to examine a likely place where insects might be secreted. It seems to display but little reverence for rare and beautiful butterflies. This *chloropsis* has a pretty song. It is seen to no small advantage in the orange groves in Sikkim, when the blossoms are yet on the trees.

GENUS IRENA, or *Fairy Blue-Birds*, are of glistening blue colour: legs and feet short; bill more depressed than proceeding groups, strong and of moderate length, culmen raised, tip toothed and slightly hooked; rictal bristles present; wings longish 3rd and 4th quills the longest; tail moderate; *tarsus* very short; claws short and curved.

(169) IRENA PUELLA, *Fairy Blue-Bird*, is one of the handsomest birds found in the district. Its brilliant plumage cannot easily be overlooked. *Irena* is rare and difficult to find at times. Some years they are more frequently observed. I have noticed them, now and again, between 4,000 to 5,000 feet fairly high up among thick branches of timber trees, which hillmen call *panisaj*. I cannot account for this partiality, also *simul* (cotton,) trees when in flower, the warmer portions of Sikkim and the district. Puella is 10 inches in size; plumage, above of male is a brilliant glistening cobalt blue; lower feathers are deep velvetty black; wings and tail also black; bill is stout and longish, wider at the base than proceeding birds; irides ruby coloured. Fairy Blue-Bird has a fine rich song. It feeds chiefly on fruit and nectar of flowers, insects at a push.

SUB-FAMILY ORIOLINÆ, (*Orioles*)

There appears to be a fairly big step between Blue-birds and Orioles, nevertheless they have several qualities in common, into which we need not enter at present. Orioles are so well-known that a description of them seems hardly necessary, except an aid to distinguish the different species. Their prominent or rather typical, bright yellow, prevailing colour marks them out, readily enough

GENUS PHYLLORNIS, *Green Bulbuls*, have longish bills, culmen more curved, tip bent and notched ; wings longish 4th quill longest ; tail shorter than most of the groups. Plumage is a bright verdure green, with patches of blue and yellow markings. These bulbuls are better known as *chloropsis*.

(463) PHYLLORNIS JERDONI, *Common Green-Bulbul*, is a rich and beautifully coloured bird, which reminds us not a little of the pretty *Irena*, Fairy Blue-Bird (469). One feels that, you have got out of the province of the *Pycnonotinae* on viewing these bright coloured Green-Bulbuls or *Chloropsis* as I prefer to call them. They approach, in habits generally and in colour not a little, *Ireninae*. This handsome *Phyllornis* is found, as a rule at an altitude of about 5,000 feet. It is generally seen in pairs feeding on insects and berries. I saw this species of *Chloropsis*, occasionally on the Tukdar Spur where it dips down to the warm valleys, through which Teesta river flows. It is 7¼ inches in length. It has leaf-green plumage ; shoulders bright blue ; yellow and hyacinth-blue streaks on the side of the head ; throat and gorget black, bordered with yellow. In South India this bird is called "the jewel of the forest." The Green-Bulbul has a pretty song like most of the family. It is occasionally seen in Darjeeling in warm summer days.

(465) PHYLLORNIS AURIFRONS, *Gold-fronted Green-Bulbul*, is also met with in Sikkim and lower altitudes below Darjeeling. In spring it is frequently found about 4,000 feet ; but it is more abundant in Runjeet Valley. Caged specimens are occasionally seen for sale in Calcutta, at the bird market in Territta Bazar where I saw one or two, a few years ago, where this arboreal bird seemed to take kindly to those dark, dismal, dank cellars. *Aurifrons* is 8 inches ; wing extent 12 inches ; bill black ; legs and feet bluish ; irides brown. In colour, verdure green predominating ; verdigris blue on the wings ; brilliant golden orange on crown of the head and breast ; black in front of the neck, with yellow edgings ; wings and tail grey.

(465) PHYLLORNIS HARDWICKII, *Blue-winged Bulbul*, is perhaps more frequently met with, than former species. It is usually found without much difficulty on Nepal side of the district, and Little Runjeet valley. This *Chloropsis* is richly coloured. It is one of the most beautiful species of this group. Typically, green is perhaps not quite so prominent, owing to the lavish display of yellow and blue. In size it is 8 inches. Colour of the male is, green above ; underparts rich orange ; head and neck tinged yellow ; it has a brilliant smalt-blue streak on the sides of the head (face) and shoulders, which are verdigris blue ; wings and tail purple ; breast black with a dark purple gloss. Female, differs but slightly in richness of colour. When you catch a glimpse of this bird, with its beautiful

tints of colours, as it slips with ease through upper branches of trees in persuit of some of the swifter insects on the wing, the sight is surprising and quite repays a few minutes observation. Now and then it opens its wings to hover in the air or fly off to another tree. The momentary flashes of azure or turquoise blue or the tints of yellow are most striking. This bird looks extremely graceful, as it slips with ease and rapidity through the branches of trees or big bushes, in their chase after winged termites and moths, halting now and then to examine a likely place where insects might be secreted. It seems to display but little reverence for rare and beautiful butterflies. This *chloropsis* has a pretty song. It is seen to no small advantage in the orange groves in Sikkim, when the blossoms are yet on the trees.

Genus Irena, or *Fairy Blue-Birds*, are of glistening blue colour : legs and feet short ; bill more depressed than proceeding groups, strong and of moderate length, culmen raised, tip toothed and slightly hooked ; rictal bristles present ; wings longish 3rd and 4th quills the longest ; tail moderate ; *tarsus* very short ; claws short and curved.

(469) Irena puella, *Fairy Blue-Bird*, is one of the handsomest birds found in the district. Its brilliant plumage cannot easily be overlooked. *Irena* is rare and difficult to find at times. Some years they are more frequently observed. I have noticed them, now and again, between 4,000 to 5,000 feet fairly high up among thick branches of timber trees, which hillmen call *punisaj*. I cannot account for this partiality, also *simul* (cotton,) trees when in flower, the warmer portions of Sikkim and the district. Puella is 10 inches in size ; plumage, above of male is a brilliant glistening cobalt blue ; lower feathers are deep velvetty black ; wings and tail also black ; bill is stout and longish, wider at the base than proceeding birds ; irides ruby coloured. Fairy Blue-Bird has a fine rich song. It feeds chiefly on fruit and nectar of flowers, insects at a push.

Sub-Family Oriolinæ, (*Orioles*)

There appears to be a fairly big step between Blue-birds and Orioles, nevertheless they have several qualities in common, into which we need not enter at present. Orioles are so well-known that a description of them seems hardly necessary, except an aid to distinguish the different species. Their prominent or rather typical, bright yellow, prevailing colour marks them out, readily enough

when amongst branches of the taller trees. The species differ from each other, either by a richer or more brilliant display of yellow, or a more liberal supply of black markings. The difference in colour, more so, are signified by the names of each species. Bills of Orioles are longish, strong and thrush-like, slightly curved and hooked at the tip also notched which, together with its structure, gives it a place amongst *Dentirostres* ; tail is fairly short ; *tarsus* short, as we observed in the short-legged thrushes ; feet small ; claws curved. These birds have distinctly arboreal habits and display not a little partiality for well wooded parts of the district. All the species have not predominating yellow colour. Maroon Oriole differs in this respect.

This Sub-family *Oriolinæ* are divided into :—

(i)—Golden Orioles.

(ii)—Black-naped Orioles.

(iii)—Black-headed Orioles.

(iv)—Maroon Orioles.

These groups differ from each other, in structure, size and colour ; but are similar in habits generally. They have arboreal tendencies, perch and slip silently through, with much facility, the branches of trees. They never descend to the ground ; the accomplishment of hopping about is beyond their scope, as their short tarsi bones are better adapted for perching. A number of species, frequent the forests, chiefly at foot of the hills, extending up the basins of bigger rivers with their tropical surroundings.

Orioles are well distributed throughout the plains.

GOLDEN ORIOLES.

(470) ORIOLUS KUNDOO, *Indian Oriole*, you must already be familiar with, under the name of "mango-bird," owing to its associations with the mango season, and advent of a good crop it is supposed to herald, when these birds are seen in bigger numbers. Doubtless, they destroy effectually, destructive caterpillars and insects, which might have at its earlier stage, spoilt the crop. However we have no scientific data, as to the merits of these prognostications. This Oriole is 9½ inches long ; irides rich ruby ; predominating colour yellow ; male, the wings black with a yellow bar on primary coverts, and a few of the quills ; tail showing a good deal of black with broad yellow tip ; it has a black stripe on the side of the head, from bill and past the eyes ; bill lake-red ; legs plumbeous.

Orioles feed a good deal on soft fruit and berries, chiefly wild and growing on the outskirts of forests, also on caterpillars and insects. The clear sonerous call or whistle of the common Oriole must undoubtedly be well-known ; a sort of *pee-ho, pee-ho* cry at intervals, sweet and far reaching. It can clearly be heard in the district at times above the roar of the cascades and rushing hill streams. Oriole's nest is typical, built in a pendent manner near the end of a thinish branch. Eggs are white, with black spots, not unlike eggs of some of the Drongos.

(471) ORIOLUS INDICUS, *Black-naped Indian Oriole*, is found in the Terai. It seldom seems to get much beyond foot of the hills, in the district. It is a shade larger than previous species, being about 10 inches and differs in its markings. It is bright yellow and has a sort of black tippet over the neck reaching down to the nape, narrowing at the bill ; tail black tipped with yellow ; wings black, greenish yellow about the secondaries, part of the tertiaries and tips of primaries ; it has a bright yellow wing patch. These few general marking will suffice to distinguish this species.

(472) ORIOLUS MELANOCEPHALUS, *Bengal Black-headed Oriole*, is not found in the district. It is plentiful and well distributed in the plains, where it is usually observed feeding in thinly wooded parts of the country, or visiting gardens, chiefly avenues. In size it in 9½ inches ; plumage is rich yellow above ; head and neck deep black, also breast, and wings, which have a yellow band about primary coverts ; tail yellow, but lighter in shade with a few of the inner feathers with a broad black band, tipped yellow ; lower parts of the body are pale yellow.

(474) ORIOLUS TRAILLII, *Maroon Oriole*, here you have quite a different type of species. Maroon takes the place of bright yellow which we found to be the prevailing colour of Orioles. In size it is 11½ inches in length. This bird ascends a much higher altitude than any of the other Orioles. In spring it used to be frequently seen in Darjeeling but of late years they have been getting scarcer. Like other species they keep much to high branches of trees, and prefer better wooded portions of the district. Maroon Oriole has a rich and sonorous call which is, usually, heard to advantage in spring. It feeds like the cuckoos much on little green and hairy caterpillars which abound in these parts in April, occasionally on insects and berries. Plumage of these birds is a pretty, glossy maroon red, or brick colour ; head, neck and wings are black, nicely glossed ; tail more a brick colour and lighter in appearance ; bill light plumbeous, legs darker ; irides light yellow. This bird at first sight looks like one of the *merulinæ* thrushes ; but a closer inspection does not fail to distinguish it by its typical markings.

FAMILY SILVIADÆ

We will now turn our attention to a big and varied group of small sized birds. These comprise, the most part of some of the most interesting and typical in sub-families. They have long and strong tarsi ; feet suitable both for perching on bushes and trees, or hopping with equal facility on the land, should they feel, so disposed to do. They feed much on insects, occasionally on flowers, buds and fruit. We find them divided into the following groups of sub-families :—

I.—SAXICOLINÆ	...	Stone-chats and wheat-ears.
II.—RUTICILLINÆ	...	Red-starts and Bush-chats.
III.—CALAMOHERPINÆ	...	Grass-warblers.
IV.—DRYMOICINÆ	...	Wren-warblers.
V.—PHYLLOSCOPINÆ	...	Tree-warblers.
VI.—SYLVIINÆ	...	Grey-warblers.
VII.—MOTACILLINÆ	...	Wagtails and Pipits.

I.—SAXICOLINÆ, Stone-chats, etc., most of the birds of this group are friendly and social, generally having a rich toned warble. They prefer rocky open country and are usually seen singly hopping and picking up insects and bits of crumbs and rice lying about the compound and yard near the house, provided there are a few bushes near at hand to make for, as a sort of half way place of safety, if attacked or molested. Bill is stout ; wings longish ; tail generally short ; *tarsus* stout and longish ; claws curved ; feet better adopted for the ground than perching.

(475) COPSYCHUS SAULARIS, *Magpie-Robin*, or Dayal as it is called in the plains. Lepcha name is Zannid-pho. This bird is seldom or ever seen in Darjeeling. It rarely ascends over 5,000 to 6,000 feet. I see from an old note of mine, that Magpie Robin was observed in a certain year in March as far up as 6,500 feet ; but this is exceptional. It seems more at home in the valleys in Sikkim and the Teesta river. It is fairly common in the *Sal* forests at the foot of the hills. This species was named, originally, from the *Sal* trees it was first discovered among, and Linnæus mistook *Sal* for Sol the Sun. Magpie Robin must be fairly well-known. It is $8\frac{1}{2}$ inches in length. Plumage of the male, above is glossy blue, on the head, neck, breast and wings ; abdomen and under tail coverts are white also a few of the outer tail feathers. Magpie Robin is often kept in confinement, more so by Indians owing to its pretty warble,

and its readiness to learn short phrases and snatches of some familiar song. A few years ago, in the plains I heard a poor little captive species of this bird, which sweetly warbled in a far away voice "Nabizee rozi da do", literally translated, would be "Give us this day our daily bread", which sounded quite pathetic, seeing the surroundings and proceeding from such a helpless, tiny, thankful, being (mortal), with irresistable pleading eyes.

(476) KITTACINCLA MACROURA, *Shama*, is perhaps one of the richest songsters we have, even surpassing Dayal in sweetness of voice. Its little vesper hymn carries with it the solemnity of the place and hour ; but it seems oftener in confinement that we have seen it than when, in its native bower singing its, low melodious song in Sub-Himalayan forests. At times in Terai jungles. There is one bird I think, which surpasses, Shama, in richness of song ; but I shall mention it when I come to the warblers. You have to enter dense stately forests in the Terai to see and hear Shama at its best. This species is 12 inches, owing to its lengthened tail which is quite 8 inches long, otherwise it is about as small as Magpie Robin. The plumage is glossy black on the head, neck, back and wing coverts ; breast ; belly and under tail coverts are deep chesnut ; tail black tipped with white ; bill is black ; irides deep brown.

(477) MYIOMELA LEUCURA, *White-tailed Blue-chat*, is somewhat after the *copsychus* style and build, robin-like in habits, though perhaps not so friendly. This Blue-chat is to be seen in Darjeeling in spring and during the rains. Its song is not unlike a high pitched, flute-like tone, of three notes, the last prolonged. This song we might call it, is often heard from May to July proceeding from some thick tangled brush-wood jungle, where it frequents, but seldom shows itself out in the open. When it makes a change of perch or lands on the ground, it usually jerks up its tail in the manner of a Redstart or Chat. Its round black body with pure white tail generally makes it, easily distinguished. The loud clear flute-like call from a perch on lower branches of a tree or shrub, is often misleading, and one, imagines that, the sound to be, proceeding from a much further distance from where the bird really is. *Myiomela* is often seen in the vicinity of wild raspberry, bushes, picking off ripe fruit in company with sibias, hill-tits and flower-peckers. It is $7\frac{1}{2}$ inches in length. Colour of *Myiomela* as a whole shows black from a distance ; but a closer examination proves it to be dark indigo blue. White of the outer-tail feathers shows out prominently. This bird seems to prefer high altitudes. It can be met with up to the elevation of Tongloo. Eggs of this Blue-chat are oblong and much the same grain, colour and texture of shell as *Niltava Sundara's* egg, in particular. I saw a nest not so long ago in

the thick Bankside jungle (undergrowth) at head of Kagjhora. I shall pass over, the next few species, although the temptation is to halt, a few minutes to examine some of these Robins, etc., but we must turn our attention to species, more easily found on our hill sides ; so we will take up in preference.

(486) PRATINCOLA FERREA, *Dark Grey Bush-chat*, which is one of our more familiar Darjeeling birds. This chat is friendly and fairly tame, when met with, usually outside of denser brushwood cover, in which it prefers to spend no small portion of the day, occasionally by the side of one or other of the small hill-streams. You will sometimes find it quietly resting on road palings. At times, it is seen, on telephone or electric-light wires, from which perch it makes short sallies after insects on the wing, which it secures, much like in manner of a flycatcher and usually returns to the same perch, as do *Muscicapidæ*, so that care must be taken not to mistake it for one of the species of flycatchers. Dark Grey Bush-chat has a longer *tarsus*, consequently is able to stand more erect, in Redstart fashion. In size it is 5¾ inches ; bill black ; irides brown. Male is dark ashy grey, feathers streaked with black ; colour is fader towards the tail ; a white supercilium (behind the eyes) shows prominently out against the black lores (space in front of the eyes) and ear-coverts ; beneath, breast and lower parts of the body are white, with a brownish tinge ; throat whitish ; tail above black with narrow white edgings to the feathers, outer tail feathers are whiter in appearance ; wings dusky with a white wing patch only observed when the bird is flying or fluttering about the branches. Female is brown, above, with tints of ferruginous.

GENUS SAXICOLA, are of two types of colours, first pied ; the second, Wheatear, of high altitudes showing more white plumage. Bill of Saxicola is slender, straight, compressed, having a blunt notch, rictals undeveloped and feeble ; wings longish and pointed 3rd, 4th and 5th quills the longest.

(490) SAXICOLA LEUCOMELA, *White-headed Stone-Chat*, though scarcely a Darjeeling bird, as it is rarely seen here. Several opportunities will be had of observing it at and around Tongloo, to which altitude it retires to breed. In size it is 6½ inches. In general appearance, a mixture of black and white ; above, neck and breast is black ; upper tail coverts white ; breast and crown of the head white with a greyish tinge ; tail black with distributions of white. In May you will have comparatively little trouble, in seeing the mother bird attending to her brood of diminutive little ones, tormenting her with their noisy cries, and much flapping and fluttering of wings, months opened to their utmost extent insisting on the next morsel she has just been fortunate enough to secure, all seem to have claims

equally as good, and one wonders, how the mother can remember who has had the last mouthful, for she invariably has some scientific method unknown to mortals. Male bird appears to take matters more leisurely for he is observed, quietly hopping about some twenty yards off, and when a worm is secured he flies in amongst them, with a well calculated dash, shoves caterpillar down the throat of one it is, or it may be, intended for, and is off again with a chirp of satisfaction, as much as to say "keep them on the trot old girl, I must be off, for my nerves can't stand this noise and racket!" In general appearance this stone-chat is a sooty black; lower breast, thighs and undertail coverts white, a good part of the tail is the same, with lateral feathers broadly tipped white.

SUB-FAMILY RUTICILLINÆ

These birds are not unlike the last mentioned group in habits generally. They are slender in form and graceful in build, with longer tarsi and feet though Stone-chats. In colour some groups display, bright rufous, more or less, others again ashy grey, dull blackish blue or plumbeous. *Ruticillinæ* usually jerk up the tail in a typical manner, when alighting on a branch, or on the land, like Wagtails. These characteristic vibrations of the tail are varied to no small extent in such groups as *Myiomela*, *Niltava*, *Ruticilla*, *Pipastes*, *etc.*

GENUS RUTICILLA, as a rule retire, to high altitudes to build their nests. Extreme cold of winters usually drive them down to warmer and more congenial elevations. Most of the species, in big numbers visit the plains of India in the cold season. Some few remain behind and are found in and about Darjeeling. An examination of the leading features of this group will show that, bill is short, straight and slender; wings longish and pointed, 5th and 6th primaries longest; tail fairly even and of moderate length; *tarsus* is typically longish and slender. This latter characteristic, makes these birds more adapted for the land than perching on trees. Their song is bright and cheerful.

(495) RUTICILLA PHÆNICURA, *European Redstart*, is rarely found in the plains in winter. In this district it ascends to a high altitude to build. I found a few of these birds early in spring at Sandakphu, seemingly preferring the cold inhospitable summits, at this season of the year, on Singalillas. Occasionally you find a solitary pair or two at a lower elevation on the same spur of mountains,

where weather doubtlessly had driven them to more congenial surroundings with a few of the more migratory birds. This variety of Redstart must be well-known in Europe. In size it is about 5½ inches, above, body ashy brown ; wings darker ; tail coverts below and above, with the tail are bright ferruginous red, except the centre feathers which are brown ; lower parts of body whitish, breast above black, also, sides of the head (ear-coverts and lores) ; it has a white line over the eyes ; a narrow black frontal band on the head, behind which is a broader white patch. Amongst birds of this family will be often observed this prominent frontal band on the forehead ; which mark is more conspicuous among Forktails and Wagtails.

(497) RUTICILLA RUFIVENTRIS, *Indian Redstart*, you are, however, more likely to meet this species, both in Darjeeling and about the district or on the plains in the cold weather. It is slightly bigger than *phœnicura*. Usually observed like all members of this family, more on the land, feeding on the ground, where it is quite at home, in its persuit for insects, or search after hard seeds by way of variety or triturators in form of gravel. These Redstarts like most of the *Ruticillinæ*, are usually observed on bare, "danga," rocky or stony lands or near old neglected buildings. At times you find them, hunting about for insects in gardens and near the house. It is 6 inches in length ; bill black ; irides brown. In colour, rufous seems to predominate ; wings dusky brown, primaries margined with rufous or bright cinnamon colour which is also found below the wing coverts and underparts of the body plumage, upper and lower-tail coverts, belly and tail, with slight variations of brown ; it has a fairly conspicuous patch of dull grey on the secondaries, which is more easily made out when the bird opens out its wings to fly ; top of the head is ashy-grey ; black on ear-coverts, neck and breast. In Darjeeling and the district we have a number of different species. Some of them are rare, and few opportunities are had of meeting them. Others again are usually found in outlandish places and on high altitudes.

(499) RUTICILLA ERYTHROGASTRA, *White-winged Redstart*, is one of the rarest we have in the district. It is seldom seen below 10,000 feet elevation. I saw it occasionally at Sandakphu foraging about among rocky portions of the summit. It is 7 inches in length, larger than foregoing species. Bill and legs are black. Male is dark rufous, underparts of the body, upper and lower tail coverts, lower back (rump) and tail feathers are rufous ; sides of the head, frontal band fore-part of the breast, back, wing-coverts and part of primaries and secondaries are black ; crown of the head, neck and remaining portions of the wings are white ; head silvery white.

(501) RUTICILLA SCHISTICEPS, *Slaty-headed Redstart*, is even rarer than white-winged species. It is occasionally met with in north Sikkim, at a fair altitude. In size it is about 6 inches; colour beneath is reddish chesnut, on lower parts of the breast and abdomen it has a large white patch, also white on the throat; wings and tail black; top of the head slaty blue; sides of neck and head black.

(503) RUTICILLA FRONTALIS, *Blue-fronted Redstart*, this species, like most of the family, breeds on high altitudes. I found it far north in spring, beyond Jongri. In winter it is common in Darjeeling, and takes the place of *Niltava sundara* Fairy Blue Chat, in robin like qualities, being tame and friendly, usually solitary in habits. It is frequently seen on bushes or on the ground. It is $6\frac{1}{2}$ inches in length; bill black; irides brown. In colour it is dusky blue and rufous; more a lazuline blue on the forehead and above the eyes; wings blackish, lower parts of the body are bright rufous also upper-tail-coverts, and tail-feathers which are tipped black, central tail-feathers black.

(505) RUTICILLA FULIGINOSA, *Plumbeous Water-robin*, is a dainty little bird found in Darjeeling. It takes up its abode permanently in our jhoras and beside hill streams, living a fairly solitary life in company with its pair, and the next species, with occasional visits from Yellow-billed Whistling Thrush (343). An interesting pair of this species can at any time of the year be seen on low, cob-stones in Kagjhora. This bird is known to descend a thousand feet or so elevation in mid winter; but this couple, never leaves us even in the coldest weather, hard frost or snow. Early in spring they build their nest in a hole high up, just under Kagjhora railway bridge. They have reared and successfully launched into the world, season after season, several batches of young full-fledged Water Robins. These young hopefuls remain with their parents, till able to look after themselves, then they go in search of other hill streams or take up their permanent abode a little way up or lower down the same jhora. They seldom seem to trespass on the parent's preserves. You might easily while away, a worse half hour than watching this interesting pair in Kagjhora. Plumbeous Water-Robin is $5\frac{1}{4}$ inches in length; bill black; irides brown; wings dusky, margined dark ashy blue; tail coverts dark ferruginous. Female is paler in colour ashy blue with a good deal of white on the tail and tail coverts. It is a pretty sight to see, the hen bird in early spring, cling to the perpendicular stone bridge, adding a fresh straw or two to its old home, whilst in this position, its white tail opens and closses fan-like, with a pretty wavy motion, not met with in other birds, or any

of the allied families. Even whilst at work on round smooth cobbles on bed of the stream, tails of these Water-Robins are seldom at rest. In the middle of the day when tired-out, they are often seen resting their little legs by lying on their "tummies," looking the picture of contentedness and bliss, with their beaks hardly a foot above the splashing currents. Their whistle is a cheerful chirrup, uttered at intervals whilst at rest, long whistles of many notes are given vent to when they are either startled or flying up stream, at a signal from the male, the hen usually follows a few yards behind. Water-Robins live chiefly on aquatic insects and larvæ, washed up by the rippling stream. I have frequently seen these birds on our road leading up to the house, feeding on insects and when disturbed they perch on bushes at the side. This is usually when food is scarce in the Jhoras.

(506) CHÆMORRORNIS LEUCOCEPHALA, *White-capped Red-start*, is another bird which shares our winters with us. This species is known to ascend as far as Tongloo and Sandakphu to breed near water courses, at high altitudes, where they are frequently seen in spring ; but the pair which is located in Kagjhora, and is seen in company with Water-Robin, likes the locality so well, that it remains with us, throughout the cold weather. It breeds in a hollow above the precipitous rocks below the bridge (railway) to the south (left), where neither two legged mortals nor smaller mammals (weasel family and some of the reptiles) which go for birds' eggs would dare attempt to venture, for a sure and certain drop of two hundred feet below. For a few months, in August and September, this Redstart leaves us for a jaunt in the plains. Most of its congeners spend the cold weather in the plains. I saw numbers of them at Sivoke in November. Indians call this species Dhobi Churra, or Dhobini, owing to its love for the water side, the conspicuous white crest, which these people think, is an admirable likeness to a washerman's bundle of clothes on his head. Lepcha name of this species is *mati-tap-pho* very applicable name. This Redstart with its handsome head adornment is a fine looking bird. Sexes are alike in colour, you will be pleased to note. They are most striking in appearance, more erect and dignified in bearing than *Ruticilla*. Their wings are rounded, also tail feathers partially. This bird jerks up its tail in a manner typical of this family. In size it is 7½ inches. Plumage is deep, rich, chesnut on upper and lower tail coverts, lower back, abdomen and the greater portion of tail feathers ; head and nape are spotlessly white, in the form of a full crest or rather cap ; frontal, head band is black ; sides of the head (lores and ear-coverts) neck and breast are black ; wings and tip of the tail are fairly deep black. Though bright chesnut is the

prevailing colour, portions of black present themselves and white stand out conspicuously. White-capped Redstart is seldom seen far from the water's edge. The same could be said of most birds belonging to this sub-family, nest and eggs are typical of *Ruticillinæ*. Eggs have a light greenish tinge covered with faint reddish brown spots and streaks, much the same in appearance as Plumbeous Water-Robin's eggs only bigger in size and in shape an elongated oval.

Water-Robin's eggs are much rounder. In nest construction these two species use similar materials. Nest is composed of green moss, roots and fibres, lined inside with a quantity of black hair-like moss and other roots, wool of hill sheep and yâk, when the nest is found below Sandakphu and a like altitude. These nests are difficult to find, as they are generally placed in such in-get-at-able places, usually most artfully hidden away in mossy seclusions in precipitous places, near roaring torrents and jhoras.

(507) LARVIVORA CYANA, *Blue Wood-chat*, is another of our familiar Darjeeling birds ; but not so frequently seen as the last two species. This bird leaves us in winter for the plains. I have however met a few stray Larvivora, which have remained behind to brave our cold inclement weather. This wood-chat is about 6 inches in size. Plumage is dusky indigo blue, above, with a white streak over the eyes, about sides of the head black ; beneath bright rufous ; under tail coverts are white ; thigh coverts with cross-lines of blue and white. The female is browner in colour. When met with *Cyana* is oftener seen on the ground, picking up insects. Occasionally they are found on the bushes ; but unlike flycatchers they seldom return to the same perch on securing an insect on the wing. When observed amongst the branches, they are not shy, and don't seem to be averse to a little, attention being paid them. They are partial to short scrub jungle, not infrequently beside damp and thick undergrowth, or beside rills of water in more secluded parts of a jhora.

(508) IANTHIA CYANURA, *White-breasted Blue Wood-chat*, is perhaps more numerous than *Larvivora*. This pretty little bird inhabits north Sikkim and Singalillas, where I saw them quite at home, in spring. They visit Darjeeling about the beginning of November, when cold bleak winds have started on higher altitudes. In size *Cyanura* is $5\frac{1}{2}$ inches ; plumage below is white ; breast brownish ; above, it is prussian-blue, with ultramarine on the forehead and over the eyes ; shoulders (wing) and lower back (rump) also ultramarine ; below, the flanks are bright ferruginous. The female is pale brown, tinged with blue on shoulders and supercilium ; tail,

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upper tail-coverts, tertiaries and lower back feathers margined with blue ; brownish-olive on the neck and breast ; underparts more or less white with chesnut coloured flanks. This *Ianthia* builds at high attitudes. You will, most probably find *cyanura* constructing its nest not far from the snow line. Where I saw it beyond Jongri, usually beside old fallen trees, or where there are no trees about the place, it builds in holes dug out of the bank above the road. The eggs are whitish with a delicate green tinge, roundish in shape or broad oval much pointed at the small end ; at the large end is a zone formed by minute specks of reddish-brown, usually a bit faded in appearance. Nest is of moss outside, lined within with soft white fibres and grass. These birds are much like other species of wood-chats, they keep a good deal to thick jungle cover, where such places are available. They are tame and exhibit the confiding characteristics of Robins.

We will examine a few more well marked species, and likely birds to be more readily found in the district.

(511) TARSIGER CHRYSÆUS, *Golden Bush-chat*, is found at a lower attitude. It seldom ascends much over 5,000 feet. I saw this bird on more than one occasion on the Ging Spur. This Bush-chat is a beautifully coloured bird, which appears in thick, green foliage like a flash of light, or burnished gold, in the sun, when seen playing about the bushes in its retreat among tangled undergrowth jungle in the district or in Sikkim. *Tarsiger* is $5\frac{3}{4}$ inches in size wing expanse about 9 inches ; irides dark brown. Colour, above, is olive green, on the head, nape and back ; bright golden yellow on lower back, tail and whole of lower parts of the bird ; tail broad tipped with black it has a golden yellow supercciliary streak and a more prominent black streak on sides of the head passing through ear-coverts. *Tarsiger* is solitary in its habits. It mixes freely, however, with other birds in the locality. It is usually shy, when observed it remains but a few seconds, then flits back into thick jungle cover.

GENUS CALLIOPE, *Ruby-throats*, are common in the plains, where they are winter visitants. In summer they retire to high altitudes on the Himalayas, central and Northern Asia. Bill of these birds, is of moderate length and fairly strong ; wings of ordinary size ; tail slightly rounded ; tarsus longish and stout ; feet large; hind toe long and claws long.

(512) CALLIOPE KAMTSCHATKENSIS, *Common Ruby Throat*, arrives in the cold weather in the district, it keeps to the terai, and shows but little inclination to ascend, or even get to foot of the hills. I

frequently saw them at Titalea, amongst long grasses. This bird breeds far north. They rarely break journey whilst on their migratory voyages. They are solitary in their habits, in the plains, not infrequently coming into orchards and gardens, usually preferring such places which are in close proximity to a jungle. This species in 6 inches in size. It is readily distinguished by its peculiar ruby red sort of gorget with silvery edges, below which are black coloured feathers ; breast and lower parts of body is ashy in colour, above, plumage is olive brown ; flanks also olive-brown, bright above the legs.

(513) CALLIOPE PECTORALIS, *White-tailed Ruby-Throat*, or as it is sometimes known as the Himalayan Ruby-Throat. It is rarely seen in Darjeeling when it visits us in the cold weather, as it soon finds its way to lower elevations. *Pectoralis*, is extremely shy and keeps much to thick brush-wood, from whence its accentor-like song can occasionally be heard. These birds breed on northern portions of the Singalillas and higher elevations in Sikkim seldom below 12,000 feet. It is 6 inches in size. Plumage of the male is dark brownish ashy ; throat and upper neck is a glistening crimson ; tail white, also lower parts of the bird ; it has a white supercilium ; sides of the head black with a white patch ; breast black also sides of the throat. Female is olive-brown ; paler on the breast and underparts.

SUB-FAMILY CALAMOHERPINÆ *(Grass-warblers)*

We will take but passing notice of these Reed warblers, as most of them are met with chiefly in the plains. Only a few species visit our hill sides and none of them are observed in Darjeeling. Some few pass over, and are found on high altitudes, but these latter birds are rare and difficult to find. Grass-Warblers are of small size, and sombre in plumage. They live chiefly among reeds and rushes by side of the rivers and breed in the plains. At foot of the hills numbers are found amongst long lemon grass growing by the side of nullahs. Some few species visit northern Asia.

GENUS ACROCEPHALUS, *Reed-warblers*, are smallish sized, plain coloured birds. Bill straight, longish and slightly notched, side view, more like an isosceles triangle ; rictal bristles stout and scanty; wings longish and inclined to have a pointed appearance, 1st quill small, 3rd and 4th the longest ; tail of moderate length and rounded at the tip ; tarsus lengthened ; feet moderate ; claws long ; hind claw curved.

(516) ACROCEPHALUS DUMETORUM, *Lesser Reed-warbler*, visits the plains in the cold weather. It breeds at high altitudes in the Himalayas, where it is hard to find, and its nest is no easy matter to discover. This Reed warbler is 6 inches in length. Sexes are alike in colour ; plumage, above, is olive-brown ; beneath whitish with a tinge of muddy colour ; it has a pale supercilium, (sides of the head). It feeds on insects, usually whilst hunting it keeps up a cheerful clicking note, a sort of *titick, titick, titick*. It has a pretty warbling song in spring and during rainy season.

GENUS HORORNIS *(Hill-warblers)*

These birds have feebler and more slender bills, compressed ; rictals undeveloped ; wings shorter, 4th and 5th quills the longest, tail short, broad and graduated ; tarsi long and strong.

(523) HORORNIS FULVIVENTRIS, *Fulvous-bellied Hill-warbler*, this species is plentiful in Darjeeling, in spring more so. Most of the *Horornis* remain with us during the rains. They leave at times in big numbers for lower altitudes by end of September ; but several are found in Darjeeling in the cold weather. These little birds have a loud, rich, pretty warble. They seldom come out into more open country as they appear to be great "sticklers" for dense bushes and jungles. They are usually observed fluttering about lower branches near the ground, so that at their best only a fleeting view of them is obtained, now and then in the morning, chances present themselves of finding one in a fairly conspicuous place, perched quietly, warbling its little song. *Fulviventris* is about 4½ inches in length ; plumage olive-brown, above ; breast and beneath are dull dusky golden-yellow, which appears much brighter in spring ; chin white, also a white streak over the eyes. This bird constructs a nest of green moss, losely outside, within is cup-shaped and neatly finished, lined with dry fibres and soft roots. Eggs are beautifully coloured, rich chocolate in appearance, roundish in shape. It is usually in the nest of this species that the valuable (?) egg of *Cuculus poliocephalus* is found deposited in this locality.

GENUS HOREITES

Differs but little. They can he said to represent in the hills, *Prinia* found in the plains. Bill is slender, short and straight, slightly notched and bent at the tip ; tail broad, round and soft, more graduated than Horornis ; head feathers are short and smooth. These birds are more frequently found on high altitudes over 10,000 feet. They are Wren-like in habits.

(527) HORÆITES BRUNNIFRONS, *Rufous-Capped Hill-Warbler*, is seldom found in Darjeeling, where it is scarce and chiefly a winter visitant. In spring, several opportunities are had of observing it on the way up to Sandakphu from Tongloo, where it breeds. I found a nest of this species to the west of Tongloo boggy and marshy pond. It was hidden away among the low bushes. This bird is about the same size as *Horornis*; plumage is olive-brown, above, the head, cap is reddish brown; below, the body is ashy with a white streak in the centre; wings and tail have a reddish tinge. This species is met again, on the higher peaks in north Sikkim, more towards the western side. Eggs are broad, oval in shape; pointed at one end (piriform); pinkish in colour and glossless, with a zone at the large end of dull purple specks.

SUB-FAMILY DRYMOICINÆ (*Wren-Warblers*)

Are small sized birds, of dull plumage, they are found in biggish numbers in the plains and at a low altitude. They are not a little partial to thick lemon grass jungles in the Terai. When found on the hills they keep much to low bushy localities in preference to more wooded parts. Bill is longish and compressed; wings short and rounded; tail long and graduated; legs and feet strong.

(530) ORTHOTOMUS LONGICAUDA, *Indian Tailor-Bird*.

(531) ORTHOTOMUS CORONATUS, *Gold-headed Tailor-Bird*, are both found in the district at a lower elevation than Darjeeling. This group comprises the true Tailor-birds, several other species display strong tailoring accomplishments whilst on nest construction duties; but none of these species exhibit the ingenuity, and neatness in stitching, as do *orthotomus*. Some of the Flycatchers and one or two species among other warblers exhibit similar endowments. True Tailor-birds stitch up ingenius looking nests attached to biggish leaves. Two leaves are usually sewn together in a conical shape. In the receptical thus formed they construct or rather place, their cosy little nest of soft fibres, lined with bombax cotton and other soft silky flower seed down. When considering either of these species, you naturally turn to nest construction; apart from this qualification the Tailor-bird has many accomplishments. It is always bright, cheerful and active. The first species, or Indian Tailor-bird as it is called has a loud, sweet, warbling whistle, thrown out like a ventriloquist. It raises its head and casts its voice, as though proceeding from 20 or 30 yards away, the last few notes generally draws attention to the nearer object.

(531) ORTHOTOMUS CORONATUS, *Golden-headed Tailor-Bird*, ascends a good deal higher, the hill side than former species. I have several times seen their nest at Mineral Springs and Minchu about the elevation of 5,000 feet. When observed these birds appear to be hunting amongst the bushes, usually they seem to pay but little heed to the outer world, so intent are they to secure some relish in nature's great market-garden. Nevertheless when watched, as though unheeded they hop and flutter, artfully away, out of sight amongst tangled bushes. Frequently you hear this bird calling to its pair as it wanders. I don't think it is a stretch of imagination to say that he calls out "*pretty-pretty-pretty*," perhaps more like "*twetee-twetee-twetee*!" Tailor-birds are quite a "model pair," and become attached to each other, an admirable qualification found in most birds. Both sexes co-operating with each other, when constructing their nests, in true workman-like fashion, usually the leaves are sewn with horse-hair. I have frequently examined a perfect little knot, made to fasten the hair used. Eggs are small, oval in shape, having a greenish or yellowish ground, as the case might be, spotted, above, with blotches of reddish brown at large end. *Coronatus* is pale olive-green on back and wings ; chin, throat and breast white, with a light coloured centre line ; top of the head is conspicuous golden-fulvous, ashy about the nape ; tail dusky in colour with feathers edged greenish ; bill brown ; irides light yellow brown.

GENUS PRINIA, AND CISTICOLA

Are similar to foregoing species in many respects, differing slightly in build and colour. These birds have a shorter and more slender bill; tail is long and graduated, usually of 10 feathers. *Cisticola* has shorter wings and 12 tail feathers, which are shorter than former group ; bill short, slender and slightly curved ; wings 3rd, 4th and 5th quills the longest ; tarsus long ; feet large ; hind toe and claws long.

These birds are on an average 4½ inches in length, most of them have streaked feathers. Neither of these two genera are found in Darjeeling. One or two stray species are occasionally observed, most of them remain in the plains. A few ascend our hill sides scarcely 1,000 feet ; one species is known to ascend high altitudes.

(537) PRINIA CINEREO-CAPILLA, *Hodgson's Wren-Warbler*, is one of the honourable exceptions, for it retires to Tongloo in spring. This bird is rare, and difficult to find, as Wren-Warblers usually are shy and thicket loving birds. In size it is 4½ inches; bill black; irides buff ; colour of the bird, above, is bright rufous brown, on the back,

tail and wings, which latter have feathers tipped dusky ; head grey, feathers with dark margins ; lower parts of the body feathers rufescent, more distinctly showing on the flanks ; side of the head greyish with a rufescent eye-streak. This species builds Tailor-bird-like nests. Stitched outer leaves to protect the cup shaped nest, constructed of dry grasses, lined with soft hair like roots inside. Eggs have a bluish tinge, an imperfect zone at the large end composed of rufous-brown specks.

(539) CISTICOLA SCHÆNICOLA, *Rufous Grass-Warbler*, is common in the plains. In this district it is seldom found over 4,000 feet. Its favourite resorts are unproductive slopes of the hill side, where long grasses luxuriate, or thatching "khur" fields ; occasionally in Indian corn cultivation. These birds feed on insects. Their call is a cheerful *tick, tick* note, and have a subdued warble in spring. They run up long grass stalks with ease, when they are on the move. at times they descend to the land, or flutter in the air to secure an insect. In size *schænicola* is 4½ inches ; bill dusky brown ; irides pale olive-brown ; colour, above, is rufous brown, feathers with dark centres ; tail feathers dark brown tipped whitish ; wings (quills) dark with brownish edges ; below is white, with a rufescent tinge ; flanks more chesnut.

GENUS GRAMINICOLA

Are common in the plains. They are found in the district. These birds have a stouter, compressed bill, with curved upper ridge ; wings short and rounded ; tail broad and graduated ; tarsus short ; hind toe short with long slender claw ; rictal bristles well developed.

(542) GRAMINICOLA BENGALENSIS, *Large Grass-Warbler*, is usually found beside large rivers in the plains. They are frequently met with in Sub-Himalayan tracts, amongst tall grasses. In size it is 6¼ inches ; irides yellowish brown ; colour, above, is deep brown on the head and back, feathers edged light in shade ; wings with a dull yellowish tinge ; tail duskier brown, with a broad white tip ; below the bird is white with dull yellowish.

GENUS DRYMOIPUS

These Wren-Warblers visit lower elevations on the Himalayas in summer. They differ from *Prinia*, in having, a short thick set bill and stout rictals; wings shorter and rounder, 4th and 5th quills longest, first three feathers shorter and graduated ; tail long and graduated ; tarsus long ; claws fairly curved.

(543) DRYMOIPUS INORNATUS, *Common Wren-Warbler*, is plentiful in most parts of the plains. It is found in more bushy, scrubby portions of the district. I frequently observed them amongst long grass above Mineral Springs and similar elevations on hill sides. Its call is a pleasant and cheerfull *tweet-tweet-tweet-tweet*, which can be heard during the day in spring and rainy season, usually more frequently below 5,000 feet. *Inornatus* is about 5½ inches in length; bill and legs brown and yellowish; irides brownish yellow; plumage is greyish brown, above, on the head and back, former olive tinted; wings and tail brown with pale rufous edgings, latter tipped with black; beneath white, also eye streak. This bird constructs a well woven and elegent looking nest of fresh grass, deep and purse shaped, with a hood to keep out the rain. Entrance is from the side. Eggs of this species are beautifully marked, Bunting like, though much smaller. Bright greenish blue colour, with a zone round the broad end composed of a number of thin hair-like lines interlaced.

GENUS SUYA

Comprise some interesting species, which are common in Darjeeling, especially in May and June, when they are, usually, seen hopping about with ease and facility among thick, maze of tangled branches of our low bushes, found in gardens, hedgerows and side walks. The Suya are made out by their long tails, which are much graduated, leaving the longest feathers exposed and somewhat frayed out. Bill is stout and compressed, rictal bristles strong. These birds are considered mountain species of *Drymoipi*, for they seldom descend to the warm valleys. It has a pretty tweeting call, usually uttered, when it arrives at the top of a bush, in its assiduous hunt among interlaced branches, where it rests a moment or two, to cast an anxious eye in the direction of its pair, which has wandered, as much as to say "you are roaming too far and will be getting into danger, so please turn back," on hearing the call the hen generally retraces her footsteps in her flitting about, and leisurely joins her mate, where they indulge in brief little chirpings—comparing notes as it were, don't you know.

(547) SUYA CRINIGER, *Brown Mountain Wren-Warbler.*

(449) SUYA ATROGULARIS, *Black-throated Wren-Warbler*, we will examine together as these species are much alike in habits, and in colour partially. Both utter a wandering voice sort of call, which is difficult to locate, save perhaps for whom it is meant, when directed to its mate. Usually these calls seem to proceed from various points of the compass, and it is difficult, at times, to realise that it

has been uttered from one little throat, as the case frequently is. When half a dozen of these birds get together in the same locality confusion of calls seem to get doubly confused to an observer. Its whistle of several notes is uttered with the head thrown well up, and the sound, shot out, as it were, in the direction it is intended for, at times, as a misdirection for any one searching for its nest among the tangled bush. It displays no restlessness as you approach its sanctum, but merely seems to say "I shall fool you if I can!" and you may rest assured that it will keep its promise. For before long it has artfully manœuvred you away from its nest. *Criniger* is 8 inches long ; tail about 2½ inches ; upper plumage is dusky olive-brown ; paler on the tail, which is tipped white ; head is darker in colour ; lower parts of the bird are yellow ; breast brown. The female is not so big. *Atrogularis* on the other hand is 6½ inches, tail about 4 inches, it has dark ashy colour on the head, with a white streak from, lower bill and below ear-coverts, which shows out distinctly against the black chin, throat, sides of the neck ; breast is also black ; above, it is dusky olive-brown ; wing feathers, under wing-coverts and shoulders are buff ; tail is pale in colour. Both these species have a pleasant warble in spring, when they are resting from their labours perched peacefully on the top of a bush.

GENUS PHYLLOSCOPUS

Has a number of species found in Darjeeling and the district. Others again are more abundant in Sikkim. There is a good deal of similarity among different species of these little birds, so much so that at times they are difficult to separate, with any certainty, as they flit about big bushy trees, in Darjeeling, cryptomerias and taller flowering evergreens which are found by the side of our roads. From a distance these birds are much alike. *Phylloscopus* are small sized, of olive-greenish plumage, yellow beneath or whitish green. Bill is slender, small, straight and shallow ; rictals less developed ; wings shortish and pointed 3rd and 4th quills longest ; tarsus and feet moderate ; claws slender. We can turn our attention to little Willow Warbler without much risk of confusion.

(557) PHYLLOSCOPUS TROCHILUS, *Willow-Warbler*, Most of us are on fairly good terms with the English variety of this small Warbler, which is closely related to the Willow-Warbler. *Trochilus* is common in Darjeeling. It is to be seen where, a clump or two of trees are found, and made out without much difficulty, as it flits about the branches picking at insects and flowering buds. This Warbler is tame and social. It is generally seen in company with other small birds, Tits and Flowerpeckers. At a distance from the

tree it is on, it looks like the smallest bird we have here. On approaching it, *trochilus* exhibits but little fear. It hardly seems to notice the busy outer world of mortals, and scarce, gives a second thought to any one observing it (intently it may be). Its pretty little tweeting song is heard frequently in spring, when you will have no difficulty in making it out. It is 5 inches in length ; plumage is dusky olive-green ; wings and tail with a tawny tinge ; it has a yellow streak over the eyes ; below the bird is olive-yellow, on the neck, breast and flanks ; abdomen, whitish ; it has a broad wing bar, running laterally across the wings (coverts).

(567) REGULOIDES VIRIDIPENNIS, *Green-winged Warbler*, is a smaller bird than *trochilus*. In size it is about 4 inches. This Warbler is made out by its greener tinge of colour, above ; wings and tail feathers are edged with bright-green ; crown of the head is tinged with green ; it also has a broad wing bar. This species is fairly rare in Darjeeling.

Another little bird of this group, which will be, more readily distinguished is.

(568) REGULOIDES EROCHROA, *Bar-winged Warbler*, it is the same size as last species. This little Warbler is made out by its, typically marked big rufous bar, turning to yellow as it were ; across the wings laterally (greater coverts) a number of other species display the same class of wing-bar ; but not so prominently as *erochroa* ; upper plumage of this Warbler is a mingling of dusky green and ash ; it has a light streak on centre of the crown ; also sides of the head ; a yellow supercilium ; lower back is white, a little yellow on the corresponding portion of the body below ; quills are brownish black, bordered with greenish yellow ; tail slaty brown with yellowish green edges to the feathers ; some of the outer tail feathers are white ; beneath is greenish yellow.

GENUS CULICIPETA

Differs from the latter group in having the bill a little wider, depressed and more slender, culmen distinct ; rictal bristles developed ; claws longer and not so curved.

(569) CULICIPETA BURKII, *Black-browed Warbler*, this bird is difficult to find at times, as they are shy and slip quickly away out of sight when approached. In spring they visit Darjeeling in big numbers, when they are more frequently observed. These Warblers build about this elevation. Their nests are more difficult to find, as they are usually fixed to thick mosses growing on the sides of

big trees, securely hidden away from likely enemies, very few Oologists have been successful in getting this little bird to betray its nest. It is only when you see the hen, artlessly, in her perigrinations, suddenly disappear among thick mosses, that you may deem fairly accurately that an opportunity may have presented itself, of learning a few lessons on nidification of this little Warbler. This *Culicipeta* is about 4½ inches. Colour of its plumage is olive-green with a yellowish tinge ; underparts are yellow. This species is more readily distinguished from other small birds (Warblers and Flowerpeckers) by the broad black streak over the eyes, together with bright Siskin yellow breast and beneath ; yellowish green cheeks and neck ; it has feathers edged with green. In habits this bird reminds us, at times of Flycatchers, also in shape of its bill, not a little.

We have examined a few of these puzzling little birds, should it be desired to push enquiries further, without fear of confusion ; the typical marks mentioned in their more popular (English) names will help, the more readily to distinguish species not figured. We will pass *Abrornis* group of Warblers accordingly, and turn our attention to the little Gold Crest.

GENUS REGULUS

These pretty little birds are not unlike the Gold Crests of Europe. Bright flame coloured crest shows out more distinctly. Bill is more conic than the Warblers we have been examining, in which respect these birds approach some of the Tits. Bill is short, straight, inclined to be conical in shape ; nares protected by a few stiff plumages ; tail of 10 feathers.

(580) REGULUS HIMALAYENSIS, *Himalayan Fire-Crest*, or the Gold Crest as it is commonly called. Little difficulty will be experienced in making out this interesting little bird. Himalayan Fire-Crest is more frequently seen in spring, in Darjeeling, usually among the bushes and trees by the side of the road. It seems to keep a little distance away from where a more lively group of willow-warblers, tits, flowerpeckers and smaller flycatchers are feeding, and entertaining themselves. Gold-Crest is solitary in habits. I saw a pair of these birds frequently, last May, on side of the lower road leading to the house. Gold-Crest is nearly as tame as the Willow-Warbler, with which it occasionally mixes and appears to be on the best of terms with small birds about the place. Though *Parus monticolus*, Green-backed Tit rather annoys and upsets its equilibrium at times, by its rough and ready manners, one must admit that it is always well meant. Fire-crest consequently prefers a quiet little, matter of

fact, hunt among lower branches, only occasionally it joins its more boisterous companions among the taller evergreen trees. In size it is 4 inches. Its bright, well developed little crest, appears, amongst the dark foliage, like a flame of light. Together with this mark, which is easily distinguished and its predominating colours, *Regulus* is made out without much difficulty. Colour above, is dingy green, yellower on lower back (rump); sides of the head greenish grey; wing coverts dusky with pale spots; tail dusky edged with yellowish green; underparts are light greenish.

SUB-FAMILY SYLVIINÆ *(Grey-Warblers)*

These are nearly all found in the plains in winter, and are famed for their rich, beautiful melody—nature has clothed them, in dull sombre garments; but placed at their disposal a voice and song, which perhaps, is the richest of our warblers. Bill is fairly slender; wings longish; tarsus and feet short and strong; claws a bit curved. They feed on insects, flower buds and berries. They are arboreal in habits.

(583) SYLVIA CURRUCA, *Lesser White-Throat*, is found on our hill sides, but it does not descend in summer, much below 8,000 feet elevation. This species is met with more frequently above Darjeeling It is generally found among bushes by the side of mountain streams or Jhoras as they are called. It is not so long ago that I saw this grey warbler pouring forth a sweet song as it sat on a twig, a few yards above its nest, which I was desirous to give a closer examination to, nevertheless I felt disinclined to disturb the melodious outburst so rich in soft notes and harmony. Once you hear the song of this bird, the colour you will reckon a secondary consideration. In size this Sylvia is 5¼ inches, above, the plumage is ashy in colour with a reddish tinge; it has a faint white line between the bill and eyes; lower parts are white; neck and breast have a reddish tinge; tail brownish, with white outer feathers; sides of the head dusky ash.

Before closing this introduction to the *Sylviinæ*; I must keep the promise I made, in an earlier part of the book to dwell on a certain Warbler when I come to Sylvia; but I am sorry to say, that I know not the bird, which visited my window twice or three times on two succeeding winters, the latter end of November. This warbler, doubtlessly, was driven down to Darjeeling by snows and piercing wintery weather prevailing on higher altitudes (Sylvia is chiefly

winter visitant in India). I noticed the evening before a snow storm raging beyond Jongri, at the far end of the Singalilas. Just as the first streaks of dawn were making their way through the darkness, which shrouded Darjeeling, a fairy form seemed to hover at the window—a light airy rustle of wings greeted my ears followed by a melody ethereal in tone and harmony. I strained my ears to the utmost to find which of the Warblers had uttered the song. When I came to the window it was gone, four succeeding mornings this occurred. All I could make out was a tiny little bird flitting away in the darkness, in amongst the myrtle, forget-me-nots, and drooping honey-suckle, "dewy with nature's tear drops as it past." Well, I know the sweet carol of *Sylvia Orphea*, Orphean Warbler and its counterpart *affinis*; but no, it was the richest song I have yet heard and probably the richest I shall hear on earth, may be I shall hear its counterpart, when I harken to the song no Orpheus can ever rival—proceeding from the Eternal City—Doubtlessly this Warbler made so great an impression on my mind, when its song came on the morn, when one of those, I held dearest on earth had just crossed the river of life.

SUB-FAMILY MOTACILLINÆ (*Wagtails and Pipits*)

These comprise birds which frequent the sides of rivers, marshes, sandy banks; fields under irrigation, in the plains, and stony sides, of the hills, numbers of species are found feeding in our Jhoras. They have a strong and easy flight, and most of them vibrate their tails up and down, in a typical manner. Bill is of moderate length, slender and straight slightly bent at the tip, which is notched. These birds live, chiefly, on the ground, for which mode of life their feet are well adopted. Wings are typically long and pointed, tertiary feathers are lengthened; tail long, displaying more or less a few white feathers; tarsus fairly long and slender; claws a little curved; hind claw, of a large number of species, is long and straight.

These birds are divided up into the following groups :—

(i)—Hill Wagtails or Forktails.

(ii)—Wagtails (tertiary feathers lengthened).

(iii)—Tit-larks (having streaked plumage).

GENUS ENICURUS (*Hill Wagtails*)

Comprise, birds with tails long and forked; bodies slender; legs and feet strong; plumage, more or less, black and white; wings

rounded in appearance, the tertiary feathers of this group are of moderate length, 4th and 5th primary quills are longest ; tail long ; bill straight, having a gentle uptilted appearance ; tarsus long.

These birds are generally, associated with water, running streams or dry sandy places ; damp marshy spots. They live on the land, chiefly, in preference to perching on trees, and run with ease, on the ground, where they appear to be in their more natural element. Their song is sweet and cheerful. They have the family trait of vibrating their tails.

(584) ENICURUS MACULATUS, *Spotted Fork-tail*, this beautiful hill Wagtail is found oftener on high altitudes, than lower down. It is, however, not common. I have seen it, at Tongloo. Usually solitary in its habits, picking about, the road, which leads to Sandakphu and on scrubby hill-sides, not far from springs of water. It is dainty in appearance and prettily marked. The white spots show out, distinctly, against deep black plumage. In size it is 10 inches ; bill black, legs and feet whitish ; irides dark brown. A few of the leading colours (markings) to be sought for, will aid, the more readily to make the acquaintance of this beautiful and elegant species. The trouble is that it will be a one sided introduction for *Enicurus* cares little for our intrusion—upper plumage is black with white spots, prettily speckled ; it has a broad white band over the forehead ; base of the tail is pure white, remaining portion black, tipped with white ; neck and breast black ; underparts of the bird are white. This is but a poor description of this beautiful Fork-tail; but it will serve our purpose of distinguishing it from other species. These birds are found, more frequently, near water-courses : Jhoras, feeding on insects, on sandy and more pebbly shores ; occasionally not far from scrub jungle.

(585) ENICURUS IMMACULATUS, *Black-backed Fork-tail*, is much like the former species ; but not nearly so prettily marked (spotted with white). It is 8 inches in size. It differs from *Maculatus* in having the breast white instead of black ; back is unspotted. This species is much rarer than the Spotted Fork-tail and is only occasionally seen. I had more than one opportunity of observing it in Hi forest in Sikkim, where I found it frequenting damp open ground beside hill streams. I am uncertain if I have seen Black-backed Fork-tail in or near Darjeeling, most probably I have not.

(586) ENICURUS SCHISTACEUS, *Slaty-backed Fork-tail*, visits Darjeeling occasionally in early part of the year. Below 5,000 feet elevation, it is generally found without much difficulty, where it is more at home. I saw this species in very fair numbers at Singla, on Takvar Spur, solitary, feeding near the road not far from springs

of water. *Schistaceus* is 10 inches in length, and is easily recognised. Colour is slaty in appearance, which replaces the black on upper parts, observed on the foregoing birds. Above, the plumage is darkish slaty blue, on the head, neck and back ; black on cheeks and throats ; white frontal band over the forehead, typical to this family ; underparts are white ; wings and tail black with white spots ; a big glistening wing patch or band, shows out conspicuously. These birds are generally found in the beds of our bigger mountain streams, occasionally in company with Plumbeous Water-Robin, when this bird descends to a lower elevation.

(587) ENICULUS SCOULERI, *Short-tailed Fork-tail*, looks a bit comical with its small tail, in presence of the foregoing species, with their long train like tails, otherwise it is similar to them in many respects. *Scouleri* are rare. A better opportunity is offered, of seeing this bird on the dry shingly bed of Rungeet, Big Rungeet in particular, where it enters the river basin in Sikkim.

Scouleri appears to delight to hunt for aquatic insects on the rocks, amidst the noise and turmoil of our hill torrents and waterfalls. In size it is 5½ inches ; plumage, above, is not unlike *maculatus*, tail and wings are black with white patches ; rump and upper tail coverts white ; head and back are black, the former with a white frontal band : throat and part of the breast black, remaining portions, below are white.

ii.—WAGTAILS

Are divided into :—

(*a*)—Water-Wagtails,

(*b*)—Wood-Wagtails,

(*c*)—Field-Wagtails,

(*d*)—Garden-Wagtails.

(*a*) WATER-WAGTAILS

GENUS MOTACILLA

These birds are so well-known that a description of them seems hardly necessary. They are more partial to watery surroundings and its neighbourhoods. Bill is straight and slender ; wings long and pointed 1st and 2nd quills the longest, tertiaries equal to the primaries ; tail longish and slender ; tarsus moderately long and thin ; hind toe and claw short.

(589) MOTACILLA MADERASPATANA, Pied Wagtail, is somewhat rare on these hills and never seem to visit Darjeeling. I have occasionally seen them in Rungeet Valley and on sandy river beds. It is about 8½ inches in size, and resembles a little in colour generally *Enicurus Scouleri*, in habits not a little, consequently it is mistaken sometimes for the short-tailed Fork-tail. Bill and legs are black; irides dark brown; colour of plumage differs; it has a white supercilium instead of a frontal white band; greater portion of the outer tail feathers are white, also edges of upper tail-coverts, beneath, white, from the breast. This Wagtail is well distributed throughout the plains.

(590) MOTACILLA LUZONIENSIS, *White-faced Wagtail*, this species will give but little trouble in distinguishing. It is frequently seen on our roads, a little way out of the station, usually on a bright day after a shower of rain, spring in preference. In size it is 8 inches in colour, not unlike *M. Alba* of Europe; above plumage is deep back; nape of the neck and occiput black, also lower back and a large patch on the breast; tail feathers and lower parts of the body are white; front and sides of the head and neck are broadly marked with white; it has a large wing patch, common to Motacillinæ These colours are taken from a *luzoniensis* in its rich, spring plumage which shows birds in their best and gayest attire. Deep black of this species, changes in winter to ashy grey. This bird is found in most places in the plains, where it arrives towards the close of the rainy season and remains during the cold weather.

(*b*) WOOD-WAGTAILS.

GENUS CALOBATES are more slender in form; bill thinner than last groups; tertials not so elongated; tarsus shorter, hind toe short, claw longish.

(592) CALOBATES SULPHUREA, *Grey and Yellow Wagtail*, is perhaps the commonest and best known species of Motacillinæ, seen in Darjeeling, usually in our Jhoras, sporting among rocks and stones, in the bed or sides of the streams. When disturbed they fly off in a good strong dipping manner as it were, uttering loud chirrups at each ascent of the bird in their undulating flight. The song and chirrup of species belonging to this sub-family differ but slightly from each other, and is not a little typical to each group, being cheerful in sound and musical in most of the species. The song apart from the chirrup, is indulged in chiefly in spring, and when they are at rest, looking happy and contented, as though they had laid aside for a brief space, the more strenuous labours of the day. In size, *sulphurea* is 7½ inches; its sulphur yellow

colour makes it easily distinguished ; plumage, above, is pale grey ; white on the throat and wing-patch or band, as it looks more like ; some white on the tail, inner web of the feathers ; wings and tail are brownish black. This is about as much of black and white, which can be observed from a distance. The rest of the plumage is pure sulphur yellow, chiefly on lower parts of the body. Occasionally tinged green ; upper tail coverts pale yellow, also edges of the wings, tertiary feathers. In summer the yellow plumage becomes darker in colour. In spring this bird, usually ascends to Tonglo and like altitudes to breed, occasionally I have noticed *Sulphurea* building its nest on sides of the Jhoras in the outskirts of Darjeeling, near the ground at foot of scraggy looking water worn bushes growing among perpendicular rocky cliffs by the side of mountain torrents. Nest is neatly made, constructed of moss and fibres, lined with soft materials, wool and hair. Eggs are brownish-white, mottled and clouded all over with brownish yellow, here and there fine black hair like lines twisted about the large end. *Sulphurea* is often seen on the road, feeding on insects, as though a bit tired of restricting its surroundings to hill streams and cold jhoras. When on roads, it runs with ease. Constant vibration of the tail is even more noticeable than with previous species.

FIELD WAGTAILS

Genus Budytes, differ but little, outwardly from the two proceeding groups. Tertiary feathers, which were observed to be lengthened in the former birds, are shorter in Budytes ; tarsus stouter and stronger ; typically, hind toe and claw are lengthened, which shows an affinity Field-wagtails have to larks and pipits, also in the longer tarsi.

(593) Budytes viridis, *Indian Field-Wagtail.* In this species we have birds of gregarious habits. They are usually found in flocks on pasture lands in company with cattle which may be seen grazing beside villages in Bengal, and homesteads in the district, where I have frequently observed them. They pass over Darjeeling in large flocks, settling for a few days to rest and forage about our grassy hill sides, before proceeding on their journey, about April, for higher altitudes to breed. On their return the latter end September, they break journey again, with their flocks considerably augmented three or four times the size, containing many young birds, strong and lively on the wing, with all, suspicious and easily scared, inexperienced in the occasional, good intentions of human beings. I have often seen, in Darjeeling, the greater part of an immense flock chiefly of these birds and Pipits, larks etc. alight close to the house, then without any apparent, warning, sweep up again in to the

air, caused by a false alarm given by an over jealous sentinel, leaving a score or two of old birds studiously pecking among the leaves, who merely lift their heads as much as to say, "what on earth, has scared you, next!" *Viridis* is 6½ inches in length; bill and legs black; irides dusky brown. Colour of these field-wagtails changes a good deal, according to the season. Winter plumage, when one is more likely to see it, is olive green, above, with a white streak behind the eye (supercilium;) wings dusky, with two yellowish white cross bands, formed by whitish tips of the coverts; tail black, margined greenish, two outer feathers are white; beneath, chin and throat are whitish, remaining portions are yellow. These are about all the leading colours or markings to be looked for, whilst the bird is about pecking on the ground, among autumn leaves, which lie thick about the place. They usually vibrate their tails, as they advance, up hill, as a rule, at times followed by a short run.

TREE PIPITS

GENUS PIPASTES. These birds have their lower plumage much spotted; bill short and stout; tarsus short; unlike Budytes, Pipits, when disturbed, soon take to the perch on a bush or tree close by, with considerable ease. They are readily made out on alighting or running along lateral branch of a tree by the up and down vibration of the tail. All species of *Pipastes* visit, or rather break journey in Darjeeling on their way up to higher altitudes on the Singalillas and North Sikkim, even ascending some of the lofty passes into Thibet. These birds are, a little difficult at times to separate from different species, when found in mixed flocks containing larks and finches.

(596) PIPASTES AGILIS, *Indian Tree Pipit*, can be made out without much difficulty when seen singly, by its large black spots on the throat, breast and flanks, together with fine greenish olive upper plumage, and also well marked dusky streaks on the crown; beneath, the body is white, with a fulvous tinge, which is scarcely noticeable, when observing this bird from a distance; dark brown wing coverts are more perceptable, and outer tail feathers which are broadly tipped with white. These birds spread themselves over the plains of India in winter. They are social and gregarious, picking about in flocks in the fields, gardens and hedgerows where they settle down, for short foraging excursions. They destroy large quantities of noxious insects, myriads of mosquitoes on the wing, and ferreting them out of their lurking places, hence its Indian name "musarichi." Pipits also introduce us to hard billed birds, which feed much on dry grains. *Agilis* is 6½ inches in size; extent of wing 11 inches; bill and legs are light-brown. This Pipit is not unlike the European species.

TIT-LARKS

GENUS CORYDALLA, resemble larks, more so, young birds, in plumage. They can be separated in the following manner: first according to our list, has streaked plumage; hind claw very long, a similar peculiarity we shall, later on, find in some groups of larks. Second type of these tit-larks, has feathers slightly streaked; hind claw short.

(599) CORYDALLA RICHARDI, *Large Marsh-Pipit*, visits Darjeeling about October or after the rains have ceased. This is when on its migratory journey to the plains. So is, here, always associated in large flocks. They alight, to forage for grain in the shape of grass seeds or weeds, more generally. These large Marsh Pipits are seen to rise singly, one at a time, when disturbed in a casual manner; but a sudden start will raise the greater part of the flock. They are strong on the wing, big in size. These Pipits keep wonderful discipline. Once raised, the flock flies swiftly, keeping close together and perform remarkable evolutions in the air, with order and precision. They are much stronger in flight than previously mentioned species. It is obvious that these birds look to certain leaders among them for orders or word of command like a well trained regiment of soldiers. In their evolutions they sweep past a person standing by, with a whirl of their poised wings. A sort of "march past," or inspection drill. Then they rise and perform circles, "loop the loop" sort of "trick" and other interesting figures in mid air. I have seen them tire out, without much trouble a nimble Sparrow-Hawk or Besra. This Marsh Pipit is often brought into larger game markets and purchased in Calcutta and elsewhere, by epicures, under the name of Ortolan, as they are fat and well-flavored, together with species of *Pipastes*, Titlark, Finch and Social larks (761). This Marsh Pipit is readily made out, owing to its large size, when in company with birds of the same family. It is about 8 inches in length; hind claw about $\frac{3}{4}$ inch long; above, plumage is dusky brown; edges of the feathers are tinged with olive; supercilium and lower-parts of the body are fulvous white; breast browner in colour, with long dusky spots; outer tail feathers are tipped broadly with dull white. These Marsh Pipits are found in large numbers in the cold weather in most parts of the plains, more particularly in rice fields of Bengal, where they seem to court destruction from the nets and guns of native shikaries.

(600) CORYDALLA RUFULA, *Indian Titlark*, is perhaps more common than the foregoing, some years, more so than others; but their nests are difficult to find. These birds often come, into com-

pounds of houses and back gardens, to feed. They can be made out from former species by the shorter tail and smaller size. *Rufula* is 6½ inches in length ; colour, above, is pale olive-brown, feathers are centred with brown ; lower parts of the body are earthy white ; breast fulvous ; sides of the breast are marked with brown spots.

STONE-PIPITS or LARK-PIPITS, are not found in the district.

TRUE PIPITS

GENUS ANTHUS. Two species belonging to this group are found in Darjeeling and the district. Bill is slender in shape ; tarsus slender and short ; hind claw longish, a little curved.

(605) ANTHUS CERVINUS, *Vinous-throated Pipit*, is frequently seen in Darjeeling, usually from November and remains with us through greater part of the cold weather. In size it is 6 inches. It is distinguished by long oblong blotches on its breast, upper abdomen and flanks ; above, colour is tawny brown with dark centres to the feathers ; beneath, plumage is white, tinged with fulvous. Pipits, generally speaking, are a typical group. They remind us not a little of larks in colour, and in habits of wagtails not a little, also by their slender forms, narrower wings and elongated tertiary feathers. These birds are light and agile, equally on the land and when they take to the trees. Vinous-Throated Pipit and a few of the previous species, are often observed like larks to rise in the air, whistling as they ascend, though only for a short distance. Pipit is arboreal in habits, and when disturbed, whilst feeding on the ground it takes readily to bushes and trees close at hand, where it is seen, to run along the branches with considerable ease dipping its tail in wagtail fashion. Nests of these pipits are exceedingly difficult to find, as they breed at a considerable elevation. I found a nest or two on the moors beyond Sandakphu, hidden securely, away among tufts of grass.

GENUS HETERURA, differs from the former by its thicker bill, though in habits it is similar. Bill is deep and strong, ridge of which is arched ; feet and legs strong ; tail lengthened and painted at the tip ; tarsus strong ; hind toe long.

HETERURA SYLVANA, *Upland Pipit*, is found in Darjeeling, but it is rarer than the former species. In size it is 7 inches. This Pipit is oftener found on uplands about the station, and district in the cold weather and early spring. It feeds chiefly on seeds and insects. When disturbed it takes, like the former species to the nearest tree, vibrating its tail as it runs along the branches. Plumage.

above, is streaked with brown ; tail brown, centre feathers are pale having white tips ; beneath, plumage is earthy white ; supercilium a like colour, feathers having black shafts.

FAMILY AMPELIDÆ

This group includes birds of a different type from the foregoing. They have short tarsi and strong feet, more suitable for perching, than progression on the land. Bill is strong and inclined to be conic in shape. Birds found in this family, have bright. and prettily coloured plumage, as a whole. They feed much on buds, insects and berries. Not a few of them possess rich vocal powers, which rival some of our warblers. *Ampelidæ* are arboreal in habits, and are closely related to the Tits.

SUB-FAMILY LEIOTRICHINÆ

A big number of representatives are found in Darjeeling and the district. Usually birds having a restricted geographical distribution. Some are found only in a few of the states of eastern Himalayas. These interesting birds have rich and varied colours. Bill is short in many of the species, wide at the base ; in some groups lengthened and a little curved ; tail fairly short ; tarsi short and strong ; feet and claws strong, the latter a bit curved and sharp. Plumage varied, well-marked with bright colours in some species, whilst others are dull in colour. Most of the groups have ample crest feathers. First two birds, belonging to Genus *Cochoa*, *purpurea and viridis* (607-8) are very rare, *viridis* more so. They are now and then, met with, in thick forests about 9,000 to 10,000 feet elevation. They are extremely shy and solitary in their habits. They appear to seclude themselves near unfrequented places, in close proximity to springs of water in jungle retreats. I have on one or two occasions observed them in places, where I would have expected to find Wood-cock, *Scolopax rusticola* (867) or *Gallinago Solitaria*.

(607) COCHOA PURPUREA, *Purple Thrush-Tit*, is found on fairly high altitudes. On rare occasions, I saw it in thick bamboo jungles near Tongloo. These birds have given much trouble to find their relationship to better known and perhaps more typical groups. Their richly coloured plumage, moderately short tarsi bones, etc. and

pounds of houses and back gardens, to feed. They can be made out from former species by the shorter tail and smaller size. *Rufula* is 6½ inches in length ; colour, above, is pale olive-brown, feathers are centred with brown ; lower parts of the body are earthy white ; breast fulvous ; sides of the breast are marked with brown spots.

STONE-PIPITS or LARK-PIPITS, are not found in the district.

TRUE PIPITS

GENUS ANTHUS. Two species belonging to this group are found in Darjeeling and the district. Bill is slender in shape ; tarsus slender and short ; hind claw longish, a little curved.

(605) ANTHUS CERVINUS, *Vinous-throated Pipit*, is frequently seen in Darjeeling, usually from November and remains with us through greater part of the cold weather. In size it is 6 inches. It is distinguished by long oblong blotches on its breast, upper abdomen and flanks ; above, colour is tawny brown with dark centres to the feathers ; beneath, plumage is white, tinged with fulvous. Pipits, generally speaking, are a typical group. They remind us not a little of larks in colour, and in habits of wagtails not a little, also by their slender forms, narrower wings and elongated tertiary feathers. These birds are light and agile, equally on the land and when they take to the trees. Vinous-Throated Pipit and a few of the previous species, are often observed like larks to rise in the air, whistling as they ascend, though only for a short distance. Pipit is arboreal in habits, and when disturbed, whilst feeding on the ground it takes readily to bushes and trees close at hand, where it is seen, to run along the branches with considerable ease dipping its tail in wagtail fashion. Nests of these pipits are exceedingly difficult to find, as they breed at a considerable elevation. I found a nest or two on the moors beyond Sandakphu, hidden securely, away among tufts of grass.

GENUS HETERURA, differs from the former by its thicker bill, though in habits it is similar. Bill is deep and strong, ridge of which is arched ; feet and legs strong ; tail lengthened and painted at the tip ; tarsus strong ; hind toe long.

HETERURA SYLVANA, *Upland Pipit*, is found in Darjeeling, but it is rarer than the former species. In size it is 7 inches. This Pipit is oftener found on uplands about the station, and district in the cold weather and early spring. It feeds chiefly on seeds and insects. When disturbed it takes, like the former species to the nearest tree, vibrating its tail as it runs along the branches. Plumage,

above, is streaked with brown ; tail brown, centre feathers are pale having white tips ; beneath, plumage is earthy white ; supercilium a like colour, feathers having black shafts.

FAMILY AMPELIDÆ

This group includes birds of a different type from the foregoing. They have short tarsi and strong feet, more suitable for perching, than progression on the land. Bill is strong and inclined to be conic in shape. Birds found in this family, have bright. and prettily coloured plumage, as a whole. They feed much on buds, insects and berries. Not a few of them possess rich vocal powers, which rival some of our warblers. *Ampelidæ* are arboreal in habits, and are closely related to the Tits.

SUB-FAMILY LEIOTRICHINÆ

A big number of representatives are found in Darjeeling and the district. Usually birds having a restricted geographical distribution. Some are found only in a few of the states of eastern Himalayas. These interesting birds have rich and varied colours. Bill is short in many of the species, wide at the base ; in some groups lengthened and a little curved ; tail fairly short ; tarsi short and strong ; feet and claws strong, the latter a bit curved and sharp. Plumage varied, well-marked with bright colours in some species, whilst others are dull in colour. Most of the groups have ample crest feathers. First two birds, belonging to Genus *Cochoa, purpurea and viridis* (607-8) are very rare, *viridis* more so. They are now and then, met with, in thick forests about 9,000 to 10,000 feet elevation. They are extremely shy and solitary in their habits. They appear to seclude themselves near unfrequented places, in close proximity to springs of water in jungle retreats. I have on one or two occasions observed them in places, where I would have expected to find Wood-cock, *Scolopax rusticola* (867) or *Gallinago Solitaria.*

(607) COCHOA PURPUREA, *Purple Thrush-Tit*, is found on fairly high altitudes. On rare occasions, I saw it in thick bamboo jungles near Tongloo. These birds have given much trouble to find their relationship to better known and perhaps more typical groups. Their richly coloured plumage, moderately short tarsi bones, etc. and

habits, partially remind us of Pittæ ; but their tit-like bills ; high elevations they frequent ; the ease and grace with which they climb and swing about branches of trees on slender bamboo twigs together with their equally good aptitude for the ground, and particularities of structure entitle them to our favourable consideration though rare, and difficult to meet. Should you be in a position to observe this group, a closer examination will fully repay, any labour you may bestow. *Cochoa* is shy and reticent. In size 11 inches. Little difficulty need be experienced in distinguishing *purpurea* from the much rarer species, *viridis*. colour of Purple Thrush-Tit is ashy purple, above ; wings have a purplish tinge ; primaries are black with a lavender coloured band near the coverts which are black ; head is bluish grey. Female, is reddish brown in place of purple found on the male.

(608) COCHOA VIRIDIS, *Green Thrush-Tit*, is a much prettier bird. It is rare and found with not a little difficulty. It seems to be partial to more rugged surroundings in spring, at the far end of the Singalillas, where I observed it on two occasions. Doubtlessly some fortunate lover of ornithology will find *purpurea* and *viridis* in their natural home and haunts among the wilds of Nepal. *Viridis* is 11 inches in size ; bill black ; irides brown ; plumage, above, is bluish green ; most of the quills are black ; some of the wing-coverts green with black circular spots, others show pale blue with black tips ; tail dull blue with black tips to the feathers ; head and back of the neck cobalt blue ; black about the sides of the head (lores, supercilium and ear-coverts tinged blue) ; under parts of the body green, with a tinge of blue on the throat and near the legs.

II. HILL-TITS

These birds are of smallish size, well-marked, here and there, with bright colours. They are social and gregarious, usually associate in small flocks, or mixed up with other small birds of arboreal habits.

GENUS PTERUTHIUS, have strong bills, shrike-like in construction and habits. Bill is short, stout, a bit wide at the base, curved, hooked and notched at the tip ; nares with scanty bristles ; wings moderate, 3rd 4th and 5th quills the longest ; tail short ; tarsus shortish ; lateral toes syndactyle ; hind toe long ; claws curved.

(609) PTERUTHIUS ERYTHROPTERUS, *Red winged Shrike-Tit*. This bird gives us a convenient approach to the group known as Hill-Tits, which are interesting birds, some of them are the commonest and tamest in Darjeeling, and the district. Red-wing Shrike-Tit is,

however, not so frequently seen, here, occasionally it is observed in spring, when it comes to breed, builds its nest among trees about the place. It displays much forethought and insight, in hiding away its nest, so that the chances of finding one are reduced. Some time back I found a pair of these birds building in early part of May, near tip of the high branches of the chesnut tree at the head of our upper road leading to the house, quite beyond the reach of the boldest climber. Nests of this species are fixed, as a rule, to forked green twigs, pendent like, as was observed when considering the Orioles. The nest is constructed of moss, hair and fine roots. Eggs are broad oval, pointed abruptly at the small end. The shell of which is fine, having a fair gloss; colour pinkish white, speckled with brownish red spots at the large end. The markings get mingled and confluent, composed of pale lilac below, brownish red spots. This Shrike-Tit is solitary in habits, at times it may be noticed, noiselessly, to join a group of small birds in their merry hunt among the branches, at such places in Darjeeling where the road runs through well wooded parts. It is silent in its movements, as it slips from brush-wood where it has been feeding. The Shrike-Tit is not a little partial to small ripe berries growing on some of the bushes. As it rests, it has a bright cheerful call. Its not unmusical whistle is ferquently heard in spring; though the Shrike-Tit itself is often unobserved, unless a close search is made in the jungle. In size it is 7 inches, plumage of the male, is light plumbeous grey, above; wings and head are black; tertiary feathers chestnut red, which form a conspicuous wing patch, this typical mark aids one in distinguishing this species; tail is black; beneath, the plumage is white; primary quills are tipped with white.

(610) PTERUTHIUS RUFIVENTER, *Rufous-bellied Shrike-Tit*, is slightly bigger in size. It is about 7½ inches. Now and then it is seen in Darjeeling, chiefly, in spring, but it usually seems to prefer a lower altitude. Both species of Shrike-Tits are similar in habits, and could be confused one with the other, when casually observing them from a distance. Colour of the male, *rufiventer*, above, is dark chesnut on the back and upper tail coverts; wings, tail and head are black; wings have a ferruginous patch (tips of the secondaries and part of the tertiaries;) breast ashy with golden yellow on the sides.

(614) LIOTHRIX LUTEUS, *Red-billed Hill-Tit*, used to be one of the commonest birds in Darjeeling. They are frequently seen, now, though not in such numbers, since the undergrowth has been, so effectually cleared away. Both species of *Liothrix*, go to form a typical and friendly group of birds. *Luteus* may be seen throughout the year, as it hunts and hops about among the thick bushes, now

and then showing its bright golden breast against an olive-green colour; its prominent red-bill can hardly be overlooked. In size it is 6½ inches. It has a pretty warbling call, which is not infrequently directed to its mate, which is at no great distance from it. Most birds in the district possess three or four different calls and, warbles it may be, according to season of the year; or perhaps in what frame of mind, the bird, finds itself; a call to its mate; a warble or song to its sweetheart (no other than its mate); an angry outburst of "bad words" to an enemy or when its temper is a bit ruffled; and possibly a fourth in spring of the year or when the rains are drawing to a close, and bright sunshine reappears. When cold weather is approaching *Liothrix's* voice changes, spring tunes many a minstrel whose sweetest notes are reserved for Halcyon days. On the whole *luteus* is shy and seldom comes out into the open. I have seen this species, as far up as Tongloo, so that it evidently prefers high altitudes to warm valleys below Darjeeling. It might be said, that the prevailing colour of this species is olive-green; ear-coverts dusky-green; plumage, beneath, is dark yellow, deep golden colour on the breast, and pale towards under tail-coverts; primaries and part of the secondaries deep yellow; a sanguineous coloured bar on the wings; tail is black; bill coral red; remaining portions of the plumage olive-green.

(615) LEIOTHRIX ARGENTAURIS, *Silver-eared Hill-Tit*, is a rarer bird than last species and only occasionally seen in Darjeeling. It prefers a lower elevation than *luteus*. I found *Argentauris*, also, in Sikkim, at about 6,000 feet in the district. These birds are usually found in small parties, associating at times with *luteus*. They seem to revel in dense undergrowth "thutni" as hillmen call, the plant, a sort of straggling wild rhubarb bush, which in the younger days of Darjeeling supplied a rich feast both for birds and men, the former going for the ripe berries and the latter, tender shoots and stems, which when peeled go well with a little country sugar or salt. Several birds are very found of ripe *thutni* fruit, Sibias, Hill-Tits, Flowerpeckers, etc. These thutni jungles, used to supply a rich field for Ornithologists, but they are fast disappearing. *Argentauris* is a prettily coloured bird much more strikingly marked than the former species. No difficulty need be experienced in making the acquaintance of either of these well-known *Liothrices*. *Argentauris* presents many distinguishing marks, as it hops and flutters about among dense branches of bushes, slowly, as though making its way, as it feeds, towards the top where it, usually, rests its limbs, as it were, for a minute or two and warbles a loud far-reaching, cheerful outburst. Whilst it is in the dark seclusion of the bushes it appears like a bush-chat, as it enters the better lit up portions, ample opportunities are offered of admiring its beautiful and harmo-

nious blending of colours. Bright silvery ear-coverts show out distinctly, against the black streaks from the lower mandibles; lores and top of the head are also black; above, back is slaty in colour, having a greenish tinge, with a golden necktie round the nape; tail coverts bright sanguineous red; same colour also on the base of primaries and secondaries; breast bright gamboge yellow; underparts are slaty green tinged with yellow. In size *Argentauris* is 7 inches.

(616) SIVA STRIGULA, *Stripe-throated Hill-Tit.* This prettily marked tit is frequently seen, on higher altitudes in Darjeeling. It is plentifully distributed round and about Senchal. On trees by the side of the road to Tongloo and Sandakphu it is frequently observed. In spring it is occasionally seen in better wooded parts of the station. In size it is 6¼ inches. The pretty, rich orange coloured crest of this bird, shows out distinctly, more so, when active and pecking about. It remains much, among branches of biggish trees in preference to low bushy under-growth. They are gregarious in their habits. Above, plumage is slaty, brightened up with a tinge of green; wings are black, quills with yellow edgings; coverts olive green, middle of the wing feathers edged with fiery red; tail black some of the feathers are yellow tipped; lower parts of body orange yellow; throat is prettily marked with black lines. A most striking effect is caused by the pretty combination of white and black tipped feathers of the wings, above, on the coverts, appearing like broad bars or "fingure marks"; bill is bluish grey; irides brown.

(617) SIVA CYANOUROPTERA, *Blue-winged Hill-Tit*, is a different type of bird to *Liothrix*. In habits it is more like the last species, frequenting a good deal, taller evergreens and trees, occasionally descending to shrubs and bushes. It is common in Darjeeling, chiefly in spring and during the rains, when ample opportunities will be had of seeing this cheerful little Hill-Tit. These birds are bigger than *Parinæ*, tits which are usually of small size. *Siva* is a little bigger than our hill-sparrows, and are found in most parts of the station, wherever a green tree or a few shrubs are to be met with. These birds associate freely with, hard-billed Flower-peckers, Warblers, Parinæ, Sibias, and Flycatchers, all these birds in Darjeeling seem to be on the best of terms with one another; happy and contented, except when their ardour has been damped by a misty rainy day. *Siva* is not so musical as its brethern, but it has a cheerful, loud chirrup which is pleasant to hear on bright spring mornings and is kept up throughout the day. This bird is easily made out, owing to its typical blue wings (quills) which are noticeable, as it hops

among branches of trees, bushes and evergreens. They come into compounds and gardens close to the house to feed. It is 6¼ inches in size ; plumage, above, is yellowish brown, bluish grey on the head, more a rufescent tinge on lower back ; wings and tail are cobalt blue ; secondaries and tertials are tipped white ; underparts are whitish, tinged lake red. In habits these birds are much like *Strigula*, possessing an ample store of buoyancy of life and vivacity.

(618) MINLA IGNOTINCTA, *Red-tailed Hill-Tit*, we come, now, to a more amusing species, with a pretty, bright red tail. This bird remains with us, throughout the year ; in winter in smaller numbers. In spring and during the rains they are plentiful in our forests, chiefly in more open country. At times it is seen, climbing with facility. It could compete with ease and good grace with Piculets and Woodpeckers. It is frequently seen going along straight branches of trees, picking at cracked, inflated and fissured bark, in its endeavours to dislodge comfortably housed termites. In size it is 5½ inches ; bill blackish ; legs more yellow ; irides brown ; colour, above, is golden, yellow olive, reddish on the back ; wings and tail are black, broadly margined with bright crimson on the primaries and tail ; also a little crimson on the wings (tips of the primaries) and some white showing ; nape and head black, supercilium white ; black band through the eyes. This *Minla* is easily recognised, and cannot be mistaken. When seen in spring in Darjeeling they are fairly common. They seem to be always busy and active. In the mornings and warm bright days in May they are usually more lively and display a quarrelsome disposition, the males indulge in a "rough and tumble" : going for each other for all they are worth ; creating quite a sensation among the little (feathered) community about them, as they "go for" each other. They preface their assaults, or rather intersert an angry chirping, which sounds like, "you-try-it-if-you-dare, you-try-if-you-dare," sort of interlude, in each others embrace, and finally they come tumbling to the ground, from whence, after a few finishing or "knock out" blows and kicks, they suddenly part. Each antagonist flies off to a different tree, and calls out to its mate, in a shrill plaintive, injured tone, which sounds very much like, "sweet Bijou' ! sweet Bijou' !! Then in a somewhat subdued voice, "pretty Bijou' !" Sweet Bijou' of course not far off, about twenty yards or more, quietly pecking unconcernedly among the bushes. She hardly lifts her head, when she hears the call, merely gives a gentle chirp as much as to say "I am here". *Minla*, is about 5½ inches long ; bill blackish ; irides brown. It builds a neat, deep, cup shaped nest of greenish moss, lined within with soft moss roots and hair. It is fastened to a slender forked branch, usually on a tall tree. Eggs are verditer-blue with brownish red spots. The rest of *Minla* species : Chestnut-headed, and Dusky-green Hill-Tit (619—620) are

not nearly so plentiful or easily made out, as *ignotincta*. They usually prefer lower elevations than Darjeeling. In habits, they are a little similar.

III.—IXULEÆ (*Flower-peckers*)

These birds differ a good deal from flowerpeckers, mentioned in an early part of the book under *Dicæinæ (Tenuirostres)*. We might appropriately call them hard-billed Flowerpeckers. Their bills are different in shape. These birds are more Parian in build and habits. In colour their plumage is dull and sombre, with exception of (629 and 633) which have brightly marked and coloured feathers.

GENUS IXULUS, head is well crested, and stands out prominently. These birds are gregarious, arboreal in their habits. They are distinguished without much trouble, in Darjeeling, where they climb about slender branches of trees and shrubs, picking up insects and feeding much on soft berries. Ixulus is partial to wild yellow raspberries and the dark coloured brambles which are found growing on our hill sides. These birds are social and friendly, most of the species, which are common about Darjeeling, come, quite close to the house. They are often observed, swinging on to the thin branches of our shrubs and jungle plants.

(623) IXULUS FLAVICOLLIS, *Yellow-naped Flower-pecker*, is one of the commonest of the group. It is active throughout the day, and is frequently met with, in our compounds and gardens in Darjeeling. In size it is 5¼ inches. It is made out without much difficulty by its yellow coloured nape, below the crest, which is generally raised (perhaps not so prominently as *Yuhina gularis* 626) when hard at work among green leaves. This bird is about the size of a sparrow, and resembles it from a distance, in colour, side by side of course, you would find a good difference between these two birds. Colour of the Yellow-naped Flowerpecker is pale brown, above ; head is a richer shade, nape with a light yellow colour, easily noticeable, more so, when crest is raised ; the wings, beneath, are whitish in colour, which is more readily observed when the birds take to flight ; pale yellow plumage on underparts of the body ; bill light brown ; irides brown. These birds are generally found in small flocks, associating with other birds. Chesnut-headed Flowerpecker (624) is not common in Darjeeling. It is occasionally seen here ; but it prefers a lower altitude. Striated Flowerpecker is rarer still.

GENUS YUHINA, has a long, slender, compressed bill ; legs and feet strong and slender ; hind toe large.

(626) YUHINA GULARIS, *Stripe-throated Flowerpecker*, is plentiful in Darjeeling, and is seen as a rule in company with *Ixulus*, Hill-Tits, and Flowerpeckers, and the merry little Green-backed Tit (644) one feels that we are in the midst of old Darjeeling friends with these birds. This Flowerpecker displays a good deal of the characteristics of *Ixulus* and Tits. They evidently prefer high altitudes as this species is plentiful all along the road to Tongloo and beyond ; but once you get among the bleaker heights of Sandakphu and Phalut, you must say "good bye" to *Yuhina*, for this lively little bird is conspicuous by its absence. Its place is imperfectly, filled by Crossbills and Finches. Yuhina's preference for flowers and pollen insects, aided by its longish curved bill, makes it out as a true Flowerpecker. It can be seen, at times, clinging to a pendant bunch of flowers and buds, head down, holding on by its strong feet and claws in a manner, as is observed in some of the Tits. Its big crest of well developed feathers on its head stands up in a curled style above its forehead. This *Yuhina* is 6½ inches in size ; plumage is brown ; throat and breast a sort of wood brown (rufous) ; chin and throat is well marked with blackish lines ; lower parts of the body, orange-reddish; above, the tail, and tertiary (wing feathers) are olive brown ; primaries and secondaries black, the latter with olive brown margines. The remaining species of *Yuhina* are like *gularis* in habits ; but they are difficult to find. *Occipitalis* and *nigrimentum* are rare and not easily discovered. Both species frequent lower elevations and more secluded parts of the district.

(629) MYZORNIS PYRRHOURA, *Fire-tailed Flowerpecker*. This prettily marked species, seldom, comes into Darjeeling. They prefer higher altitudes of Senchal and Tongloo, where I have seen them on more than one occasion. Even in these places they are scarce. It appears to delight in well wooded parts of the country and seeks seclusion. Its bright colours aid us considerably to distinguish this species. It is 5¼ inches in length. Colour, above, is bright grass-green, with emerald colour on crown of the head ; tail bright red tipped with black ; lower plumage is pale in colour tinged with rufous on throat and upper parts of the breast, yellow on lower tail coverts ; green on the wing coverts and tertiaries, primaries black a few edged and tipped white ; bill brown ; irides brown.

(630) ERPORNIS ZANTHOLEUCA, *White-bellied Flowerpecker*, is frequently met with, when one is on low altitudes, it has not been known to ascend or visit Darjeeling. *Erpornis* is 5 inches ; colour, above, is light yellowish green ; feathers on the underparts are dull whitish. The crown feathers are elongated and pointed ; bill is longish, conical in shape, compressed strong and pointed, tip of the

upper mandible projects to a fine, notched, point : bill brown ; legs roundish ; irides light-brown. These birds are usually associated in small flocks.

(631) ZOSTEROPS PALPEBROSUS, *White-eyed Tit*, seldom ascends higher than 3,000 to 4,000 feet altitude in the district. They are gregarious. They associate in fairly big flocks in warmer parts of the district. You can hardly fail to meet them in Runjeet and Teesta Valleys where they are seen, strong and active, feeding among wild buds and flowers of plants and bushes, which abound in these parts at times, entering patches of cultivations and gardens of Lepcha hamlets. They are seen in flocks of 20 or 30, at times in bigger numbers. These birds enliven and make the hot enervating surroundings of the place cheerful, with their merry chirping, and brisk untiring movements. I have on rare occasions, in uncommonly warm summers seen one or two stray members of this species visit Darjeeling, probably come up in company with other small birds in their migratory journey ; but these chance visitors leave us on the first opportunity dull weather offers. *Zosterops* is 4½ inches ; bill blackish ; irides light yellowish brown ; colour, above, is light (Siskin) yellowish green ; it has a noticeable circle of close set, white, small feathers round the eye, which gives it a white appearance ; throat and upper parts of the breast, yellow (canary) ; below, body feathers are white, with a bluish tinge.

(633) CEPHALOPYRUS FLAMMICEPS, *Flame-fronted Flowerpecker*, this striking looking bird is not often seen in Darjeeling. I have observed it occasionally below River View, in thick jungle to the left of Tukvar Road. In habits it is, not unlike most of the Flowerpeckers. It is a pretty little bird, shy and unwilling to expose itself. In size *flammiceps* is 4 inches ; colour of male, above, is yellowish green ; bright on the lower body and upper tail coverts ; top of the head is brilliant orange-red ; breast is bright golden yellow ; wings dark coloured, edged with green, with two wing bars. Female is not so brightly marked and lacks the red colouring ; bill is plumbeous ; legs brownish. There is at present no record of the nidification of this species. I have but one, pretty little egg, unique in shape, size and colour.

SUB-FAMILY PARINÆ

We must, now, push on our enquiries to the Tits. These birds, as must already be well known, have, bill typically short, conic and stout. This group has been well defined by Nature, more so in shape of bill, which can scarcely be overlooked, when one or other of the

species are seen. They are mostly birds of small size, frequenting the temperate zone, in different parts of the world. We have a few species, which are common to Darjeeling and eastern side of the Himalayas. These birds appear to favour certain localities or altitudes where Nature has placed them. They don't seem to seek migratory advantages, gained by visiting either warm valleys in the district or plains of India, where the cold weather has withdrawn most of its summer associates. In habits they are gregarious, they prefer to forage among taller evergreens and trees to feeding on the ground, to which at times they descend. They are usually seen in company with mixed groups of small birds, which are hunting together chiefly for the security and protection offered against attacks of hawks and other tormentors. Tits join in with zest in the merry jollifications which are often in progress.

(634) ÆGITHALISCUS ERYTHROCEPHALUS, *Red-headed Tit*, or Titmouse, as it is commonly called, is a pert little bird. This species is plentiful in Darjeeling. Perhaps, more in evidence, towards the close of the cold weather, when most birds are away in the plains or near foot of the hills. They are usually seen hopping and climbing about the trees, not infrequently entering our gardens, and approaching quite close to the house by aid of the bushes and creepers about the place, out of Darjeeling, you will meet them, on trees along the road to Tongloo and a good way up to Sandakphu. This Titmouse is about 4¾ inches ; body is small, tail adds considerably to the length of the bird. The tail is slightly forked. The little rufous cap on top of the head makes them comparatively easy birds to distinguish. Colour, above, is cinereous, having a reddish tinge on the neck ; same colour extending to the back, lower body, upper tail coverts ; tail and wings, perhaps, a little darker in shade ; it has a broad black and white stripe extending past the eye and ear-coverts to the nape, which shows out conspicuously also the little black throat ; chin and lower parts of the body are white tinged below with rufous ; bill black ; irides brown. Remaining species of these tits are not common in Darjeeling. They are generally found at a higher altitude in the district and North Sikkim.

(644) PARUS MONTICOLUS, *Green-backed Tit*, is more in evidence in Darjeeling, throughout the year, than Titmouse, This friendly little bird seems to be best known of all Darjeeling birds. In many respects it is not unlike the English "Tom-Tit," as this interesting species was commonly called. Green-backed Tit bears a striking resemblance to it in colour and habits. It is always tame and cheerful and ready to make friends. For about 5 years or more we have, a male "Tom-Tit" which has taken up its abode, under the corrugated iron eaves, among shingles of the roof, in front of my window.

In spring he is joined by his "better-half," where they add a few straws and feathers to the old family nest. I have a dense potatoe creeper growing against the office, which was at one time a glazed verandah, when the creeper is in flower, pretty well throughout the year, it is visited by numbers of small birds which, seem, hardly to observe me, as I write at the window. Green-backed Tit is usually bolder than the rest ; when it comes to pick insects off the flowers. It is a pert little bird ; always keeps its feathers well preened, looks spruce, and meets you, first thing in the morning with a bob of the head, a sort of low bow, and jerks up its tail, wishing you a hearty greeting with a cheerful chirrup. I have not met its equal for boldness and cheek, should you have a broken pane of glass in your office window ; this tit will all but pop its head in to see what you are doing. When seen on the "Kharani" tree, just opposite, it is generally swinging about among the dangling flower buds, quite like an acrobat at work on the trapeze. Its height of accomplishment seems to be to hang head down, holding on with its strong little claws, and inspecting minutely the vertically drooping flowers, where insects consider a safe place to seek. refuge from their feathered assailants. This *Parus* is 5½ inches ; bill black ; irides brown ; colour is olive green, above, on the back, extending to tail coverts ; head black with white on the sides, cheeks and a nuchal mark ; wings grey ; median and greater coverts are black with white tips ; quills are black, most of them are tipped white ; tail black with white tips ; the neck, breast and part of abdomen black ; yellow below.

This prettily marked tit, does not possess a musical warble ; but it has been liberally endowed with a pleasant and cheerful whistle, when happy, it has a far reaching call for so small a bird, a sort of *tee-tee-cha-cha*, with a few other variation according to its disposition.

(650) MELANOCHLORA SULTANEA, *Sultan Yellow-Tit*, comes rather as a surprise for it breaks the record of Tits of small size. It ascends to no great altitude, like the Tits, it prefers a semitropical, climate and surroundings. It is usually found on the outskirts of forests ; on the Runjeet River it is frequently seen. This bird when met with is easily recognised. It is big in size ; thrush like in form. *Sultanea* is 8 inches in length ; colour, above, is black with a glossy greenish tinge, which shows out prominently. The Sultan Yellow-Tit's pointed, bright, yellow crest on the head, reminding us (slightly) of some of the Oriental potentates ; underparts of the bird are bright-yellow. This large tit presents an unique picture of one of the handsomest of *ampelidæ* we have in the district.

I shall here close, the account, of this big tribe *Dentirostres* ; to the seeming neglect of Accentors which I should have liked to have included : but they are chiefly high altitude birds and the few which visit Darjeeling are not anxious to show themselves.

TRIBE CONIROSTRES

Among other peculiarities, these are hard-billed birds ; wings fairly lengthened : tail generally short ; feet well adapted for both perching and progression on the land ; bill is thick, and conical in shape, lower mandible deeper than the foregoing tribes. Other distinguishing peculiarities we need not trouble, at present, about.

This tribe is composed of the following families :—

I.—CORVIDÆ	...	Crows and Magpies.
II.—STURNIDÆ	...	Mynas and Starlings.
III.—FRINGILLIDÆ	...	Sparrows, Weaver birds, Amadavds, Buntings, and Roselinnets.
IV.—ALAUDIDÆ	...	Larks.

FAMILY CORVIDÆ

Have strong bills, compressed, usually entire ; nostrils protected by long and numerous bristles : tarsus short ; feet strong ; claws curved. This family is composed of the Crows, Choughs, Magpies, Jays, Nutcrackers, etc.

SUB-FAMILY CORVINÆ, *(Crows and Magpies)*

Are so well-known to most of us, that an introductory description seems superfluous. Bill is stout, longish, and straight ; wings long and pointed in most of the species ; tarsus strong and protected by scales ; claws curved.

GENUS CORVUS, have thick, strong bills, conic in shape ; wings longish ; feet and legs strong, suitable for perching, toes capable of a good strong grip. Most of these birds are equally at home on the land.

CORVUS CORAX, and the big Tibetan Raven, we shall pass over also Corone, the Carrion Crow, as they are not likely to be met with either in Darjeeling or the district.

(660) CORVUS CULMINATUS, *Indian Corby*, we might call the common crow of Darjeeling, though it is not nearly so numerous here, as common crows are in the plains. These crows are seen often resting on trees, by the side of our big rivers in the district, now and then they are observed in the station, usually solitary, occasionally in biggish groups. In these parts Corby is not a favorite, owing to the bad news it is supposed to convey, when it settles on a tree near the humble dwellings of hill folk. Corby is shunned by the smaller *Insessores*, owing to its thievish propensities ; usually an unguarded nest of freshly laid eggs, attracts its cupidity. It takes unjustifiable pleasure in cracking eggs with a poke or two of its long bill or if not hard shelled, crushes them between its mandibles, then sucks up the nutricious substance held in the saucer like nest ; but it is dead nuts on any bird trying the same game on its own eggs. However we must not blame it rashly for tastes and propensities over which it seems to exercise but little control. What seems rather annoying is the mighty cawing he, and his gathered together flock of comrades, kick up, when the crested Honey-Buzzard, has taken a fancy into its head to try the taste of a Corvine egg or two, and had just started sampling an outlying nest. The noise created by the much injured Corby is of course too much for the quiet jungle loving Buzzard, before it has had time to taste the eggs it has just cracked, it is off, once more, with a dive into the forest with its fingers (figuratively) in its ears to keep out the noise and racket followed by the much injured crows. The Corby is 21 inches long ; bill and legs are black ; irides dark brown ; plumage, above, is glossy black, beneath dull black.

(663) CORVUS SPLENDENS, *Common Indian Crow*, requires, but little introduction, if it has not already made itself known to you. The name *splendens* is a remarkable title for so somberly coloured a bird. May be, *splendens* refers to the splended cawing it kicks up in the plains, where these birds, make themselves quite at home, and look upon city life as their happy hunting grounds. The famous Vieillot must have had, better reasons than these, for conferring so great an honor on this species. May be his thoughts ran in this direction.

Where will you find a bird so richly endowed with fertile imagination, richness of intellect and a reasoning disposition. Leaving aside the low tricks some of its fraternity are guilty of. It seems to possess ; but a poor share of instinct, for it cannot build even a decent nest, and requires great mental calculations before it can discover the egg, that the wily koel (*E. Orientalis* 214) has just found a quiet haven for. Taking these draw backs into consideration, how amazing was the selection of name *splendens*. In placing this the commonest of birds in the front rank of intelligence. Before passing from this species, I shall give an instance of marked reasoning ability found in these birds. It is only one of many, which could be enumerated. Whilst I was at Delhi, some years ago, in a house on the banks of the Ganges, a violent thunder storm burst over the city, late in the afternoon. Most of the crows which hunted for food, during the day, experienced insurmountable difficulties, in face of this tornado, in crossing the river, where the avenue of tall trees, some half a mile, further, held nests full of hungry young crows. They, the city crows, marshalled themselves on the south bank of the river, formed in a compact single file, and took their instructions and advice from certain veterans, leaders among them. First they rose and flew high in the air, as it were at a given signal, in remarkably fine order, line-of-battle ; but the strongest fliers did not get beyond the middle of the river, half a dozon might have proceeded to battle with the elements, but these turned, on seeing their comrades driven back. Then they stood on the Delhi shore, once again, and held a hurried counsel of war, for a brief space, consisting of a good deal of cawing, whilst aides-de-camp, on the hop, or side skipping, fly briskly down the line, conveying the general's orders. After all had rested from fatigues of the last flight, as their late, gaping beaks, had graphically indicated, how hard had been the struggle, the signal was given, and up they flew once more, with fresh determination ; but with similar results. I counted about six such attempts, how many had occurred previous to this, I cannot say. Dusk of evening was fast approaching ; little ones in the rookery were hungry ; the storm raged as fiercely as ever ; the river had not yet been crossed. Another hurried council of war was held ; another batch of fresh orders were given for a last mighty effort for the final onset. There must be no doubts about the matter this time ; to my surprise and of those who watched the contest with me, from the wooden balcony overlooking the river, at a given signal all rose barely off the ground, as they progressed over the river their legs at times, seemed to touch the surface of the water. On they toiled. It was noticeable that at an apparently slight lull in the storm, the signal to fly was given. It was doubtless a brave attempt. Many casualties seemed certain. On they

battled with a determation, worthy of a good cause, till they had, by dint of hard flying and perseverance, gained the opposite bank of the rapidly, flowing Ganges. Once safely across, a longer rest was indulged in. In this manner, and by short flights, they crept along at short intervals till they reached the foot of the avenue. Once there, they flew upwards, in a perpendicular fashion, as though keeping the trunks of trees between them and the storm. Securely regained their nests where their anxious young ones were awaiting their return. What occurred to us at the time was, that the crows or their leaders noticed two facts about the storm which raged. That the higher they flew the less progress they made, owing to unevenly distributed force of the tempest, that the storm raged and diminished by fits and starts. Several illustrations could be given of the intelligence of birds in general, but few seem to exhibit the marked mental ability found in *Corvus splendens*.

GENUS NUCIFRAGA, (*Nut-crackers*) are a different type of bird from *corvus* ; they are more brown in colour, with spotted white plumage. Inhabit high altitudes and feed much on seeds and nuts. Bill is straight and longish, with a blunt tip ; nostrils hidden under short bristles ; 4th and 5th quills of the wings are the longest ; tail inclined to be lengthened ; tarsus and toes moderately strong ; hind toe longish, claw slightly curved.

(666) NUCIFRAGA HEMISPILA, *Himalayan nut-cracker*, is found fairly common on nearing Tongloo, then again at Sandakphu. These birds take kindly to cold unhospitable heights, where chilly blasts, off snow clad Himalayas, seem to warm the cockles of their hearts. It is usually in such surroundings that their spirits rise to greater buoyancy and vivacity of life. When you meet them at Phalut or Jongri in February or March, in a cutting north wind, which sends a shiver through you, they are cheerful and happy, and seem to caw out—"Blow, blow thou winter wind, thou art not so unkind as man's ingratitude"—not that I can recollect any instance of unrequited errands of mercy performed by these Nut-crackers ; but their forelorn appearance somehow or other brought these thoughts into my mind on viewing them. The Nut-cracker is not unlike a crow prettily speckled with black and white. I was once told that crows at Sandakphu were speckled ! This *Nucifraga* is 15 inches in lengfth. It has a good strong bill which it finds a most useful accessory or excavating, etc. The particular markings and colour of this species cannot be mistaken, as it is, as far as I can remember the only bird at this elevation, which answers to the same description. Pure white on the tail feathers, usually first attracts attention. These feathers are broadly tipped with white, what appears to be black from a distance is in reality light umber brown, on the head, wings

and a good portion of the tail ; under tail coverts are pure white ; ear coverts, back, breast, etc., are spotted with white. I have seen this species, on one occasion, come and settle, on a chesnut tree below the house, in mid winter, when it was driven by inclemency of the weather from its natural hunting grounds, but these occasions are few and far between, it appeared to have, made a bee line from Sandakphu, which was white with snow and looked like, more to follow. Its flight was not what might be expected of a *corvidæ*. It flew more like a wood-pigeon or arboreal thrush : Nut-crackers breed near the snow line beyond Jongri. These birds have a partiality for nuts and are found as a rule in primeval forests, when such places are available, and where walnuts abound. I have seen a forest of giant walnut trees, in North Sikkim near the snows, with the nuts lying layer upon layer probably a hundred years undisturbed, in some places over 24 inches deep of nuts in various stages of decay. This forest saw the Nut-cracker and many a high altitude bird in their natural surroundings. I have seldom experienced the same feelings, as the day I stood under those mighty walnut trees, in a fairly primeval forest, with nature in its garb and habits unsoiled by touch of civilization. Objects which presented themselves to the eye seemed conducive to study of nature at her best. The Nut-cracker, which I had come specially to visit, appeared quite at home. It drove its strong bill with ease into soft parts at the base of walnuts, just where they had broken off from the parent stem, splitting half ripe nuts like a wedge into equal parts, thus leaving bare the kernel. Birds in general, though shy in this forest, exhibited either curiosity for or absolute disregard to, two legged mortals whom they, ostensibly had not learnt from experience to dread, or view with suspicion. Most migratory birds displayed all their old likes and dislikes. Birds in general seem to have their prejudices. A few years ago I chanced to witness a pretty sight, of a mixed company of little birds, enjoying a merry frolic about twenty yards or so, from the house, just a short way round the corner of the garden path leading into a thickly wooded glen-like retreat, seeing a musical garden party going on in full swing : *Leu: fuscorentris*, White-throated Fantail, waltzed lightly from branch to branch, Tom-Tits were there, and little Willow Warblers, Flycatchers and Flowerpeckers, Fairy Blue-Chat, Bush-chats, Chat-thrushes and Merula thrushes and many more besides. I went to fetch a friend who was near by at the time ; but the moment we came stealthily round the corner, *Sibia*, who was keeping "sentry go," at the time, set up a shrill whistle, which sent all the birds, mostly small ones, scuttling, like naughty children, off under cover, the performance came to a sudden stop— The moral if we could find one, would be—"please don't peep—if you are invited, take your seat."

SUB-FAMILY GARRULINÆ

Have shorter bills, more or less conical in shape ; wings short and rounded ; tail in most of the species is very long and graduated ; legs and toes strong, and longer than the former birds, which aids them in their more arboreal habits. "The distinction from Corvinæ is not obvious in all cases ; but the Garrulinæ are usually smaller birds, with shorter wings and longer tail, of great activity and more arboreal habits than crows and when on the ground usually move by hopping instead of walking. Blue is the characteristic colour." They seem to prefer, quiet surroundings of simple Lepcha crofters, than the turmoil of town life.

(669) GARRULUS BISPECULARIS, *Himalayan Jay.*

(670) GARRULUS LANCEOLATUS, *Black-throated Jay.* Both these species are much like each other in colour, habits and peculiarities. They are rarely seen in Darjeeling. Himalayan jay is found on higher altitudes, whilst black-throated species prefers lower elevations. I have seen at Kalipokri, the former bird, comfortably located, for many years, near Yak farmers' little dwellings on the road to Sandakphu. Both these species have, white shining patches on the wings ; tails longish. Though both jays are similar in appearance, they have slight variations in colour. The former bird above, is light bay or fawn brown ; it has a black stripe on side of the head, below the eye and ear-coverts ; some of the wing-coverts and quills are black ; white is found on edges of the primaries ; wing bars pale blue and black ; tail black, white on the coverts ; beneath, it is pale in colour. *Bispecularis* is 13 inches in length. *Lanceolatus* is a shade larger in size having the head, crest and face black ; tail blue, barred with black and tipped white ; beneath, throat, and upper parts of the breast are black ; underparts of the body have a reddish tinge.

(672) UROCISSA SINENSIS, *Red-billed Blue-magpie*, you will likely see, in the forest on the way up to Senchal, where I have seen them on several occasions, oftener perhaps in spring, where this species build on tall trees. When observed flying from tree to tree, the fine long tail of *Urocissa* is displayed to no small advantage especially when shooting after an insect high up in the air, then settling down again on its perch. This magpie occasionally comes in to Darjeeling, in spring, where its loud metallic sounding, though cheerful and pleasant, call is often heard. This *Urocissa* is 24 inches in length, of which the tail is fully 16 inches, so that it is quite $\frac{2}{3}$ length of

the bird. These birds are usually seen, solitary, associating in pairs ; at times, feeding and exercising themselves not far from other groups, though they don't seem to be on the best of terms with small birds, merely on sufferance. The more timid and cultured ones can't appreciate their rough and ready manners. In habits the Blue-magpie is restless, hopping about and trying various fancy tricks on the branches, with damage to its longest train feathers. Or flying from tree to tree, usually tallest ones in the forest. These magpies keep much to the tops of trees, high up among the foliage, occasionally descending to lower ' branches. Colour of this species, above, is ash, with a purplish tinge ; upper tail-coverts are spotted black ; head, neck and breast are deep black ; tail feathers are edged bluish, broadly tipped black and white ; wings and tail are cobalt blue ; beneath from breast is whitish with a strong tinge of ashy purplish colour. The yellow bill showing out distinctly. This magpie has a shrill call, much resembling the Lepcha name Tying jong ring, in a metallic pitch and tone. *Sinensis* lives much on ripe fruit and berries. It is very partial to fruit of the papiya tree, which is found in gardens at a lower elevation ; but it cares little to descend to low altitudes. I had a pair of these birds for several years. They grew tame and displayed all the characteristics of their congeners. Together with fruit, ground parched gram steeped in water was their usual diet, but grasshoppers and caterpillars had to be given occasionally as they, appeared to lose weight if this latter food was withheld.

(673) CISSA SINENSIS, *Green-Jay*, or as some people would like to call it the "blue jay" (of course not *Coracias*, Indian Roller 123) is the richest coloured bird we have of this group. This beautiful jay is fond of more tropical skies and vegetation. It is seldom seen over 4,000 to 5,000 feet elevation. You will doubtlessly meet the Green Jay, in warm valleys in Sikkim and denser forests skirting Teesta and Runjeet rivers, in the district. Occasionally you will see species, at the foot of Mineral Springs forest, by the side of Rungdong khola, where it can be seen hunting among denser foliage of trees for bigger class of insects, locusts and mantes, sometimes moths and butterflies. *Sinensis* is 15½ inches in size ; bill and legs coral red ; irides dark chesnut ; orbits vermilion. The rich, beautiful plumage of this species is most striking, more so, when it is met with foraging among green leaves of the woods. In general appearance it is a pretty, pale chrysophrase green, at times with a bluish tinge ; head has an ample crest, which is yellowish in colour ; it has a prominent black streak or line from lores to nape of the neck, past the eyes ; wing coverts and quills are dark brick red ; secondaries are tipped pale bluish-green and edged black ; dark red on the coverts and quills gives a striking "fingure marked"

appearance to the wings, caused by tips of the feathers, which appear to view, horizontally barred ; tail tipped with black and white, feathers of which are bright green. The Green Jay is easily tamed when caught young and brought up by the hand. I have seen it on more than one occasion, in Lepcha and Nepalese, solitary homesteads, on the hill sides about 3,000 feet elevation, where it had discarded the old, home-made bamboo cage and hopped about the house, or perched on rafters of the hut, giving a knowing caw like sound, when the family meal was about to be prepared, and gave a rare old fashioned look when a bit of meat was being chopped up. I am not quite sure if it had taken to such luxuries, but I rather think it had, from past experience of different species of *Corvidæ*. This bird is said to live to a good old age if no accidents befall it.

SUB-FAMILY DENDROCITTINÆ (*Magpies*)

Also called, Tree-crows, owing to their arboreal habits. They have short and curved bills ; nares covered with short feathers wings rounded ; tail long and graduated ; tarsus short and strong. These birds spend most of their time in dense forests.

GENUS DENDROCITTA, bill is short, compressed and well curved, wings short and rounded, 5th and 6th quills the longest, secondaries slightly shorter than primaries ; tail longish and wedge shaped ; feet short ; hind toe and claw longish.

(674) DENDROCITTA RUFA, *Common Indian Magpie*, never ascends to any great altitude, in the district. It is rarely seen in Darjeeling. It frequents more wooded portions. This magpie usually prefers low elevations, where it may be seen in bigger numbers. In the Terai it is fairly common. This bird goes by the name of Handichacha in Bengal, partly owing to its propensity for sampling food meant for the household. Others again state that the name refers to its metallic call or ruminating with the bill, which sounds like the scouring or scraping of country made cooking utensils. Both explanations have a substrata of truth. Second name applied to this magpie is Takka-chor, a name gotten on account of the peculiar noise it sometimes makes, resembling counting of rupees. Sounds not infrequently heard, issuing, from mysterious nooks and crannies of a Bengal back yard. Which noise usually sends the master of the house pelting after his little store of silver, which he

thinks is being quietly made away with or milched. *Rufa* is 16 inches in length. In appearance it differs from the foregoing species ; colour, above, is sooty brown, on head, neck and breast, darkest about the head and throat ; back and upper tail coverts are ferruginous ; light grey about the secondaries, part of the quills are black ; tail is ash in colour, tipped with black ; lower plumage of body is ferruginous ; bill black ; irides bright red.

(676) DENDROCITTA SINENSIS, *Himalayan Magpie*, ascends to an elevation of 6,000 feet. It is met with in the district by the side of forests, usually near jungle clearings for cultivation or near small villages and hamlets which are frequently seen, on our hill slopes. I saw this species occasionally near Gowala's bathans, as the milkmen's hill dairies are, called, such places seem favourite resorts for Himalayan Magpie. In size this *Dendrocitta* is 16 inches ; colour, above, is the same earthy brown which was observed on *rufa*, being perhaps, of a more chesnut tinge ; top of the head, nape and hind neck are bluish ash in colour ; forehead and a patch over the eyes black ; upper coverts and lower back ash ; wings black with a conspicuous white spot, found so frequently in most birds belonging to this species ; tail ash and part black ; lower plumage ash ; under tail coverts rich chesnut.

(677) DENDROCITTA FRONTALIS, *Black-browed Magpie*, is also found near Darjeeling, but it is much rarer than any of the foregoing species of this family. It is seldom met with, except at a high elevation. This bird is usually made out by its longer tail. The bird itself is shorter than *Sinensis*. *Frontalis* feeds much on insects caterpillars, etc. When fruit and berries are available it does not lose a chance of a change of diet. In size it is 15 inches long ; bill and feet black ; irides brown red. It is known in these parts as Kolio-ko, but more commonly as Koklio-kok, which name is also applied to *Sinensis* and *rufa*. Hill folk say that these birds say kao-ho, as soon as they observe a stranger or perch beside a lonely hamlet, a literal translation of this particular kao-ho, is "who the 'juice' are you' "! Colour of frontalis is chesnut on the back, scapulars, tail-coverts, flanks and underparts of the body ; deep black on the forehead, ear-coverts and foreneck ; wings and tail black ; most of the wing-coverts are pure ashy grey ; remaining portions, neck, breast and belly are greyish white.

Himalayan and Alpine choughs are seldom seen except on high elevations in Sikkim, beyond Jongri and nearer the snows. These birds are fairly plentiful in Thibet.

FAMILY STURNIDÆ (*Starlings*)

These well known birds require, but little introduction. The bill is straight, has a slight curve, longish in size, compressed and a little notched in some species ; wings long and somewhat pointed ; tail shortish ; tarsus short. They are social and gregarious and usually feed on the ground, where they are at ease and hop about with much facility.

They are divided into :—

I.—STURNINÆ ...	...	Starlings and Mynas.
II.—LAMPROTORNINÆ	...	Glossy Mynas or Grakles.

SUB-FAMILY STURNINÆ

Bill moderately long, compressed, straight in some of the species, in others a bit curved from the base, which is well supplied with soft dense plumes ; generally 2nd primaries of the wings longest ; tail short, a little rounded at the tip ; tarsus strong and longish. This Sub-family comprises two groups of birds first Starlings, whose plumage is more uniform, black in appearance, and second Mynas which are more closely associated with Indian life, are pied in colour.

GENUS STURNUS, bill longish, base a little depressed, culmen slightly arched ; tail short ; tarsus longish ; hind toe long.

(681) STURNUS VULGARIS, *Common starling*, is rarely met with in the district. Glossy Black Starling is fairly common in the north-west of India.

(683) STURNOPASTOR CONTRA, *Pied Starling*, is found in the plains and terai ; but it seldom ascends beyond a few hundred feet in the district.

GENUS ACRIDOTHERES, bill is shorter, stout and compressed ; nares protected by short plumes ; tail more rounded in appearance ; tarsus and feet strong ; toes longish, claws fairly curved ; head partially crested. Some of the species have a marked, yellow coloured space behind and below the eyes.

(684) ACRIDOTHERES TRISTIS, *Common Myna*. This is the only species we need, give a closer examination to as most of the birds, belonging to this family (Mynas and Starlings) are not found in the district. Those which visit us occasionally, seldom come into Darjeeling, and are birds which prefer to locate themselves in the plains. *Tristis* on the other hand, has made itself quite at home, here. It is frequently met with in Darjeeling, feeding on the roads, and perching on roofs of houses. These birds seem to prefer town life, with its hurly burly to quieter surroundings. It may be, whilst on the roofs, a wide sweep of country they get from these admirable perches, which Darjeeling offers suits their tastes better than, the more limited view offered from big leafy trees. However it is not only the outlook, which fascinates Mynas but owing to their omnivorous appetites, chances of food are more secure. These birds, together with other species of Mynas, have the characteristics found in crows, with whom they associate freely, of congregating at fixed spots, a biggish tree usually ; as dusk of evening sets in and the sun is sinking in the west. This peculiarity is more noticeable in the plains, where different species of Mynas collect in much larger flocks. This meeting together is obviously for personal safety and perhaps for comparing notes of their day's forage, of new fields discovered, and where dainty morsels of food are likely to be picked up, for so, one may judge from the continuous chatter these birds keep up during long summer evenings, and sometimes on wakeful moonlight nights ; or the small hours of the morning. At these socialistic meetings in the plains, doubtlessly, the common crow loses no opportunity of acquiring information about fresh fields and pastures new ; but it can be safely taken for granted that it does not readily disclose its special reserves, from our experience of this gentleman. At times, like the crows, Mynas hold a drum head court-martial and administer corporal punishment to offending members of the community for transgressing Bird-laws. As *tristis* is the commonest species of Mynas, here, it will not be difficult to recognise. In size it is 10 inches ; bill and orbits yellow ; colour, above, is dull quaker brown, which Linnæus named tristis or "sad colour," on the back and wing-coverts ; lighter in plumage beneath ; primaries black, a conspicuous white wing spot ; tail black with the feathers tipped white ; glossy black on the head, neck and breast ; lower parts of abdomen and under tail-coverts white.

GRAKLES or HILL-MYNAS, are common caged birds, frequently met with outside Indian stores (shops) where it can be observed at leisure. In their natural state they are rarely met with in the district, as they, chiefly, frequent, forest and more wooded parts in Nepal Terai and Assam.

FAMILY FRINGILLIDÆ

Finches comprise, a large family which are, of the most part, birds migratory in their habits, excepting Weaver-birds, Sparrows and Munias ; preferring usually a temperate climate. We have many species, which are found in the district. Bill is short, thick and conical in shape ; wings in most of the species are long and pointed ; tail forked in most ; tarsus strong ; feet suitable for perching and progression on the land. Their flight is strong and erratic. In habits, they are social. • In winter, chiefly, they congregate in big flocks. They are mostly bird of small size.

This family is divided into :—

I.—PLOCEINÆ	...	Weaver birds.
II.—ESTRELDINÆ	...	Munias and Wax-bills.
III.—PASSERINÆ	...	Sparrows.
IV.—EMBERIZINÆ	...	Buntings.
V.—FRINGILLINÆ	...	Grosbeaks, Bull-Finches, Rose-Finches, etc.
VI.—ALAUDINÆ	...	Larks.

I.—PLOCEINÆ.

These little finches are well known in the plains for their ingeniously constructed bottle or retort shaped nests, which are seen in most places. They are social and gregarious. Their nests are usually found in colonies, of these weaver birds, hanging from Palm and Babool trees. Bill is somewhat lengthened, 1st primary, of the quills, minute ; tail fairly short ; legs and toes very strong ; lateral toes lengthened ; hind toe long, claw strong.

(694) PLOCEUS BAYA, *Common Weaver-bird*, though it is not found in the district we cannot do better than turn our attention to this interesting little bird. Their ingeniously worked, retort shaped nests are frequently, met with, hanging in the terai from thorny trees or further afield in the plains, where Cocoanut and Palmyra Palm trees abound, nests are fixed, suspended from the fronds. These clever little artizans, display great skill in nest building. I have, often, watched them with interest, on a spring morning, laboriously at work, weaving their nests snug and secure. Few are the intruders, in the shape of reptiles, smaller mammals, or big birds, who

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VI.—ALAUDINÆ	...	Larks.

I.—PLOCEINÆ.

These little finches are well known in the plains for their ingeniously constructed bottle or retort shaped nests, which are seen in most places. They are social and gregarious. Their nests are usually found in colonies, of these weaver birds, hanging from Palm and Babool trees. Bill is somewhat lengthened, 1st primary, of the quills, minute ; tail fairly short ; legs and toes very strong ; lateral toes lengthened ; hind toe long, claw strong.

(694) PLOCEUS BAYA, *Common Weaver-bird*, though it is not found in the district we cannot do better than turn our attention to this interesting little bird. Their ingeniously worked, retort shaped nests are frequently, met with, hanging in the terai from thorny trees or further afield in the plains, where Cocoanut and Palmyra Palm trees abound, nests are fixed, suspended from the fronds. These clever little artizans, display great skill in nest building. I have, often, watched them with interest, on a spring morning, laboriously at work, weaving their nests snug and secure. Few are the intruders, in the shape of reptiles, smaller mammals, or big birds, who

(684) ACRIDOTHERES TRISTIS, *Common Myna*. This is the only species we need, give a closer examination to as most of the birds, belonging to this family (Mynas and Starlings) are not found in the district. Those which visit us occasionally, seldom come into Darjeeling, and are birds which prefer to locate themselves in the plains. *Tristis* on the other hand, has made itself quite at home, here. It is frequently met with in Darjeeling, feeding on the roads, and perching on roofs of houses. These birds seem to prefer town life, with its hurly burly to quieter surroundings. It may be, whilst on the roofs, a wide sweep of country they get from these admirable perches, which Darjeeling offers suits their tastes better than, the more limited view offered from big leafy trees. However it is not only the outlook, which fascinates Mynas but owing to their omnivorous appetites, chances of food are more secure. These birds, together with other species of Mynas, have the characteristics found in crows, with whom they associate freely, of congregating at fixed spots, a biggish tree usually ; as dusk of evening sets in and the sun is sinking in the west. This peculiarity is more noticeable in the plains, where different species of Mynas collect in much larger flocks. This meeting together is obviously for personal safety and perhaps for comparing notes of their day's forage, of new fields discovered, and where dainty morsels of food are likely to be picked up, for so, one may judge from the continuous chatter these birds keep up during long summer evenings, and sometimes on wakeful moonlight nights ; or the small hours of the morning. At these socialistic meetings in the plains, doubtlessly, the common crow loses no opportunity of acquiring information about fresh fields and pastures new ; but it can be safely taken for granted that it does not readily disclose its special reserves, from our experience of this gentleman. At times, like the crows, Mynas hold a drum head court-martial and administer corporal punishment to offending members of the community for transgressing Bird-laws. As *tristis* is the commonest species of Mynas, here, it will not be difficult to recognise. In size it is 10 inches ; bill and orbits yellow ; colour, above, is dull quaker brown, which Linnæus named tristis or "sad colour," on the back and wing-coverts ; lighter in plumage beneath ; primaries black, a conspicuous white wing spot ; tail black with the feathers tipped white ; glossy black on the head, neck and breast ; lower parts of abdomen and under tail-coverts white.

GRAKLES or HILL-MYNAS, are common caged birds, frequently met with outside Indian stores (shops) where it can be observed at leisure. In their natural state they are rarely met with in the district, as they, chiefly, frequent, forest and more wooded parts in Nepal Terai and Assam.

FAMILY FRINGILLIDÆ

Finches comprise, a large family which are, of the most part, birds migratory in their habits, excepting Weaver-birds, Sparrows and Munias ; preferring usually a temperate climate. We have many species, which are found in the district. Bill is short, thick and conical in shape ; wings in most of the species are long and pointed ; tail forked in most ; tarsus strong ; feet suitable for perching and progression on the land. Their flight is strong and erratic. In habits, they are social. In winter, chiefly, they congregate in big flocks. They are mostly bird of small size.

This family is divided into :—

I.—PLOCEINÆ	...	Weaver birds.
II.—ESTRELDINÆ	...	Munias and Wax-bills.
III.—PASSERINÆ	...	Sparrows.
IV.—EMBERIZINÆ	...	Buntings.
V.—FRINGILLINÆ	...	Grosbeaks, Bull-Finches, Rose-Finches, etc.
VI.—ALAUDINÆ	...	Larks.

I.—PLOCEINÆ.

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can rob these little colonies of weavers. This little Finch is often taken in hand, not of course for its special benefit, and successfully trained to perform several remarkable feats. Such as loading and firing of a small toy cannon, on wheels with a perch, above the touch hole. The loud report, with which this cannon is discharged is startling, nevertheless, the little gunner "sticks" to its perch with unruffled fortitude, though the discharge has made the gun, to rebound at least a foot or two in its recoil. Baya, when it has recovered its balance, merely tips up its small bill and head, as much as to say "what do you think of that!" The whole performance is so striking that, you are left pondering over vague psychological problems of instinct and intelligence. The next feat this sweet little bird performer treats one to, is: bits of papers are handed to the group of people watching the unpretentious exhibition, who write on it, then indicate with a nod or sign, to one in the company, the letter is intended for. Baya takes the note between its bill and delivers it. This part of the performance appeared to be a bit beyond the comprehension of baya, for it invariably took the message to the persons who apparently showed the greatest anxiety to get it; usually one it was not intended for. However we were all fascinated with the small performer and longed to reward it personally; but its requirements were small and humble a few bits of silver and copper which were collected went into the pockets of its master. In size this species is 6 inches; bill black; irides dusky brown; plumage is dull brown, above, tail and wing feathers edged paler; head bright yellow; upper tail coverts rufous brown; breast bright yellow; under parts of body feathers whitish; tail coverts are white, buff on the flanks.

II.—Sub-Family ESTRELDINÆ

Munias or Amadavads are well known birds in India, they resemble in many respects the last group. They are of small size; bill large and conical in appearance; wings short and rounded; feet large; tail inclined to wedge shape.

(697) Munia Malacca, *Black-headed Munia*, is rare.

(702) Munia acuticauda, *Himalayan Munia*, is frequently seen below 5,000 feet elevation, usually in biggish flocks, feeding on grass seeds and small grain called cungni. They keep up a cheerful chir-

ping whilst foraging. They build big globe shaped nests, compactly woven of flowering grass stems and thin straws. The Munia is well known in the plains, as a caged bird. It is slender in form and has dull sparrow-like plumage, though not so distinctly marked, as you must already know.

(704) ESTRELDA AMANDAVA, *Red Wax-bill*, or Red Munia as it is commonly called is a beautifully coloured bird. It is easily tamed and takes kindly to captivity. These qualifications together with its rich musical warble makes it a species in much demand in bird-markets in the plains, where they are frequently seen crowded together in country-made bamboo and reed cages. In these cramped surroundings they appear to be bright and cheerful. Flit actively about, displaying their gay colours, whilst most of the cock birds pour forth quite a canary-like warble, though perhaps, not quite the same compass in trills and warbles. Near this district, they are found in flocks in their native element in Sub-Himalayan tracts, Assam and the Terai.

SUB-FAMILY PASSERINÆ *(Sparrows)*

These birds must be more familiar, than even Munias and Amandavas. Bill is stout and strong, a little buldged at the sides, tip moderately compressed, ridge broad and convex; wings moderate in size, 1st, 2nd and 3rd primary quills equal in length; tail moderate, slightly forked.

(710) PASSER MONTANUS, *Mountain Sparrow*, differs but little, in colour generally, from *indicus* for this reason it is often mistaken for the ubiquitous house-sparrow of the plains. In habits it differs not a little. This little mountain species is plentiful in Darjeeling, sometimes seen in small flocks, occasionally in solitary pairs, which will be more noticeable when observed in certain localities, where *montanus* has set up, more especially, its abode. When feeding or enjoying a dust bath by side of the road they usually collect in bigger numbers; they are social and gregarious. They do not build or roost in colonies to so great an extent as do Indian House-Sparrows. In Darjeeling I have frequently seen them building under caves and ridges of corrugated iron roofs, where they enter by an aperture, hardly big enough to admit the hand, should it be found desirous of examining more closely the construction of the home. Nest, itself is fully two or three feet away from the opening. *Montanus* is 5 inches in size. Sexes are alike. Colour above, is rusty chestnut

on the back and wings, streaked with black ; shoulders chestnut ; two wing bars, whitish in colour ; upper tail coverts and rump yellowish brown ; quills dusky ; head dull chesnut ; black stripe below the eyes ; part of ear-coverts, chin and throat are black ; sides of the neck white, beneath is ash in colour, whiter about lower abdomen and under tail coverts ; dull yellowish brown tinged on the breast and thighs.

(706) PASSER INDICUS, *Indian House-Sparrow*, common to the plains, differs in habits and in colour (markings). At its best it is a saucy little bird, and appears to have tormented, not a little the lives of some sojourners in the east. Nevertheless I have many pleasant recollections of this sparrow and its naughty ways. It is about 6 inches in length. Slightly bigger than *montanus*.

SUB-FAMILY EMBERIZINÆ *(Buntings)*

Here you have birds of Passerine family or Order, which have the upper mandible, smaller, the lower mandible is broader. It has a typical palatal protuberance, found in many of the species, which makes buntings easily distinguishable from other birds belonging to *Fringillidæ* and allied groups. These birds prefer a temperate climate, most of them are winter visitants here. Legs are moderate in size and claws slender. They are sombre in colour, many of the species display a little colour, yellow marks and stripes on the crown and sides of the head. Buntings are divided into three groups.

I.—TRUE BUNTINGS.

II.—YELLOW CORN-BUNTINGS.

III.—CRESTED BUNTINGS.

I.—TRUE BUNTINGS.

GENUS EMBERIZA, bill lengthened, mandibles unequal ; wings longish, 2nd and 3rd quills are longest ; tail moderate, outer feathers display a little white.

(713) EMBERIZA CIA, *White-browed Bunting*, is first on the list, which is found in the district ; but this bird is met with only on rare occasions chiefly on high altitudes. It is known as the European Buntings.

(715) EMBERIZA HORTULANA, *Ortolan Bunting*, as it is called. This species is much sought after in its fattened condition for Epicures' tables. They are seldom met with except in the cold weather, and in company with other species of *Fringillidæ* with whom they associate in big flocks. They visit Darjeeling on approach of winter and remain a week or two in the neighbourhood, before descending to warmer climes. It is about 6 inches in size; Bill is reddish; plumage, above, is reddish brown with streaks; wings and tail dull brown; it has a white patch on outer tail feathers; the head, neck and breast are grey with a greenish tinge; a pale yellow streak on side of the head, also a central streak of the same colour on the throat; beneath, plumage is ferruginous.

II.—YELLOW CORN-BUNTINGS.

Wings and tail are longish; bill strong and less conic, both mandibles nearly equal in length, palatal knob less perceptable. The white patch usually found on the buntings is absent in two of the three species of Corn-buntings. These birds are gregarious and settle in large numbers on fields of ripening grain in winter.

(721) EUSPIZA MELANOCEPHALA, *Black-headed Bunting*, seldom remains more than two or three days with us in early spring, when they ascend to high altitudes to breed. I found a nest on one or two occasions, near the ground, on upper moorland like country, near open scrub lands. This Bunting is 8 inches in size, colour, above, is rich chesnut on back and scapulars, a tinge of yellow on rump and upper tail coverts; bright yellow edgings on the feathers; head black; bright yellow on the chin, breast and lower part; sides of the breast chesnut. These birds usually go for wheat and barley fields in the district, Sikkim and Thibet.

III.—CRESTED BUNTINGS.

These birds have black plumage and heads crested.

GENUS MELOPHUS, bill is compressed, tip slightly notched; wings short; hind claw longish, head with a prominent frontal crest.

(724) MELOPHUS MELANICTERUS, *Crested Black Bunting*, visits Darjeeling on its migratory journey to the plains in winter. It is rare in this district, usually found solitary or in pairs and prefers more stoney country, brows of the hills and short scrub jungle. It builds at a considerable elevation; usually beyond Jongri. The Crested Bunting is 6½ inches in length, colour of the male is glossy,

bluish black ; wings and tail dark cinnamon colour. Female is brown, above, a tinge of olive about the edges of the feathers ; lower parts reddish white with darker streaks ; quills and tail pale cinnamon ; crest shorter than the male.

SUB-FAMILY FRINGILLINÆ

This is the V group of Finches. They differ considerably, in structure ; size in some of the species, and in colour from the foregoing divisions. Bill is thick and conical, varied in form, short in size, puffed out margines in some ; whilst in other species they are slender and longish ; wings longish ; whereas we found, the first primary quill, minute in the former birds, these finches are without it. *Fringillinæ* live chiefly on fruit and hard seeds which they crack with ease, between their strong bills and eat the kernel. Their feeding grounds can usually be observed by leavings of the hard shells, and husks lying on the land below. Most of these birds live in temperate climates, a few migrate in winter to the plains. Male differs considerably in colour from the female, which is not so brightly coloured.

Fringillinæ are divided into :—

I.—GROSBEAKS.
II.—BULL-FINCHES.
III.—CROSS-BILLS.
IV.—ROSE-FINCHES.
V.—TRUE-FINCHES.

I.—GROSBEAKS.

These giant finches frequent as a rule, more temperate climates. They are forest loving birds, occasionally leaving their natural surroundings for more open country and less wooded parts. Bill is very large, thick and conical ; wings long ; tail fairly short ; legs stout and protected by scales.

We have two different types which are found in the district

GENUS HESPERIPHONA, bill is thick, heavy and conical, clumsy in appearance ; tail longish.

(725) HESPERIPHONA ICTERIOIDES, *Black and Yellow Grosbeak.* This handsome (in colour) bird is seldom found in Darjeeling. It is frequently seen in the cold weather at a lower elevation. It comes into Darjeeling usually when wild cherries are ripe, for it appears to be particularly partial to this fruit. It eats first the juicy parts by paring it away, then it cracks the hard stone between its powerful mandibles to get at the kernel, which it eats with much relish. The cracking of these cherry stones draws attention to the leafless (as it appears in winter) tree. The next to attract, a bystander, is the biggish odd looking bird prettily marked, with a large conical bill. *Icterioides* is 9 inches in size ; bill yellow ; colour of the male Grosbeak is striking, rich patches and streaks of yellow against the black, gives it a well marked appearance ; head, neck, wings, lower flanks and tip of the tail are black ; the rest of the plumage is bright yellow, a little paler on lower parts of the bird. The female is olive grey in colour ; back and rump dull yellowish brown ; quills and tail black ; under tail coverts and lower part of the body more fulvous yellow in colour.

(727) MYCEROBAS MELANOXANTHOS, *Spotted-winged Grosbeak,* is rare and difficult to find in Darjeeling or the district. It usually frequents pine forests and secluded corners of the Singalillas, on higher altitudes.

GENUS PYRRHULA, (*Bull-finches*), These birds ought to be better known, owing to the familiarity, doubtlessly, with species common in Northern Europe and America. Bull-finches found in the district, usually frequent high altitudes. They resemble the latter birds in structure and habits ; but differ a good deal in colour. *Pyrrhula* have short, thick tumid bills ; wings rounded 2nd, 3rd and 4th primaries are longest ; feet with broad soles ; tail longish ; plumage soft ; tarsus short. Bull-finches are arboreal in habits ; associate in flocks ; feed much on the ground.

(729) PYRRHULA ERYTHROCEPHALA, *Red-head Bull-finch,* is usually observed in small parties of sixes or sevens, at times of both sexes, at others, consisting chiefly of females, this is more in winter. They settle on the land to forage about. I noticed these birds on several occasions feeding on back yard slopes of the hill at Sukyapokri, and on the way up to Sandakphu. They are made out without much difficulty on side of the road, after leaving Tongloo, when among thick forests and jungles. It often alights on the top of a twig near by, giving ample opportunity of making it out and of observing its characteristics or listening to its rich warble. It is 6 inches in size ; bill black ; irides light brown ; colour of the male, above, the back and wing coverts are dull reddish ash ; head crimson, also, sides of

the neck and ear-coverts ; a black and white band on the forehead and base of the bill ; lower back (rump) and upper tail-coverts pure white ; tail glossy black ; median or middle coverts, of the wings, black, greater coverts ash ; bright red on the breast, lower parts of the body plumage slightly orange in tinge ; lower tail coverts white ; flanks fawn coloured.

(731) PYRRHULA NIPALENSIS, *Brown Bull-finch*, is the next bird of this group you are likely to meet, other species are rare. It is usually found on high altitudes on the Singalillas, the water-shed boundary of Nepal, where this species is more abundant. It comes to Darjeeling during winter, where it remains, the greater portion of the cold weather. It is, seen feeding in our gardens and bare hill sides. It is 6¼ inches in length ; irides brown. The glossy black wings and tail help to make it out, together with its conical greenish bill. Tail is longer and more forked than the former species ; colour, above, is ashy brown ; upper tail coverts are glossy black ; wings and tail are tipped white ; tertiary feathers have crimson edgings ; a pale broad bar on greater coverts ; under tail coverts and lower parts of the body are white. This interesting bull-finch has been found only in the district and adjoining states of Nepal and Sikkim.

(733) PYRRHOPLECTES EPAULETTA, *Golden-headed Black Bull-finch*, is another species likely to be met with without much difficulty on higher altitudes, though it is much rarer than either *erythrocephala* or *Nipalensis*. In spring, they are seen on the road to Sandakphu, on bushes and jungles. Like their congeners they are found on sunny sides of the hills and seem to care, little, for the shade. In size it is 5¾ inches. The head of the male is bright golden orange ; rest of the plumage is brownish black excepting a few axillary tufts of golden yellow, and a little white on the tertiaries. This bird is considered rare, and found only in this district. Female is not so well marked. It is reddish brown, above with grey on the neck and parts of the head greenish red on ear-coverts ; golden orange axillaries, dusky colored primaries and tail, white on the tertiaries ; bill, legs and irides brown.

III.—CROSS-BILLS.

These birds are remarkable, chiefly for the peculiar form or structure of bill ; one mandible over the other, in shape of a cross. They are closely allied to Bull-finches and Rose-finches.

GENUS LOXIA, have the bill lengthened, strong and compressed, tip hooked ; ends of the mandibles crossed ; wings fairly long, 1st

and 2nd quills longest ; tail short and forked ; hind toe long ; claws curved. These birds are arboreal in their habits, gregarious and frequent high altitudes.

(734) LOXIA HIMALAYANA, *Himalayan Cross-bill*, you are hardly likely to meet in or near Darjeeling, as these peculiar and brightly coloured little birds prefer high altitudes, where the pine tree flourishes, and near the snow line. I saw a number in the cold weather, settle close to the house, after a heavy fall of snow on Phalut ; but this is a rare occurrence. Himalayan Cross-bill is 5¾ inches ; colour, above, is ashy brown, on the head, neck, back, wings and tail, feathers are edged red ; the lower parts are a pretty roseate red, also portions of the head and neck. In colour they seem allied to Rosefinches ; bill is lengthened ; tip of the mandibles cross one over the other which gives the bill a strong scissor like action, it cuts through with considerable ease and facility the more tender pine and juniper twigs when these birds are feeding on the seeds, etc. They frequently indulge in fruit and berries.

GENUS HÆMATOSPIZA, is the second type of Grosbeaks, found in the district. We noticed in the former group *Hesperiphona* the large clumsy looking bill. The bill of this latter bird, though big is much smaller than Grosbeaks we have been considering. The bill is longer and not so bulged at the sides, upper mandible curved ; wings 2nd, 3rd and 4th primaries longest ; tail even. These birds grade more easily into the bull-finches.

(735) HÆMATOSPIZA SIPAHI, *Scarlet Grosbeak*, is the richest coloured species of this interesting family of finches. The Scarlet Grosbeak seldom visits Darjeeling. In winter it is found in the outskirts of dense forests about 4,000 or 5,000 feet elevation. About June it betakes itself for the congenial (at this season of the year) heights above Tongloo. At times you see a solitary pair feeding chiefly on fruit, like the Black and Yellow Grosbeak it is partial to ripe cherries. It clings to thick whip like stems to reach the ripe fruit. Little difficulty need be experienced in distinguishing this red coated soldier. The magnificent colour of the male shows out distinctly, whilst feeding or taking a constitutional among the branches *Sipahi* is 7½ inches ; bill yellow ; legs brown ; irides hazel. Male is a brilliant scarlet ; wings and tail dusky brown edged with scarlet ; lower tail coverts with dusky streaks. Female is more chestnut in colour, feathers bordered with greenish yellow, which gives the bird a less sombre appearance ; rump bright yellow ; beneath olive yellow with roundish marks.

IV.—ROSE-FINCHES.

These dark plumaged birds, are doubtlessly well known to all. They are more or less prettily marked with bright rose colours. Bill is bull-finch like, short and high, tip of upper mandible projecting; wings shorter and rounded.

(746) PROCARDUELIS NIPALENSIS, *Dark Rose-finch*, is another winter visitant in Darjeeling, at which season they are fairly common, in the station where trees and shrubs abound. They frequently come into gardens and house compounds. They are often observed foraging about on roads and paths in front of the house. At times these Rosefinches are fairly tame, and can be made out without, much difficulty. The bright roseate, tints and colours, draw one's attention even from a short distance. These birds are about the size of sparrows, in length 6½ inches; bill is brown; irides red brown. Male has bright rose tints and markings; above, dark sooty sort of colour, also on neck and breast which are tinged with red; much redder or rosier on the throat and streak over the eyes; wings, (quills) and tail feathers are brown tinged and margined with red. Female is dull in colour, lacking the bright tints, it is a sort of olive brown and dull yellow; beneath white.

(743) PROPASSER PULCHERRIMUS, *Beautiful Rose-finch*. I am afraid there is but a small chance of finding this unique little bird in Darjeeling. At Tongloo and the road to Sandakphu or in North Sikkim on high altitudes it is occasionally met with. *Pulcherrimus* outrivals in beauty most of the smaller birds and could be looked upon as the prettiest of the *Fringillinæ*, a family which have not a few richly coloured birds such as Cross-bills, Gold and other finches and Scarlet Grosbeak. This beautiful finch will quite repay a closer examination of its varied markings. A few of the leading colours will suffice to enable one to make out this species. Underparts are silvery crimson, also sides of the head and throat; supercilium, which is found in most of the finches, is silvery crimson; top of the head silvery white, crown feathers edged with crimson; rest of the plumage is rose coloured. This is but a poor description, but such as it is, it will aid to distinguish this Rose-finch.

(750) CHRYSOMITRIS SPINOIDES, *Himalayan Siskin*, this dainty little bird visits us in September, towards close of the rains. Biggish flocks of Siskins seem to come in batches and spread themselves about Darjeeling. They seek in preference, better wooded parts; among bamboo (melengo, as hill people call this species) clumps. Where these are not plentiful, tall Cryptomeria trees, which grow in clusters on the hill side are selected. Here these birds build their

nests, which are most artfully hidden away. At this season in particular, the male Siskin has a pretty canary-like warble, quite as musical, when this bird takes it into its head to favor us with a song. Its warbles and trills make the canary in the cage prick up its ears, and wonder who could have sung so fine a tune and compass which it believes to be its own special domain in which it is, perhaps, primadonna. I trust you will pardon me for giving this special honor to a male bird. One invariably chuckles, under such circumstances, at success of the Siskin, when it has so closely rivaled a more famous voice in Nature's great Orchestra. The Siskin is 5½ inches in length. Colour of the male is yellow on the head and neck, whilst rest of the body, above, is olivaceous brown ; wings blackish with yellow spots and a bright yellow band ; beneath it is yellow slightly tinted olive on the sides. The female is more dusky olive and less brightly coloured.

SUB-FAMILY ALAUDINÆ (*Larks*).

These familiar birds need no introduction, as they must already be well known to you. Bill, as compared with the former group, is long and slender ; wings broad, tertiaries longish and pointed ; claws curved ; hind toe and claw long ; plumage usually striped and brown is colour. They appears to be more at home on the ground, than the perch. They seem to be better known for the typical manner in which they rise straight up in the air, in a hovering sort of flight singing as they ascend.

They are divided into—

I.—Bush-Larks.
II.—True-Larks.
III.—Desert-Larks.

I.—BUSH-LARKS

Have short bills ; wings more rounded ; tail short. They have a somewhat crouching appearance and when approached run quickly to cover, composed chiefly of short bushy jungle. None of this species are found in the district.

II.—TRUE-LARKS

Are found in more open country, rocky, scrub jungle. Plumage of larks, is dull in colour. At times they are made out with difficul-

ty, as their particular livery, matches the ground they are on. Like sparrows they indulge in dust baths. Nostrils are protected by short bristly feathers.

GENUS AMMOMANES, has a short, thick, compressed bill, ridge arched, gonys ascending; wings long 3rd and 4th quills longest, 1st minute, tertiaries moderate; tail longish. They are usually solitary in their habits; remain much on land and frequent, when in the district uplands and hill tops.

(758) AMMOMANES PHÆNICURA, *Rufous-tailed Finch-lark*, is met with during winter months at Senchal.

GENUS ALAUDA, bill is moderate in size, fairly straight, slender and conical; head crested; wings long; tail short and forked; tarsus longish; feet large; hind claw very long.

(766) ALAUDA TRIBORHYNCHA, *Himalayan sky-lark*, is found at Phalut. It is 7 inches in size, above, plumage is deep brown, with rufous edged feathers, showing more distinctly on the upper neck; beneath, earthy white with brown streaks; breast chesnut, with brown streaks; tail displays a fair quantity of white feathers. Hodgson called this bird, or a bird very like it *Dulcivox*, found in Horsfield's list (705).

(767) ALAUDA GULGULA, *Indian sky-lark*, is found throughout the plains, in most places, where fields; dry scrubby "danga" lands abound; rice fields and pasture lands. It rises on the wing and sings as it rises, not unlike the lark of Britain. It is observed oftener, perhaps, in spring. Many of those who love the sky-lark's song in the home-land, give it scarcely a second thought in the balmy east, where it is frequently sold in game markets, as Ortolan together with the social lark (761).

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D. (384) G. rufulus—White-headed ,, ,,

Genus Pyctorhis.

P. (385) P. sinensis—Yellow-eyed Babbler.
P. (386) P. longirostris—Larger Yellow-eyed ,,

Genus Trichastoma.

(387) T. Abbotti—Brown-backed Tit- ,,

GENUS Alcippe.

L. (388) A. nipalensis—Nepal Quaker-thrush.
D. (389) A. poiocephala—Neilgherry " "
D. (390) A. atriceps—Black-headed Wren-babbler.

GENUS Strachyris.

D. (391) S. nigriceps—Black-throated " "
D. (392) S. pyrrhops—Red-billed " "
D. (393) S. ruficeps—Red-headed " "
D. (394) S. chrysæa—Golden-headed " "

GENUS Mixornis.

P. (395) M. rubicapillus—Yellow-breasted Wren-babbler.

GENUS Timalia.

D. (396) T. pileata—Red-capped " "

GENUS Dumetia.

D. (397) D. hyperythra—Rufous-bellied " "
D. (398) D. albogularis—White-throated " "

GENUS Pellorneum.

P. (399) P. ruficeps—Spotted " "

GENUS Pomatorhinus.

D. (400) P. ruficollis—Rufous-necked Scimitar-babbler.
D. (401) P. ferruginosus—Coral-billed " "
D. (402) P. schisticeps—Slaty-headed " "
D. (403) P. leucogaster—Gould's " "
D. (404) P. Horsfieldii—Southern " "
D. (405) P. erythrogenys—Rusty-cheeked " "

GENUS Xiphoramphus.

D. (406) X. superciliaris—Slender-billed.

GENUS Garrulax.

D. (407) G. leucolophus—White-crested Laughing-Thrush.
D. (408) G. cærulatus—Grey-sided " "
P. (409) G. Delesserti—Wynaad " "
D. (410) G. ruficollis—Rufous-necked " "
D. (411) G. albogularis—White-throated " "
D. (412) G. pectoralis—Black-gorgeted " "
D. (413) G. moniliger—Neck-laced " "
D. (414) G. ocellatus—White-spotted " "

GENUS Trochalopteron.

D.	(415) T. erythrocephalum—Red-headed	Laughing-thrush.
D.	(416) T. chrysopterum—Yellow-winged	,, ,,
D.	(417) T. subunicolor—Plain-colored	,, ,,
D.	(418) T. variegatum—Variegated	,, ,,
D.	(419) T. affine—Black-faced	,, ,,
D.	(420) T. squamatum—Blue-winged	,, ,,
D.	(421) T. rufogulare—Rufous-chinned	,, ,,
D.	(422) T. phœniceum—Crimson-winged	,, ,,
P.	(423) T. cachinnans—Neilgharry	,, ,,
P.	(424) T. Jerdoni—Banasore	,, ,,
P.	(425) T. lineatum—Streaked	,, ,,
P.	(426) T. setafer—Bristly	,, ,,

GENUS Actinodura.

D.	(427) A. Egertoni—Rufous	Bar-wing.
D.	(428) A. nipalensis—Hoary	,, ,,

GENUS Sibia.

D.	(429) S. capistrata—Black-headed	Sibia.
D.	(430) S. picaoides—Long-tailed	,,

GENUS Acanthoptila.

P.	(431) A. Nipalensis—Spiny	Babbler.

GENUS Malacocircus.

D.	(432) M. terricolor—Bengal	,,
P.	(433) M. griseus—White-headed	,,
D.	(434) M. Malabaricus—Jungle	,,
P.	(435) M. Somervillei—Rufous-tailed	,,
D.	(436) M. Malcolmi—Large Grey	,,

GENUS Layardia.

P.	(437) L. subrufa—Rufous	,,

GENUS Chatarrhœa.

P.	(438) C. caudata—Striated	Bush-babbler.
P.	(439) C. Earlei— ,,	Reed- ,,

GENUS Megalurus.

D.	(440) M. palustris— ,,	Marsh- ,,

GENUS Chætornis.

D.	(441) C. striatus—	Grass-

GENUS Schænicola.

P. (442) S. platyura—Broad-tailed Reed-bird.

GENUS Eurycercus.

P. (443) E. Burnesii—Long-tailed „ „

FAMILY Brachypodidæ (Short-Legged Thrushes).

I.—PYCNONOTINÆ ... True Bulbuls.
II.—PHYLLORNITHINÆ ... Green „
III.—IRENINÆ ... Blue-birds.
IV.—ORIOLINÆ ... Orioles.

SUB-FAMILY Pycnonotinæ.

GENUS Hypsipetes.

D. (444) H. psaroides—Himalayan Black-bulbul.
P. (445) H. Neilgherriensis—Neilgherry „ „
D. (446) H. Ganeesa—Ghat „ „
D. (447) H. McLellandi—Rufous-bellied „

GENUS Hemixos.

D. (448) H. flavala—Brown-eared „

GENUS Alcurus.

D. (449) A. striatus—Striated Green- „

GENUS Criniger.

D. (450) C. ictericus—Yellow-browed „
D. (451) C. flaveolus—White-throated „

GENUS Ixos.

D. (452) I. luteolus—White-browed Bush- „
D. (453) I. xantholæmus—Yellow-throated „ „

GENUS Kelaartia.

D. (454) K. penicillata—Yellow-eared „

GENUS Rubigula.

D. (455) R. gularis—Ruby-throated Bulbul.
D. (456) R. flaviventris—Black-crested Yellow- ,,

GENUS Brachypodius.

D. (457) B. poiocephalus—Grey-headed ,,

GENUS Otocompsa.

D. (458) O. leucogenys—White-cheeked Crested- ,,
P. (459) O. leucotis—White-eared ,, ,,
P. (460) O. jocosa—Red-Whiskered ,,

GENUS Pycnonotus.

D. (461) P. pygæus—Common Bengal Bulbul.
P. (462) P. hæmorhous— ,, Madras ,,

SUB-FAMILY Phyllornithinæ.

GENUS Phyllornis.

D. (463) P. Jerdoni—Common Green-Bulbul.
P. (464) P. Malabaricus—Malabar ,, ,,
D. (465) P. aurifrons—Gold-fronted ,, ,,
D. (466) P. Hardwickii—Blue-winged ,, ,,

GENUS Iora.

P. (467) J. Zeylonica—Black-headed ,, ,,
P. (468) J. typhia—White-winged ,, ,,

SUB-FAMILY Ireninæ.

GENUS Irena.

D. (469) I. puella—Fairy Blue-bird.

SUB-FAMILY Oriolinæ.

GENUS Oriolus.

I.—*Golden Orioles.*

D. (470) O. kundoo—Indian Oriole.
(471) O. indicus—Black-naped Indian ,,
P. (472) O. melanocephalus—Bengal Black-headed ,,
(473) O. ceylonensis—Southern ,, ,, ,,
D. (474) O. Traillii—Maroon ,,

FAMILY Sylviadæ.

I.—SAXICOLINÆ—Stone-chats and Wheat-ears.
II.—RUTICILLINÆ—Red-starts and Bush-chats.
III.—CALAMOHERPINÆ—Grass-warblers.
IV.—DRYMOICINÆ—Wren- ,,
V.—PHYLLOSCOPINÆ—Tree- ,,
VI.—SYLVIINÆ—Grey- ,,
VII.—MOTACILLINÆ—Wagtails and Pipits.

SUB-FAMILY Saxicolinæ.

GENUS Copsychus.

D. (475) C. saularis—Magpie-Robin.

GENUS Kittacincla.

P. (476) K. macroura—Shama.

GENUS Myiomela.

D. (477) M. leucura—White-tailed Blue-chat.

GENUS Grandala.

D. (478) G. cœlicolor—Long-winged Blue-chat.

GENUS Thamnobia.

P. (479) T. fulicata—Indian Black Robin.
P. (480) T. Cambaiensis—Brown-backed Indian ,,

GENUS Pratincola.

D. (481) P. caprata—White-winged Black ,,
P. (482) P. atrata—Neilgherry ,,
P. (483) P. Indica—Indian Bush-chat.
D. (484) P. leucura—White-tailed ,, ,,
P. (485) P. insignis—Large ,, ,,
D. (486) P. ferrea—Dark Grey ,, ,,

GENUS Rhodophila.

P. (487) R. melanoleuca—Black and White ,, ,,

GENUS Saxicola.

P. (488) S. leucuroides—Indian White tailed Stone-chat.
P. (489) S. picata—Pied ,,
D. (490) S. leucomela—White-headed ,,
P. (491) S. œnanthe— Wheat-ear.
P. (492) S. deserti—Black-throated ,,

GENUS Cercomela.

P. (493) C. melanura—Black-tailed Rock-chat.
P. (494) C. fusca—Brown ,, ,,

SUB-FAMILY Ruticillinæ.

GENUS Ruticilla.

D. (495) R. phœnicura—European Redstart.
P. (496) R. phœnicuroides—Allied ,,
D. (497) R. rufiventris—Indian ,,
D. (498) R. Hodsonii—Hodgson's ,,
D. (499) R. erythrogastra—White-winged ,,

P. (500) R. aurorea—Reeves' Redstart.
D. (501) R. schisticeps—Slaty-headed ,,
P. (502) R. nigrogularis—Black-throated ,,
D. (503) R. frontalis—Blue-fronted ,,
D. (504) R. cœruleocephala—Blue-headed ,,
D. (505) R. fuliginosa—Plumbeous Water-robin.

GENUS Chæmorrornis.

D. (506) C. leucocephala—White-capped Redstart.

GENUS Larvivora.

D. (507) L. cyana—Blue Wood-chat.

GENUS Ianthia.

D. (508) I. cyanura—White-breasted Blue Wood-chat.
D. (509) I. hyperythra—Rusty-throated ,, ,, ,,
D. (510) I. superciliaris—Rufous-bellied Bush-chat

GENUS Tarsiger.

D. (511) T. chrsyæus—Golden ,, ,,

GENUS Calliope.

D. (512) C. Kamtschatkensis—Common Ruby-throat.
D. (513) C. pectoralis—White-tailed ,, ,,

GENUS Cyanecula.

D. (514) C. suecica—Indian Blue- ,,

SUB-FAMILY Calamoherpinæ.

GENUS Acrocephalus.

D. (515) A. brunnescens—Large Reed-warbler.
D. (516) A. dumetorum—Lesser ,, ,,
P. (517) A. agricolus—Paddy Fjeld- ,,
P. (518) A. olivaceus—Thick-billed Reed- ,,

GENUS Dumeticola.

P. (519) D. Affinis—Spotted ,, ,,

GENUS Locustella.

P.	(520) L. certhiola—Lesser	Reed-Warbler.
D.	(521) L. rubescens—Ruddy	,, ,,

GENUS Tribura.

D.	(522) T. luteoventris—Plain Brown	,, ,,

GENUS Horornis.

D.	(523) H. fulviventris—Fulvous-bellied	Hill-Warbler.
D.	(524) H. flaviventris—Yellow-bellied	,, ,,
D.	(525) H. fuliginiventer—Smoky	,, ,,
D.	(526) H. fortipes—Strong-footed	,, ,,

GENUS Horeites.

D.	(527) H. brunnifrons—Rufous-capped	,, ,,
P.	(528) H. pollicaris—Strong-clawed	,, ,,
P.	(529) H. major—Large	,, ,,

SUB-FAMILY Drymoicinæ.

GENUS Orthotomus.

D.	(530) O. longicauda—Indian Tailor-bird.	
D.	(531) O. coronatus—Gold-headed Tailor-bird.	

GENUS Prinia (10 tail feathers).

D.	(532) P. flaviventris—Yellow-bellied	Wren-Warbler.
D.	(533) P. Adamsi—White-bellied	,, ,,
P.	(534) P. socialis—Dark-ashy	,, ,,
D.	(535) P. Stewarti—Stewart's	,, ,,
P.	(536) P. gracilis—(12 tail feathers) Franklin's	,, ,,
D.	(537) P. cinereo-capilla—Hodgson's	,, ,,
P.	(538) P. Hodgsoni—Malabar	,, ,,

GENUS Cisticola.

D.	(539) C. schænicola—Rufous	Grass-Warbler.
D.	(540) C. erythrocephala—Red-headed	,, ,,
D.	(541) C. Tytleri—Cream-coloured	,, ,,

P. (500) R. aurorea—Reeves' Redstart.
D. (501) R. schisticeps—Slaty-headed ,,
P. (502) R. nigrogularis—Black-throated ,,
D. (503) R. frontalis—Blue-fronted ,,
D. (504) R. cœruleocephala—Blue-headed ,,
D. (505) R. fuliginosa—Plumbeous Water-robin.

GENUS Chæmorrornis.

D. (506) C. leucocephala—White-capped Redstart.

GENUS Larvivora.

D. (507) L. cyana—Blue Wood-chat.

GENUS Ianthia.

D. (508) I. cyanura—White-breasted Blue Wood-chat.
D. (509) I. hyperythra—Rusty-throated ,, ,, ,,
D. (510) I. superciliaris—Rufous-bellied Bush-chat

GENUS Tarsiger.

D. (511) T. chrsyæus—Golden ,, ,,

GENUS Calliope.

D. (512) C. Kamtschatkensis—Common Ruby-throat.
D. (513) C. pectoralis—White-tailed ,, ,,

GENUS Cyanecula.

D. (514) C. suecica—Indian Blue- ,,

SUB-FAMILY Calamoherpinæ.

GENUS Acrocephalus.

D. (515) A. brunnescens—Large Reed-warbler.
D. (516) A. dumetorum—Lesser ,, ,,
P. (517) A. agricolus—Paddy Fjeld- ,,
P. (518) A. olivaceus—Thick-billed Reed- ,,

GENUS Dumeticola.

P. (519) D. Affinis—Spotted ,, ,,

GENUS Locustella.

P.	(520) L. certhiola—Lesser	Reed-Warbler.
D.	(521) L. rubescens—Ruddy	,, ,,

GENUS Tribura.

D.	(522) T. luteoventris—Plain Brown	,, ,,

GENUS Horornis.

D.	(523) H. fulviventris—Fulvous-bellied	Hill-Warbler.
D.	(524) H. flaviventris—Yellow-bellied	,, ,,
D.	(525) H. fuliginiventer—Smoky	,, ,,
D.	(526) H. fortipes—Strong-footed	,, ,,

GENUS Horeites.

D.	(527) H. brunnifrons—Rufous-capped	,, ,,
P.	(528) H. pollicaris—Strong-clawed	,, ,,
P.	(529) H. major—Large	,, ,,

SUB-FAMILY Drymoicinæ.

GENUS Orthotomus.

D.	(530) O. longicauda—Indian Tailor-bird.
D.	(531) O. coronatus—Gold-headed Tailor-bird.

GENUS Prinia (10 tail feathers).

D.	(532) P. flaviventris—Yellow-bellied	Wren-Warbler.
D.	(533) P. Adamsi—White-bellied	,, ,,
P.	(534) P. socialis—Dark-ashy	,, ,,
D.	(535) P. Stewarti—Stewart's	,, ,,
P.	(536) P. gracilis—(12 tail feathers) Franklin's	,, ,,
D.	(537) P. cinereo-capilla—Hodgson's	,, ,,
P.	(538) P. Hodgsoni—Malabar	,, ,,

GENUS Cisticola.

D.	(539) C. schænicola—Rufous	Grass-Warbler.
D.	(540) C. erythrocephala—Red-headed	,, ,,
D.	(541) C. Tytleri—Cream-coloured	,, ,,

GENUS Graminicola.

P.	(542) G. Bengalensis—Large	Grass-Warbler.	

GENUS Drymoipus.

D.	(543) D. inornatus—Common	Wren-	,,
D.	(544) D. longicaudatus—Long-tailed	,,	,,
P.	(545) D. sylvaticus—Jungle	,,	,,
D.	(546) D. neglectus—Allied	,,	,,

GENUS Suya.

D.	(547) S. criniger—Brown Mountain	,,	,,
D.	(548) S. fuliginosa—Dusky	Hill-	,,
D.	(549) S. atrogularis—Black-throated	,,	,,

GENUS Burnesia.

D.	(550) B. lepida—Streaked	Wren-	,,

GENUS Franklinia.

P.	(551) F. Buchanani—Rufous-fronted	,,	,,

SUB-FAMILY Phylloscopinæ.

GENUS Neornis.

D.	(552) N. flavolivacea—Aberrant	Tree-Warbler.	

GENUS Phyllopneuste.

P.	(553) P. rama—Sykes'	,,	,,

GENUS Phylloscopus.

D.	(554) P. tristis—Brown	,,	,,
D.	(555) P. fuscatus—Dusky	,,	,,
D.	(556) P. magnirostris—Large billed		
D.	(557) P. trochilus	Willow-	,,
D.	(558) P. lugubris—Dull-green	Tree-	,,
D.	(559) P. nitidus—Bright-green	,,	,,
D.	(560) P. viridanus—Greenish	,,	,,
D.	(561) P. affinis—Tickell's	,,	,,
D.	(562) P. indicus—Olivaceous	,,	,,

GENUS Reguloides.

D.	(563) R. occipitalis—Larger Crowned	Warbler.
D.	(564) R. trochiloides—Median „	„
D.	(565) R. proregulus—Crowned Tree-	„
D.	(566) R. chloronotus—Yellow-rumped „	„
D.	(567) R. viridipennis—Green-winged	„
D.	(568) R. erochroa—Bar-winged	„

GENUS Culicipeta.

D.	(569) C. Burkii—Black-browed	„
D.	(570) C. cantator—Lesser „	„

GENUS Abrornis.

D.	(571) A. schisticeps—Black-eared	„
D.	(572) A. xanthoschistos—Grey-headed	„
D.	(573) A. albo-superciliaris—White-browed	„
D.	(574) A. flaviventris—Yellow-bellied	„
D.	(575) A. poliogenys—Grey-cheeked	„
D.	(576) A. affinis—Allied	„
D.	(577) A. albogularis—White-throated	„
D.	(578) A. castaneoceps—Chesnut-headed	„

GENUS Tickellia.

D.	(579) T. Hodgsoni—Broad-billed	„

GENUS Regulus.

D. (580) R. Himalayensis—The Gold-crest

SUB-FAMILY Sylviinæ.

GENUS Sylvia.

D.	(581) S. orphea—Large Black-capped	„
P.	(582) S. affinis—Allied	Grey-warbler.
D.	(583) S. curruca—Lesser White-Throat.	

SUB-FAMILY Motacillinæ.

I.—HILL WAGTAILS or Forktails.

II.—WAGTAILS.

III.—TIT-LARKS (streaked plumage).

GENUS Enicurus (Hill Wagtails).

D.	(584) E. maculatus—Spotted	Fork-tail.
D.	(585) E. immaculatus—Black-backed	,, ,,
D.	(586) E. schistaceus—Slaty-backed	,, ,,
D.	(587) E. Scouleri—Short-tailed	,, ,,
D.	(H631) E. guttata—Eastern Spotted	,, ,,
D.	(588) E. nigrifrons—Black-fronted	,, ,,

II.—*Wagtails.*

1st. Water-Wagtails.

GENUS Motacillinæ.

D.	(589) M. Maderaspatana—Pied	Wagtail.
D.	(590) M. luzoniensis—White-faced	,,
P.	(591) M. dukhunensis—Black-faced	,,

2nd. Wood Wagtails.

GENUS Calobates.

D.	(592) C. sulphurea—Grey and Yellow	,,

3rd. Field Wagtails.

GENUS Budytes.

D.	(593) B. viridis—Indian Field-	,,
P.	(594) B. citreola—Yellow-headed	,,

4th. Garden Wagtails.

GENUS Nemoricola.

P.	(595) N. indica—Black-breasted	,,

1st. Tree Pipits.

GENUS Pipastes.

D.	(596) P. agilis—Indian	Tree Pipit.
D.	(597) P. arboreus—European	" "
D.	(598) P. montanus—Hill	" "

2nd. Tit-Larks.

GENUS Corydalla.

D.	(599) C. Richardi—Large	Marsh-Pipit.
D.	(600) C. rufula—Indian	Titlark.
D.	(601) C. striolata—Large	"

3rd. Stone-Pipit or Lark Pipits.

GENUS Agrodroma.

P.	(602) A. campestris	Stone-Pipit.
P.	(603) A. cinnamomea—Rufous	Rock- "
P.	(604) A. sordida—Brown	" "

4th. True Pipits.

GENUS Anthus.

D. (605) A. cervinus—Vinous-throated Pipit.

GENUS Heterura.

D. (606) H. sylvana—Upland Pipit.

FAMILY Ampelidæ.

SUB-FAMILY Leiotrichinæ.

I. *Blue Thrush-Tits.*

GENUS Cochoa.

D.	(607) C. purpurea—Purple	Thrush-tit.
D.	(608) C. viridis—Green	" "

II. *Leiotricheæ (Hill-tits).*

GENUS Pteruthius.

D.	(609) P. erythropterus—Red-winged	Shrike-Tit.
D.	(610) P. rufiventer—Rufous-bellied	,, ,,

GENUS Allotrius.

D.	(611) A. œnobarbus—Chesnut-throated	,, ,,

GENUS Cutia.

D.	(612) C. nipalensis—Yellow-backed	,, ,,

GENUS Leioptila.

D.	(613) L. annectans—Slender-billed	,, ,,

GENUS Leiothrix.

D.	(614) L. luteus—Red-billed	Hill-Tit.
D.	(615) L. argentauris—Silver-eared	,, ,,

GENUS Siva.

D.	(616) S. strigula—Stripe-throated	,, ,,
D.	(617) S. cyanouroptera—Blue-winged	,, ,,

GENUS Minla.

D.	(618) M. ignotincta—Red-tailed	,, ,,
D.	(619) M. castaniceps—Chesnut-headed	,, ,,
D.	(620) M. cinerea—Dusky-green	,, ,,

GENUS Proparus.

D.	(621) P. chrysœus—Gold-breasted	Tit-Babbler.
D.	(622) P. vinipectus—Plain Brown	Hill-tit.

III. *Ixuleæ.*

GENUS Ixulus.

D.	(623) I. flavicollis—Yellow-naped	Flower-pecker.
D.	(624) I. occipitalis—Chesnut-headed	,, ,,
D.	(625) I. striatus—striated	,, ,,

GENUS Yuhina.

D.	(626) Y. gularis—Stripe-throated	Flower-pecker.
D.	(627) Y. occipitalis—Slaty-headed	Hill-tit.
D.	(628) Y. nigrimentum—Black-chinned	Flower-pecker.

GENUS Myzornis.

D.	(629) M. pyrrhoura—Fire-tailed	,, ,,

GENUS Erpornis.

D.	(630) E. xantholeuca—White-bellied	,, ,,

GENUS Zosterops.

D.	(631) Z. palpebrosus—White-eyed	Tit

GENUS Sylviparus.

D.	(632) S. modestus—Yellow-browed	Flower-pecker.

GENUS Cephalopyrus.

D.	(633) C. flammiceps—Flame-fronted.	,, ,,

SUB-FAMILY Parinæ.

GENUS Ægithaliscus.

D.	(634) Æ. erythrocephalus—Red-headed	Tit.
D.	(635) Æ. iouschistos—Rufous-fronted	,,
D.	(636) Æ. niveogularis—White-throated	,,

GENUS Lophophanes.

D.	(637) L. dichrous—Brown-crested	,,
D.	(638) L. melanolophos—Crested	Black- ,,
D.	(639) L. rubidiventris—Rufous-bellied	crested- ,,
Simla	(640) L. rufonuchalis—Simla	Black- ,,
D.	(641) L. Beavani—Sikkim	,, ,,

GENUS Parus.

D.	(642) P. œmodius—Himalayan	Cole-Tit.
D.	(643) P. Atkinsoni—Sikhim	,, ,,
D.	(644) P. monticolus—Green-backed	,,
D.	(645) P. cinereus—Indian	Grey- ,,
P.	(646) P. Nuchalis—White-winged	Black- ,,

GENUS Machlolophus.

D.	(647) M. xanthogenys—Yellow-cheeked	,,
D.	(648) M. Jerdoni—Southern	Yellow- ,,
D.	(649) M. spilinotus—Black-spotted	,, ,,

GENUS Melanochlora.

D.	(650) M. Sultanea—Sultan	,, ,,

SUB-FAMILY Accentorinæ.

GENUS Accentor.

D.	(651) A. immaculatus—Maronne-backed	Accentor.
D.	(652) A. nipalensis—Large Himalayan	,,
D.	(653) A. altaicus—Himalayan	,,
D.	(654) A. strophiatus—Rufous-breasted	,,
P.	(655) A. Huttoni—Black-throated	,,
P.	(656) A. rubeculoides—Robin	,,
D.	(H719) A. Jerdoni—Jerdon's	,,

Tribe Conirostres.

FAMILY Corvidæ.

SUB-FAMILY Corvinæ.

GENUS Corvus.

Tibet	(657) C. corax—European	Raven.
,,	(658) C. tibetanus—Tibet	,,
P.	(659) C. corone—European Carrion	Crow.
D.	(660) C. culminatus—Indian	Corby.
P.	(661) C. intermedius—Black	Hill-crow.
P.	(662) C. tenuirostris—Slender-billed	Crow.
D.	(663) C. splendens—Common Indian	,,
P.	(664) C. frugilegus—The Rook.	

GENUS Coleus.

P. (665) C. monedula—Common Jackdaw.

GENUS Nucifraga.

D. (666) N. hemispila—Himalayan Nut-Cracker.
P. (667) N. multimaculata—Large spotted Nut-Cracker.

GENUS Pica.

D. (668) P. bottanensis—Himalayan Magpie.

SUB-FAMILY Garrulinæ.

GENUS Garrulus.

D. (669) G. bispecularis—Himilayan Jay.
D. (670) G. lanceolatus—Black-throated Jay.

GENUS Urocissa.

D. (671) U. sinensis—Red-billed Blue-Magpie.
D. (672) U. flavirostris—Yellow-billed Blue-Magpie.

GENUS Cissa.

D. (673) C. Sinensis—Green Jay.

SUB-FAMILY Dendrocittinæ.

GENUS Dendrocitta.

P. (674) D. rufa—Common Indian Magpie.
P. (675) D. pallida—Pale ,,
D. (676) D. sinensis—Himalayan ,,
D. (677) D. frontalis—Black-browed ,,
P. (678) D. leucogastra—Long-tailed ,,

SUB-FAMILY Fregilinæ.

GENUS Fregilus.

D. (679) F. Himalayanus—Himalayan Chough.

GENUS Pyrrhocorax.

D. (680) P. Alpinus—Alpine ,,

FAMILY Sturnidæ.

SUB-FAMILY Sturninæ.

GENUS Sturnus.

P. (681) S. vulgaris—Common Starling.
D. (682) S. unicolor—Glossy Black Starling.

GENUS Sturnopastor.

P. (683) S. contra—Pied Starling.

GENUS Acridotheres.

D. (684) A. tristis—Common Myna.
P. (685) A. ginginianus—Bank ,,
P. (686) A. fuscus. ,,

GENUS Temenuchus.

P. (687) T. pagodarum—Black-headed Myna.
P. (688) T. malabaricus—Grey- ,, ,,
P. (689) T. Blythii—White- ,, ,,

GENUS Pastor.

P. (690) P. roseus—Rose-colored Starling.

SUB-FAMILY Lamprotorninæ *(Grakles, Hill Mynas).*

GENUS Saraglossa.

P. (691) S. spiloptera—Spotted-winged Stare.

GENUS Eulabes.

P. (692) E. religiosa—Southern Hill-Myna.
Terai (693) E. intermedia—Nepal ,, ,,

FAMILY Fringillidæ.

SUB-FAMILY Ploceinæ.

GENUS Ploceus.

P. (694) P. baya—Common Weaver-Bird.
P. (695) P. manyar—Striated ,, ,,
P. (696) P. Bengalensis—Black-throated ,, ,,

SUB-FAMILY Estreldinæ.

GENUS Munia.

P. (697) M. malacca—Black-headed Munia.
P. (698) M. rubronigra—Chesnut-bellied ,,
P. (699) M. undulata—Spotted ,,
P. (700) M. pectoralis—Rufous-bellied ,,
D. (701) M. striata—White-backed ,,
D. (702) M. acuticauda—Himalayan ,,
D. (703) M. Malabarica—Plain Brown ,,

GENUS Estrelda.

P. (704) E. amandava—Red Wax-bill.
P. (705) E. formosa—Green ,, ,,

SUB-FAMILY Passerinæ.

GENUS Passer.

P. (706) P. indicus—Indian House Sparrow.
P. (707) P. salicicolus—Willow ,,
P. (708) P. cinnamomeus—Cinnamon-headed ,,
P. (709) P. pyrrhonotus—Rufous-backed ,,
D. (710) P. montanus—Mountain ,,
P. (711) P. flavicollis—Yellow-necked ,,

SUB-FAMILY Emberizinæ.

I. *True Buntings.*

GENUS Emberiza.

P.	(712) E. pithyornis—White-crowned	Bunting.
D.	(713) E. cia—White-browed	,,
P.	(714) E. Stracheyi—White-necked	,,
D.	(715) E. hortulana—Ortolan	,,
	(716) E. Huttoni—Grey-necked	,,
P.	(717) E. spodocephala—Black-faced	,,
P.	(718) E. Stewarti—White-capped	,,
P.	(719) E. fuscata—Grey-headed	,,
P.	(720) E. pusilla—Dwarf	,,

II. *Yellow Corn-buntings.*

GENUS Euspiza.

D.	(721) E. melanocephala—Black-headed	,,
P.	(722) E. luteola—Red-	,,
P.	(723) E. aureola—Brown-	,,

III. *Crested bunting.*

GENUS Melophus.

D.	(724) M. melanicterus—Crested Black	,,

SUB-FAMILY Fringillinæ.

I. *Grosbeaks.*

GENUS Hesperiphona.

D.	(725) H. icterioides—Black and Yellow	Grosbeak.
P.	(726) H. affinis—Allied	,,

GENUS Mycerobas.

D.	(727) M. melanoxanthos—Spotted-winged	,,
P.	(728) M. carnipes—White-winged	,,

GENUS Pyrrhula.

D.	(729) P. erythrocephala—Red-headed	Bull-finch.
D.	(730) P. erythaca—Red-breasted	,,
D.	(731) P. nipalensis—Brown	,,
D.	(732) P. aurantiaca—Orange	,,

GENUS Pyrrhoplectes.

D.	(733) P. epauletta—Golden-headed	Black Bull-finch.

III. *Cross-bills.*

GENUS Loxia.

D. (734) L. Himalayana—Himalayan Cross-bill.

GENUS Hæmatospiza.

D. (735) H. sipahi—Scarlet Grosbeak.

GENUS Propyrrhula.

D. (736) P. subhemachala—Red-headed Rose-finch.

IV. *Rosefinches.*

GENUS Carpodacus.

D	(737) C. rubicilla—Caucasian	Rose-finch.
P	(738) C. erythrinus—Common	,, ,,

GENUS Propasser.

W.H.	(739) P. rodopeplus—Spotted-winged	,, ,,
W.H.	(740) P. thura—White-browed	,, ,,
D.	(741) P. rhodochlamys—Red-mantled	,, ,,
D.	(742) P. rhodochrous—Pink-browed	,, ,,
D.	(743) P. pulcherrimus—Beautiful	,, ,,
D.	(744) P. frontalis—Sikkim	,, ,,
D.	(745) P. Murrayi—Murray's	,, ,,

GENUS Procarduelis.

D. (746) P. Nipalensis—Dark ,, ,,

GENUS Pyrrhospiza.

W.H. (747) P. punicea—Large Red-breasted ,,

V. *True Finches.*

GENUS Callacanthis.

D. (748) C. Burtoni—Red-browed Finch.

GENUS Carduelis.

D. (749) C. caniceps—Himalayan Gold-Finch.

GENUS Chrysomitris.

D. (750) C. spinoides—Himalayan Siskin.

GENUS Metoponia.

D. (751) M. pusilla—Gold-headed Finch.

GENUS Fringilla.

D. (752) F. montifringilla—Mountain ,,

GENUS Fringillauda.

D. (753) F. nemoricola—Himalayan Lark- ,,

SUB-FAMILY Alaudinæ.

I. *Bush-Larks.*

GENUS Mirafra.

P. (754) M. assamica—Bengal Bush-Lark.
P. (755) M. affinis—Madras ,, ,,
P. (756) M. erythroptera—Red-winged ,, ,,
P. (757) M. cantillans—Singing ,, ,,

II. *True Larks.*

GENUS Ammonanes.

D. (758) A. phœnicura—Rufous-tailed Finch-lark.
P. (759) A. lusitanica—Pale-rufous ,, ,,

GENUS Pyrrhulaudia.

P. (760) P. grisea—Black-bellied ,, ,,

GENUS Calandrella.

P. (761) C. brachydactyle—Short-toed or Social Lark.

GENUS Alaudala.

P. (762) A. raytal—Indian Sand- „

GENUS Otocoris.

P. (763) O. penicillata Horned- „
P. (764) O. longirostris—Long-billed „ „

GENUS Spizalauda.

P. (765) S. deva—Small crested „ „

GENUS Alauda.

D. (766) A. triborhyncha—Himalayan Sky- „
P. (767) A. gulgula—Indian „ „
P. (768) A. Malabarica—Crested Malabar „

GENUS Galerida.

P. (769) G. cristala—Large crested „

III. *Desert Larks.*

GENUS Certhilauda.

P. (770) C. desertorum Desert- „

ZOOLOGICAL GARDEN
CALCUTTA

PART III.

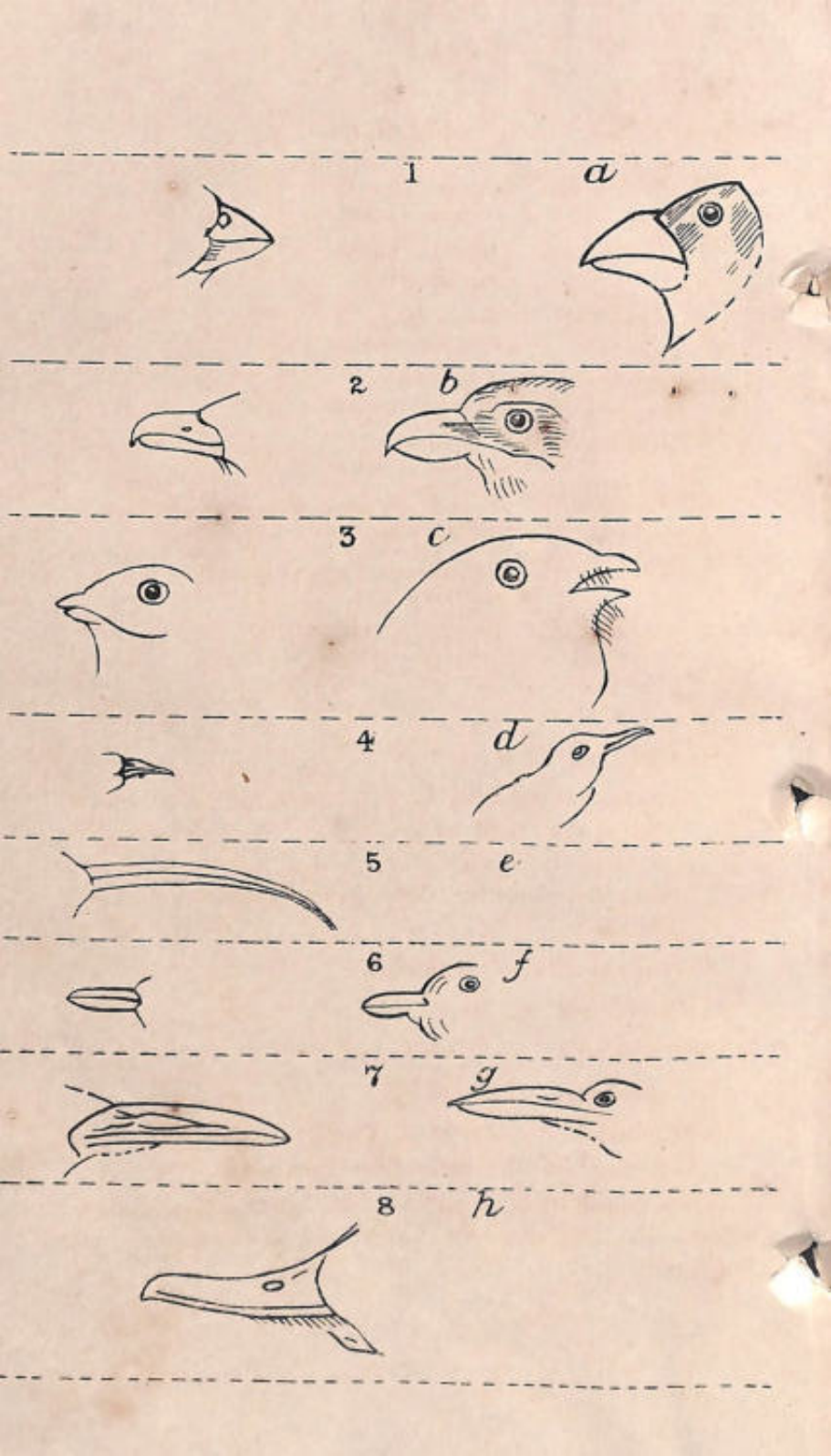
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Fig. III.

1. Conirostral. Conus = cone.
   rostrum = beak.
2. Dentirostral. Den(t)s = tooth.
   rostrum = beak.
3. Fissirostral. Fissus = cleft.
   rostrum = beak.
4. Tenuirostral. Tenuis = thin.
   rostrum = beak.
5. Longirostral. Longus = long.
   rostrum = beak.
6. Pressirostral. Pressus p.p. premere-press, compressed.
   rostrum = beak.
7. Cultirostral. Cultrirostris, Cultur a knife
   rostrum = beak.
8. Lemellirostral. Lamella = a thin plate.
   rostrum = beak.

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a = Conirostral bill of Hawfinch.

b = Dentirostral bill of Shrike. The notch, nick or tooth of the bill of the Dentirostres is not to be confounded with the tooth of the bill of certain birds of prey, as the falcons, nor with the series of teeth of the lamellirostral birds—ducks, etc.

c = Fissirostral bill of Goatsucker.

d = Tenuirostral ,, Honey-sucker.

f = Pressirostral ,, Lapwing.

g = Cultrirostral ,, Heron.

h = Lemellirostral ,, Duck. In Cuvier's classification, the 4th family of his 6th order of birds (Palmipedes).

They contain those which have the bill lamellosodentate and covered with soft skin with nail at end, as ducks, geese, swans, flamingos.

(3)—ORDER GEMITORES (Pigeons).

In introducing this family for your earnest and thoughtful consideration we need not trouble over controversial grounds, which have presented many difficulties to Ornithologists, to ascertain the proper place, of these birds in the divisions or orders into which Nature has more or less distinctly divided up the different classes of birds. We are accustomed, generally, to find them among *Gallinaceæ* (Game-birds). Somewhat artificial groupings present many difficulties. We will content ourselves, for two or three excellent reasons for accepting the position of *Gemitores*: Pigeons and Doves, at the end of *Incessores*, a sort of Sub-order of its own. If you look at, construction of the feet, you will notice that all the toes, are on the same plane, that is to say they are decidedly perching birds, in the same sense as *Insessores*. I have avoided throughout this work anatomic construction of birds, as the chief object of our enquiry is to enable us to get on more familiar terms with birds in their natural surroundings. The next draw back, in placing these birds among *Gallinaceæ* is the fact that their young ones enter this world in a callow state, which disqualifies them not a little from true Game-birds. The last point I should ask you to observe is construction of bill, which we shall consider when dealing with the various genera. Nevertheless, our chief desire being to make the acquaintance of birds in their wild state, any aid we can glean from Ornithology cannot lightly be dispensed with. *Gemitores*, or *Columbæ*, as some call this group, is an order well marked out by nature, and known to all, that a descriptive note is unnecessary to enable one, to separate pigeons and doves from the rest of *Insessores*. Their typical forms and quiet habits generally, are popularly known. Their short, straight compressed bills are, usually, arched at the apex, in a way peculiar to this group. Though we find ourselves on the confines of the largest and most interesting Natural Order of birds—the *Insessores*, nevertheless, here, we are treading on the heels of *Rasores*. In many respects these birds remind us of game-birds, which show our near approach to this group. You will probably have noticed the soft fleshy membrane on the sides, near the nostrils. Face is well plumed; wings, in most of the genera are long and pointed; tail consisting of 12 or 14 feathers, 16 in a few; tarsi short and strong, covered with small roundish scutella; legs feathered to the

knee ; toes fairly long. Their vaulted beaks, nasal fossæ, crop and a few other details in structure, resemble *Rasores*.

ORDER GEMITORES (Pigeons and Doves).

Family TRERONIDÆ

are divided into :—

I.—Treroninæ	...	Green Pigeons.
II.—Carpophaginæ	...	Imperial Pigeons.
III.—Ptelopodinæ	...	Green Doves.

Sub-Family TRERONINÆ.

Are called Fruit eating pigeons, owing to their partiality for fruit and berries, more so than the remaining groups such as wood pigeons etc. :—They have wings broader and stronger, their flight is rapid and easy ; tail broad, having 14 feathers in most of the species.

Green Pigeons, when compared with other birds of this group, are stout and heavy in build. Their plumage is greenish, with yellow tints and patches here and there. Their eyes are pretty, a circle of blue within a red circle. These birds remain much in pairs ; they are social and gregarious. Their feet and legs are strong, giving them much freedom whilst feeding on berries. When at rest they are quiet and sit close, consequently they are easily over looked.

Genus Sphenocercus, bill fairly slender, a little lengthened, towards the base, soft and tumid, a narrow nude space round the eyes ; tail wedge-shaped with central feathers narrow and elongated ; toes narrow.

(778) Sphenocercus sphenurus, *Kokla Green Pigeon*, is well known in Darjeeling. They come here in numbers during the rains, usually making their appearance in August, when the place is dull, misty and wet, but they are not so often observed as their human-like voice, song is heard, a soft musical, sort of cooing of several

notes, proceeding from the taller trees about the station. I have, often been asked the name of the thrush which sings in a certain manner (imitating the sound). This question puzzled me, till my attention was drawn to Kokla. For those who want a good description of this species I shall quote the following, from Blyth. "The notes bear some resemblance to the human voice in singing, and are highly musical in tone, being considerably prolonged and modulated but always terminating abruptly and every time the stave is repeated, exactly as before." These birds keep high up among the trees and feed much on berries and fruit. In size *Sphenurus* is 13 inches; bill bluish; irides blue and red; legs red; colour of the male is green, with a reddish tinge on the head and breast; shoulders of the wings and back are maroon; quills black, tail above, green; breast orange buff and lower parts cinnamon. There are but few birds which can beat Kokla for devotion to its mate. I remember purchasing, a couple of newly caught birds, mother and young one, as I was placing them in my big cage, I was surprised to hear a male Kokla on a tree over head calling in a mournful manner. The woodman, who brought the birds, said that, that was the pair, which had remained on the tree above, his hut for nearly three days, and had followed him, as he carried the captives, quite five miles. It took up its abode in the trees above the house. Every now and then, as it caught sight of its imprisoned companions it uttered a cooing like song, more like a wail, which differed from the human-like song, one is accustomed to hear at this season of the year. I had eventually to liberate Mrs. Kokla and her son for various reasons.

PIN-TAILED species is often met with on trees growing on banks of the Runjeet River, also *Sylvatica*, Green Imperial Pigeon: *Insignis*, Bronze-backed Imperial about elevation of Kurseong.

FAMILY COLUMBIDÆ.

These birds differ from the former, chiefly in habits, they frequent the ground more, in preference to perching on trees. Bill horny at the apex; tail usually of 12 feathers; gape not wide; tarsus longish; feet more suitable for the land. They feed much on seeds and buds. In colour sombre, neck beautifully marked with glistening display of colours.

They are divided into :—

PALUMBINÆ	...	Wood-pigeons.
COLUMBINÆ	...	Rock-pigeons.
MACROPYGINÆ	...	Long-tailed Doves.
TURTURINÆ	...	True Doves.

SUB-FAMILY PALUMBINÆ *(Wood-pigeons or Cushats)*

Feet suitable both for perching and feeding on the ground. These birds frequent well wooded parts of the district.

(782) ALSOCOMUS PUNICENS, *Purple Wood-pigeon.*

(783) ALSOCOMUS HODGSONII, *Speckled Wood-pigeon.* The former, is found more prevalent at Sukyapokri, the latter species in Sikkim about 10,000 feet elevation, also near Tonglco, and in the pine forests at Sandakphu, where they are extremely shy and soon take to flight when observed. Bill of these birds is small and compressed ; wings long ; tail fairly even ; lateral toes uneven ; claws stronger and more curved than the next group—the Cushats.

The Purple Wood-pigeon, is more likely to be observed in Darjeeling than the speckled species. Colour generally, is a sort of glossed greenish purple, feathers more distinctly margined with purple ; dull reddish on neck and sides of the breast ; sides of the neck bright and glossy, with varying tints in which Amethest purple prevails, sides of breast the same ; head greyish white ; wings and tail dark ; primaries grey ; underparts of the body feathers much paler ; bill tipped yellow ; irides orange red, enclosing amber coloured inner circle. Size of *punicens* is 16 inches ; wing expanse 24 inches. These birds descend to the plains in the cold weather, where they are frequently seen in more wooded parts.

GENUS PALUMBUS, differs from *Alsocomus* a good deal. They are better known as Cushats, generally biggish sized birds ; tarsus is slightly longer and tail shorter ; neck adornments light in colour.

(784) PALUMBUS CASIOTIS, *Himalayan Cushat*, is usually made out by its bigger size, being about 17 inches in length, extent of wings quite 30 inches. These birds are rare in Darjeeling. They

are more frequently observed at 12,000 feet elevation and over, in north Sikkim, on higher ranges, also beyond Jongri and near the snows, where they are found when building their nests in spring in pine forests. Himalayan Cushats are gregarious, more so, in the breeding season, when they collect in fairly big numbers. They build on, inaccessible places usually. Eggs as might be expected are white. Though the shell is fine, the surface is pitted over with minute pores similar to game-birds' eggs. The nest is loosely put together consisting of sticks and twigs, usually on a fir branch, when found at that elevation. Colour of this Cushat is brownish grey; sides of the neck and shoulders glossed with green and purple; on side of the neck is a large, typical patch of light chesnut colour; on the wings it has a white bar lengthways; primary coverts black; tail tipped black, having a broad pale band; lower parts of the bird are reddish purple; feet like most of the wood-pigeons are red; bill tipped with orange.

(785) PALUMBUS PULCHRICOLLIS, *Darjeeling Wood-Pigeon*, is somewhat rare here, though in the earlier days of Darjeeling, before the wanton destruction of trees, this bird could be met without much difficulty, especially during winter. Like all the Cushats, it perfers a high altitude. It is about 13½ inches in size. Predominating colour is dusky grey; sides of the neck glossed with green and purple; tail blackish; lower plumage is dove-grey; breast bright, glossy green and purple; bill tipped with yellow; irides yellow; legs reddish.

SUB-FAMILY COLUMBINÆ.

ROCK-PIGEONS differ a good deal from *Palumbus*. Tarsi are long and feet suitable for perching and progression on the ground. These are the blue stock-pigeons, which have given us our domesticated birds. Species likely to be met with in the district are *intermedia* (788) at a low elevation and *leuconota*; but these are rare and found chiefly in out-of-the-way places.

(790) COLUMBA LEUCONOTA, *White-bellied Rock-pigeon*. I don't think it will be seen much below 12,000 feet elevation, as it is usually found near the snows, where these birds rest in big numbers, congregate on boulders, and precipitous heights, beyond Jongri.

The remaining species of Rock-pigeons are found chiefly in the plains.

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(791) MACROPYGIA TUSALIA, *Bar-tailed Tree-dove*, or Cuckoo-dove as it is also called owing to its shape and structure. Its peculiar racket-like tail, which is typical of Cuckoos is noticeable and narrow cross rays on the tail feathers found in some of the *Cuculi*. These tree-doves prefer thick forests. When they occasionally come into Darjeeling, they keep much to the taller clumps of trees in preference to more open country. This bird taking into consideration its general structure and its habits, could safely be placed among the doves, though in appearance, it is large and looks more like a wood-pigeon. This tree-dove, like all its family has no song but a gentle cooing, which is indulged in when resting. It is often seen feeding on hot bitter berries of the trees known as Nepal pepper which hill folk are so fond of grinding up into conserve to eat with their meals. Bar-tailed Dove is slender in appearance. It has a long broad graduated tail, which is conspicuously barred, a sort of rufous and ashy white. *Tusalia* is about 16½ inches ; wing expanse 22 inches ; bill black with a little lake colour ; orbits red ; orbitar skin bright and pale in colour ; irides brown enclosed by a pink circle ; legs dull reddish.

SUB-FAMILY TURTURINÆ *(Doves)*

Are a group of birds, well known to all, owing to their tame and social habits. Their delicacy of nature and build convey to us, many a quiet lesson of gentleness, artlessly displayed and devoid of timidity. These birds feed on the land, chiefly on hard grains. They are generally, solitary in their habits, occasionally seen in small parties.

GENUS TURTUR, *Turtle doves*, are more commonly known on account of their typical call. They are found in the following groups :—

(i)—Auriti	...	Ruddy Turtle-Doves.
(ii)—Maculicolles	...	Neck-laced (broad gorget) Turtle-Doves.
(iii)—Tigrini	...	Spotted Turtle-Doves.
(iv)—Streptopeleœ	...	Ringed Turtle-Doves (half-collar).

The first four species (792—795) might be placed, as birds found in the district at one time or another ; but they frequent lower

altitudes and are rarely seen much over 5,000 feet elevation, excepting *Turtur Suratensis*, Spotted Dove, which ascends a thousand or two, feet higher. Blyth say "The *coo* to this dove is plaintive, and agreeable, something like *oot-raow-oo, oot-raow-oo*; but far from easy to express in writing"—I should think so. The *coo* is certainly sweet and plaintive, and one longs to hear it again.

FAMILY GOURIDÆ *(Ground-Doves).*

SUB-FAMILY PHAPINÆ

Bill is slender; wings longish; tail short and rounded; tarsus longer than *Turturinæ*; toes long especially the hind toe; claws a bit curved. Phapinæ are beautifully marked, metallic hues of green chiefly.

GENUS CHALCOPHAPS, bill is slender; wings longish 2nd and 3rd quills longest; tail fairly short and rounded; tarsus unfeathered and longish; toes long. Chalcophaps are chiefly found on the land; but take readily to the trees, where they roost for the night. Their flight is strong and swift.

(798) CHALCOPHAPS INDICUS, *Bronze-winged Dove*, rarely ascends higher than Kurseong. It is usually found about 5,000 feet elevation. These birds seldom show themselves in more open country, they are more frequently seen in dense bamboo forests; at times coming on to jungle paths to feed. In habits, and characteristics generally, they are more like game-birds. *Chalcophaps* is 10½ inches in length; bill coral red; orbits flesh colour; irides dark brown; feet purplish red; plumage of the male is shining emerald green with a golden tinge; back and wings dusky, more particularly the tail excepting outer feathers, which are greyish; primaries also dusky; a white bar on the shoulders; under parts, together with breast and neck are reddish brown in colour.

(4)—ORDER RASORES.

———:o:———

Or Gallinaceæ comprise, what are more commonly called, Game-birds, which form an interesting Natural Order. They appear chiefly to be known for the opportunities they offer, on the wing, for testing the accuracy of a sportsman's eye, and the pleasures, the pastime of shooting holds out to nimrods, also for the excellency of their savory meats. However admirable these qualifications are, I feel, that little can be added to this phase, of the life history of game-birds, so that if we turn our attention in other directions, we will find a feast, pleasure and entertainment more in accordance with the scope of this work. The bill of these birds is short and vaulted, bent at the tip usually wattled near the base; wings strong, short and rounded; legs and feet strong and partly feathered. Males have usually, a tarsal spur; hind toe short, excepting *Turnix* which have no hind toe; claws a little curved strong and blunt. These birds, usually, scrape the ground, whilst hunting for food; thus called "scratchers" or "scratching birds," which habit among game-birds is more typical than was found among other Orders. They are birds usually of large size and heavy build. Males are bigger in size, in most species crested and with richly coloured plumage. Rasores indulge in dust baths, chiefly to rid themselves of all superfluity in the shape of insects, scales or undeveloped shafts (feathers) which have been irritating their skins, more so about the moulting season. We cannot do better than follow the groups, found in the accompanying list.

A—Hind toe on the same plane.

(i)—CRACIDÆ.

(ii)—MEGAPODIDÆ.

B—Hind toe raised, or wanting.

(iii)—PTEROCLIDÆ	...	Sand-grouse.
(iv)—PHASIANIDÆ	...	Pheasants, etc.
(v)—TETRAONIDÆ	...	Grouse and Partridges.
(vi)—TINAMIDÆ	...	Bustard, quails, etc.

Of these groups Nos. III, IV, V and VI are found in India. We shall pass over the Family *Pteroclidæ*, or Rock-grouse, as these birds chiefly frequent central Provinces ; sandy districts around Agra, Delhi, etc., and the West of India.

IV.—Family PHASIANIDÆ.

These well known birds have, the tail lengthened and broad. Bill longish when compared with the next group *Tetraonidæ*, Grouse and Partridges ; nostrils apart, face nude, with or without lappets and wattles as the case might be, head of some of the species crested. Pheasants usually feed on the ground ; but readily take to the trees when disturbed. Higher altitude pheasants roost at night among pine trees when available. This is more noticeable around and beyond Sandakphu.

Sub-Family PAVONINÆ.

Genus Pavo, bill slender and longish ; crest erect, a little like miniature flags, which flutter in the breeze ; orbitar skin nude ; tail of 18 feathers, train lengthened and beautifully ocellated.

(803) Pavo Cristatus, *Common Peacock*, belongs to a separate branch of the family. They are found in most parts of India. In the district they are frequently met with in warmer valleys and in the Terai. On the Himalayas they are seldom seen above 2,000 feet. I feel that little can be said of this beautiful and interesting bird, as it is so well known. It is a pretty sight to see a big number of them together. I shall not readily forget a unique opportunity I had of observing over a hundred peahens and cocks congregated together at an out-of-the-way Hindu temple of Kuntinnugger, one hot and oppressive day in May, more so, as this place is near the Terai. It was latter part of the day, in the evening. Shadows of trees were lengthening, before sun had sunk behind the mighty Himalayas. An aged, looking, priest, strolled out of the temple, with a big basket of grain, and gave about, half a dozen loud echoing shouts, a few minutes later, a whirl of wings was heard, as peacocks came sweeping in, in all directions and settled in the court-yard. There must have been near on a hundred birds of all

sizes. The old priest flung grain in handfulls in amongst them, without stint, and soon they were pecking away merrily, for all they were worth. They seemed to forget their wild nature, and looked like a crowd of domesticated fowls. There were peahens with their well developed broods ; lordly peacocks strutted fearlessly about with magnificent tails. All of them, birds which had only a few minutes before rushed into the nearest thicket at approach of a human being, or flown into long elephant grass for safety at the slightest rustle within earshot. I learned later on, that this daily feeding of peafowls, at a fixed hour was an old established custom at the temple. I thought at the time, ample opportunities one had of observing habits and other peculiarities of these birds and how much closer one could get to them, in their wild state, when once their confidence had been gained. Peacocks can be looked upon as friends of animals, birds and human beings generally. How often has one, when out shooting big game in the Terai, been warned of the approach of a big tiger by the cries and restlessness of wild peacocks, not that these birds need fear anything, themselves, from master stripes ; but as soon as they observe, the slow cat-like, stalking of the man and his dusky companions, as is often the case, approaching the Tiger unprepared may be, peacocks seem to do all in their power to attract attention to the impending danger, not far ahead, much to the disgust of stripes.

The next bird to follow the Peacock is Argus Pheasant. It is sometimes called Pea-pheasant. These beautiful birds are not found in the district. They frequent more particularly Indo-Chinese districts to the east and south of us.

SUB-FAMILY PHASIANINÆ *(Pheasants)*

frequent more or less the hill portions of India, in preference, temperate climates. Tail, in most of the species, is long ; head usually crested.

GENUS LOPHOPHORUS, has a pea-cock like crest ; bill lengthened and hooked at the tip ; tail short, slightly rounded at the tip ; plumage is rich green, with a metallic golden gloss.

(804) LOPHOPHORUS IMPEYANUS, *Monaul Pheasant*. This beautiful bird is closely allied to pea-fowl, and connect the latter birds to pheasants. They remind us not a little of both groups. Monaul pheasants used to be found plentiful beyond Sandakphu, and the

wide stretching downs at Sikarghum ; but of late years they have preferred the more sequestered hills of Nepal on the other side of the range. These pheasants are met with usually above 11,000 feet altitude, seeking in preference pine forests, which are met with at this elevation. They feed, chiefly, on seeds ; white (wild) everlasting daisies, and aconite roots which they are partial to. Whilst foraging, they use their bills a good deal, and dig up the more friable soil (ground at this elevation is loose, easily operated upon) when feeding male birds, act sentry, for their more careless, and self-reliant hens, which feed in groups of twos and threes, whilst the cock bird, about a hundred yards off or more, works with extreme caution, always (on these hills) on a sharp look out, with his "weather eye" open for all emergencies. Either their sight or powers of hearing are so acute and accurate, that it is with remarkable care that any one can, on these hill slopes, get within close quarters, to observe their habits and peculiarities. Once a cock bird gets alarmed, the shrill cry, a *click-click-click* can be heard for miles, startling the hens, and other foraging groups. Usually the cry is taken up by another male, some half a mile away, and so on, till the neighbourhood is alive with their shrill clicking or cackling noise. These males are strong on the wing, and once raised, they sweep over the hill and down the gorge at a great speed, followed by the hens, a good way behind, and are soon lost to view, over crest of the hill, and down into dense forests in Nepal. I often wondered, these monogamous households, don't get a bit mixed up; by what particular sign they re-collect again ; whether leaders ever get mixed up or trespass on anothers preserves, or loose sight of their hens, altogether. They don't seem to care two raps, one way or the other, judging from the rapidity, and head long flight, hardly casting a second glance, or look for the safety of the hens, after once the imperative warning has been given. Call of the male is well known on these hills, a sort of *quick-quick-quick*, a double note of metallic sound, which slowly terminates, long after their safe arrival in the more hospitable "bush." You will frequently see, badly prepared skins of these birds, males chiefly, snared by hillmen ; brought in for sale, so it seems hardly necessary to describe these pheasants. Lophophorus is 24 inches in length ; colour of male, above, is brilliant irridescent purple, on the back and neck ; head, with crest and throat bright metallic green, a golden gloss over greater part of the head, neck and body ; wing-coverts, lower back and upper tail-coverts glossed with purple and green ; quills black ; tail cinnamon rufous ; lower parts of the body black.

(805) CERIORNIS SATYRA, *Sikkim Horned Pheasant.* This beautifully coloured pheasant is found nearer the snows, where it used to be found in biggish numbers ; but now they are less frequently

met with, owing to their indiscriminate slaughter by hillmen, who chiefly snare them. Skins much be dragged, hanging up for sale in the Bazar is a common sight. Owing to the bright fiery red colour of this *Ceriornis*, they have occasionally been popularly miscalled Argus or Blood-pheasant. Both these birds are distinct from this species. *Satyra* feeds much on tender parts of young shoots of fern leaves. They are not averse to eating Indian corn (maize).

(807) ITHAGINIS CRUENTUS, *Green Blood-pheasant*. This beautiful and curious looking bird is difficult to find in its natural elements on higher ranges of Singalillas. Some years back it used to be fairly plentiful, beyond Sandakphu. I saw big coveys on several occasions some years ago, now it is with difficulty you will meet a solitary pair on this side of the range. These birds usually frequent thick Rhododendron cover beside bigger Jhoras, generally near water, at times they are met with amongst pine forests. *Ithaginis* feeds much on tender pine and juniper stocks and berries. Blood-pheasants present many peculiarities in structure, some of the males have as many as five tarsal spurs, usually three are found, according to age of the bird. Hillmen tell us that after every two years a fresh spur is added, if this reckoning be correct a bird with three spurs would be about 6 years old, and that its natural span of life seldom goes beyond 10 to 11 years, provided no accident befalls it. These birds are allied to *Pukras* pheasants ; but unlike any of the pheasants found on eastern Himalayas the Blood-pheasant is tame and confiding. It takes a fairly hardened sportsman to shoot them down, when he gets into a covey unawares. Some run along the ground with startling rapidity in different directions, uttering a frightened cackle, like domestic fowls ; a few take to dense cover, under which they have been feeding. On such occasions they seem to "lose their heads" and make, but a poor attempt to escape. As you stand under the highish cover, and watch them, one or more will come close to you, or perch a few yards over head, in the utter confusion which has followed your sudden appearance in their midst. One can easily understand how depredations have been made on these interesting and confiding birds. One of my Lepcha companions told me that on such occasions, hunters usually "bagged" the whole covey which used to consist of 20 of 30 birds. A few general remarks as to colour, will suffice to distinguish the Green Blood pheasant. In size it is only 17 inches, a little bigger than Lerwa, Snow-partridge ; plumage of the male, above, is dark grey, median line of feathers is streaked black and buff ; buff on the sides, more so neck ; a tinge of green on lower back and part of wing coverts (greater) ; tail grey ; forehead and cheeks black ; crest dull grey, feathers centred with buff ; breast and lower part of body feathers, and flanks pale green ; breast feathers centred, broad, red in colour,

also under tail-coverts. This is what might be called a rough estimate of colour found on this pheasant. Legs are coral red ; orbits bright red ; head crested ; tail shortish, of fourteen feathers. We previously observed pheasants with 18 tail feathers. Pukras and Kalij have 16. Green Blood Pheasant from its size, habits and peculiarities of structure may be considered as a link between pheasants and partridges. *Cruentus* has hitherto only been found on the higher altitudes, and has a restricted area of distribution chiefly E. Nepal and Sikkim 10,000 to 13,000 feet elevation.

Genus Gallophasia, are allied more or less to jungle-fowl. They frequent altitudes from 4,000 to 7,000 feet. Head is crested ; orbits red ; longish hackles on breast and neck ; plumage is glossy black and white, streaked. Tail of these pheasants, of 16 feathers like jungle-fowls, longish, a bit convex, raised in the centre. Though they keep much to denser parts of forests, where they roost, at dawn they go far afield to forage. They are often raised or "started" in more open country, when they fly well and make for the nearest jungle. They often enter fields of hill crofters to forage, more on tender shoots than the grain. Ravines and hollows on the hills, they seem to prefer.

(811) Gallophasis melanotus, *Sikkim Kalij Pheasant.* This pheasant can generally be found in thick jungle a little way out of Darjeeling. It is getting more difficult to find, of late years owing to the way these birds have been knocked about. On more than one occasion I startled a solitary bird in Birch hill forest. They are however more at home, on Ghoompahar range, where they breed and are frequently observed, in short scrub jungle and bare slopes of the hill, at outskirts of forests. Kalij is 27 inches in length ; bill horny yellow ; orbitar skin red ; irides brown ; plumage of male, above, is glossy black ; breast hackles are long tinged with white and ash ; beneath, feathers are white ; abdomen, vent and under tail-coverts, brownish black. This bird differs in colour from Kalij, found on western side of Himalayas, also species, in the further east—Assam and Tipperah. *Melanotus* is more glossy black above, and lacks the white crest of the former species, and the white lower back plumage of the eastern bird. *Melanotus* when startled or disturbed has a shrill call resembling *koorchee-koorchee*, which sounds like a warning to its hens to look out, at other times a more satisfied and reassuring call of *koorook-koorook-koorook*. The Kalij seldom ascends over 8,000 feet.

SUB-FAMILY GALLINÆ.

These comprise of jungle-fowls or spur-fowls found chiefly in the plains, one group frequents lower ranges in the district. Head, in some of the species, with crest and wattles ; tail, in most, of 14 feathers, in shape compressed and partially convex in appearance ; upper tail-coverts elongated and dangle downwards.

(814) GALLOPERDIX SPADICEUS, *Red Spur-fowl*, is sometimes met with in thick, bamboo jungles usually at a lower elevation, about 4,000 feet. Plumage of the cock bird is uncommonly like the domesticated, or rather Barndoor fowl to which species this spur-fowl belongs; in other words the latter fowl was taken from *Spadiceus*. Red Spur-fowl is more slender in form, muscular and pheasant like in shape.

(813) GALLUS SONNERATI, *Grey Jungle-fowl*, commonly called the moorhen is not found in the district.

FAMILY TETRAONIDÆ *(Grouse and Partridges).*

This family is made up of Grouse, Partridges and Quails. They are stout, heavy, birds with shortish necks and short, stout bills ; tail fairly short ; tarsus short and stout ; face usually feathered. Tetraonidæ frequent low scrub jungle lands, and more open country. They are found usually in numbers, or coveys.

SUB-FAMILY PERDICINÆ.

I.—SNOW-COCKS and SNOW-PARTRIDGES.

These birds form a link between Grouse and partridges.

(816) TETRAOGALLUS HIMALAYENSIS, *Himalayan Snow-cock*, or Snow-pheasant as it is sometimes called, is not likely to be met with except on higher altitudes, where they are scarce and difficult to find. The Snow-cock lives chiefly near the snows. It is sometimes called by sportsmen, Snow- and Strath Chuckor. It is a biggish, heavy, looking bird, about the size of Black-cock of western Highlands of Scotland. They are found chiefly on Palæarctic altitudes. One usually associates them with bleak snow bound rocky

country. They descend to lower elevations as snow storms drive them down to more sequestered spots. In some respects they are not unlike some of the pheasants Monaul in particular, in habits, though unlike these birds they associate in biggish flocks. Their call is shrill, clear and Monaul like. They seldom or ever seek shelter in the pine forests ; but prefer open country, and bare rocky uplands. They appear, when grouped together, not unlike white and grey looking Ptarmigans, and can be observed from a distance. They make an easy mark for the eagles, which frequent these heights and keep them on the move.

(817) LERWA NIVICOLA, *Snow Partridge*, is found on a like altitude as the former species, and remains much in coveys on bare open ground. They are grouse-like in many respects, on the other hand not unlike snow-cock. In winter they descend to lower elevations. Occasionally a stray couple or two remain to breed above the bare slopes at Tongloo and Sandakphu where I have now and again found them. *Lerwa* is about 16 inches, extent 24 inches ; legs and feet red ; bill short and strong ; orbits plumed ; wings big and pointed, 2nd quill longest ; tarsi partially feathered, also with spurs ; colour grouse-like as a whole ; barred with black and yellowish white ; chestnut tinged on wing-coverts, sides of the neck and shoulders ; quills brownish with yellowish freckles ; underparts with longish chestnut dashes which coalesce on the breast ; tail with bars of grey and rufous.

II.—ROCK and SAND PARTRIDGES.

(820) CACCABIS CHUKOR, *Chukor Partridge*, are well known birds in the plains. Some of them ascend in spring, to near the snows. In the district they are occasionally met with, about, latter part of the rainy season, when numbers of these birds hide away among "Bhuta Khets" as fields of Indian Corn are called in the hills. This Chukor is about 16 inches in length ; bill red ; irides yellowish white ; legs and feet red ; colour, above, is pale bluish ashy tinged with chestnut ; wings reddish ash ; tail ash with a chestnut tinge ; face reddish with a black band near the eyes ; lores black ; a white streak behind the eyes ; neck and breast ash coloured ; under tail-coverts and abdomen buff, a prominent black band on either side of the breast. Sexes are alike in colour ; female a little smaller than the male. Kyah Partridge is found at foot of the hills.

III.—GREY or BUSH PARTRIDGES, are not found in the district.

IV.—WOOD-PARTRIDGES.

GENUS ARBORICOLA, *Hill Partridges* or *Green Partridges*, are found chiefly on the mountains. In size smallish. They adhere pretty closely to denser parts of the jungles and forests. Tarsus is free of spurs; toes and claws long; tail short, of feathers softer than the foregoing species.

(824) ARBORICOLA TORQUEOLA, *Black-throated Hill-partridge*, is rarer in this district, than the next species. It frequents thickly wooded parts chiefly in Sikkim, and are found about 9,000 feet elevation. It descends during winter months to 6,000 feet. These birds usually associate in pairs. In the cold weather they appear to be more gregarious. Both these species are often found foraging together with some of the pheasants, and live chiefly on roots, seeds and berries, occasionally on buds and flowers; wild everlasting daisies, and tender cryptogams. *Torqueola* is about 11 inches; bill black; irides deep brown; legs red; colour of the male, above, is olive on the shoulders and back, with dusky semi-circular spots; wing coverts olive and chestnut, with spots; head, ear-coverts and sides of the neck ferruginous; black on sides of the head with a white supercilium; throat black bordered with white; bright olive on upper breast; lower breast and belly whitish; flanks olive with streaks of chestnut and white; tail olive tipped dark and speckled with black.

(825) ARBORICOLA RUFOGULARIS, *Rufous-throated Hill-partridge*. Though more plentiful, in the district, than the former bird, nevertheless, it is difficult to find, as it keeps close to dense jungle cover, and never seems to come out into more open country. This Hill-partridge, occasionally, visits jungle lands below Darjeeling; but appears to be more partial to an elevation of 5,000 feet. In size it is 11 inches; wing extent 19 inches; bill black; irides red brown; orbits dull lake red; legs red. Its handsome, brightly coloured collar on the breast, of ferruginous with black specks, makes it readily distinguished; plumage of the male, is not unlike former species, differing chiefly in the deep ferruginous with black spots on the throat, and sides of the neck; a black collar surrounding the ferruginous gorget. These two Hill-partridges are similar in habits and general characteristics.

SUB-FAMILY COTURNICINÆ (*True Quails*)

Differ from the latter species by their longer and more pointed wings. They are strong on the wing, and display a constant desire

to shift from place to place, from one locality to another, and show greater migratory tendencies than most of the Rasores. Bill is moderate in size ; wings longish and pointed ; tarsus lacking spurs. They are birds of small size.

(829) COTURNIX COMMUNIS, *Large Grey Quail*, or "barra batter" as it is called by hillmen, is frequently observed in Indian corn fields (Bhuta Khets) about 4,000 to 5,000 feet elevation. This is supposed to be the quail, which got Israelites of old into trouble, at one period of their murmurings. This bird and its congeners differ from the former groups ; in bill, being more slender, straight, or with a slight curve in some species ; wings long and pointed, concealing the short, rounded, soft tail. *Communis* is 7½ inches in length ; wing extent 14¼ inches ; bill horn coloured ; irides yellow brown. This Quail is found all over India. It is known as European or Common Quail. They visit the plains in large flocks in the cold weather, where they are snared and netted in big numbers for the market.

FAMILY TINAMIDÆ.

SUB-FAMILY TURNICINÆ.

(833) TURNIX OCELLATUS, *Hill Bustard-Quail*. This pigmy game-bird is difficult to find in the outskirts of Darjeeling and the district. It usually inhabits dense undergrowth jungle. When they come out of their seclusion to feed, they beat a hasty retreat when approached. "Timok-pho," as Lepchas call this bustard-quail, presents many interesting features, not found in *Rasores* or game-birds generally. Chief of which, perhaps, is absence of the hind toe and difference in the anatomy of *Turnix*. Hens are larger than the males, and more richly adorned. In disposition they are bolder and more pugnaciously inclined, which are qualities more honored in the breach than the observance among female *Rasores* generally. However the hens have their good points, for when in a "tight corner" they readily assume the offensive, more so, when a move has to be made. She fight gamely for dear life, in the breeding season for the lives of her household. On other occasions, when met with in a more open space, in spring, when energy and vivacity are at a premium ; provided the birds have not seen you, you may

find hens indulging in little tilting combats, probably a "love affair." Like mail-clad warriors of old, a short run, a dunting skirmish and then a going for each other "tooth and nail." The male birds, (there are seldom more than two or three males at these day light revelries) hardly notice this little by-play and knots of combatants, they appear to take a wider sweep of life's horizon. Size of these birds is about 7 inches, feathers and all, so that ; as a game-bird, it would hardly curl a human voracious appetite, when in the gally pot. A most interesting Pigmy true bustard is to be found, near Llassa, feeding in flocks, I am told, on the broad sandy shores or rather chirs. This bird appears like a miniature of the lordly bustard of the Deccan. *Turnix Ocellatus*, has much speckled or mottled plumage, barred with black, more so on under parts of the body, above, brown and mottled ; bill slaty brown ; irides pale yellow.

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ORDER GRALLATORES.

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We have, now, dealt with *Raptores* or rapaceous birds ; *Insessores* or Perching birds, including Passerine birds ; *Gemitores* or Pigeons and Doves, are occasionally placed among the game-birds, which we considered, a convenient terminating group for *Insessores*, and introducing us to *Rasores*, which we have briefly examined. Nor have we lost sight of the main object of our enquiries, *viz*, to enable us to associate, more closely with bird life, in their natural surroundings.

There still remains of the Natural Orders Nos. 5 and 6. *Gallinaceous* birds or *Grallatores*, and the *Natatores*, which comprise "water-birds" of books on popular Natural History.

Grallatores or shore-birds, as they are designated, have tarsus elongated and bare, also part of the tibia bare (unfeathered) ; feet usually long ; hind toe raised and undeveloped or wanting in some of the groups ; tail shortish ; wings inclined to be long. A number of these birds have long necks. Bills are long in not a few ; feet partially webbed, though at the same time toes are free and unincumbered. Their flight in migratory seasons, is usually strong, though many scarcely leave the locality they frequent. These birds feed much on aquatic insects, fish etc. Some few live more on vegetable substances. They are divided up into two main groups.—

(A)—Like game-birds, young, feed, and are able to take care of themselves when hatched.

(B)—Those, that are born callow and helpless like *Insessores*, requiring the constant care of parents, and not leaving their nests till fairly matured—(altricial).

(A)—Young able to run when hatched—(Precocial).

I.—Tribe	STRUTHIONES	...	Ostriches, Emeus, etc.
II.— ,,	PRESSIROSTRES	...	Bustards, Plovers.
III.— ,,	LONGIROSTRES	...	Snipes and Sandpipers.
IV. ,,	LATITORES	...	Rails and water-hens.

(B)—Young, helpless at birth. (Altricial).

V.—Tribe CULTIROSTRES—Storks, Herons and Ibises.

(A)—The first, we need not trouble about, as they are not found in India—Ostriches, etc :—

II.—TRIBE PRESSIROSTRES.

Tarsus longish ; bill short, thick, strong and sides compressed. They frequent sandy plains, marshes and banks of rivers.

I.—OTIDIDÆ	...	Bustards and Floricans.
II.—CURSORIINÆ	...	Courser-Plovers (a sub-family).
III.—GLAREOLIDÆ	...	Swallow-Plovers.
IV.—CHARADRIDÆ	...	Plovers.
V.—HÆMATOPIDÆ	...	Shore-Plovers.
VI.—THINOCORIDÆ	...	Game-Plovers (American).
VII.—GRUIDÆ	...	Cranes.

I.—Family OTIDIDÆ.

Though none of these birds are found on our hill sides in the district, it would be unwise for various reasons to banish them from our list of acquaintances. Bustards and Florikins ; bill is short, stout and broad at the base, foretoes slightly webbed, hind toe wanting ; wings strong and pointed ; plumage more like game-birds.

(838) Sypheotides Bengalensis, *Bengal Florikin*, is found in the plains. In the Terai it is frequently met with in fields under cultivation, wide river chur lands, nullahs, and in among long elephant grass, as it is called. This big, heavy, magnificent bird has a broad, longish bill ; longish legs, part of the tibia is bare (unfeathered). Bengal Florikin is about 26 to 27 inches in length ; plumage is black, beautifully mottled ; white about the wings. Variations in colour are seen according to season of the year and age of the bird. Like a few of the game-birds, female is perhaps heavier and

bigger than the male. This Florikin is found at the foot, and approaches to the Himalayas, and frequents most of the country suitable to its tastes up to the Gangetic plains. Whilst Leek or Lesser Florikin reserves, more or less, south India as its special rights. These two species seldom appear to trespass on each others domains. Bengal Florikin is frequently met with, when one is out for big game in the Terai. On such occasions these florikins become wild and restless when they observe, the approach of the lordly monarch of the jungles. This friendly little tip usually puts a more veteran sportsman and shikares on their guard for the sudden appearance of a Tiger. It is a pretty sight to watch a full grown cock florikin, in spring, about early in May, soar up perpendicular to where it has been, with quick, strong flaps of the wings, a minute's pause to take breath, as it were, then another ascent till satisfied it has seen all that is to be seen of the surrounding country, above, the long wavy grass, on a warm spring morning or less frequently, mid-day, it drops to the ground again. When in company with the hens, its habits are not unlike the homely turkey, as it struts, lifts and droops its wings, humming a peculiar chant all for their edification. Florikins usually cast all bird principals overboard and seem to care but little for social technicalities. They, perchance, prefer to live like our primitive forefathers did, before marriage laws were instituted. Should you, ever find yourself in the burning, scorched up Terai, you will have but little difficulty in making out this bird, as it passes you on its way, perhaps, to old frequented feeding grounds, by its slow, steady flapping flight; or it may be, when observed, standing conspicuously on sandy chur lands by bigger mountain rivers. I have seen them on wide stretching shores of the Balasun, Teesta and Meechi, a mile or two beyond the foot of the hills.

FAMILY CURSORIDÆ

These birds have lengthened tarsi, which give them a tall, raised appearance. Bill slender; plumage more of a brown and chestnut colour; three toes only in most of the species. Birds of smaller size than the last family.

GENUS CURSORIUS. Bill longish, slender and curved; wings moderate; tail short; tarsus long and slender, protected by scutellæ; short lateral toes; claws small.

(840) CURSORIUS COROMANDELICUS, *Indian Courier-Plover.*

(841) RHINOPTILUS BITORQUATUS, *Double banded-Plover.* Both these birds are found in the plains. The latter species frequents foot of the hills. I saw numbers of them at Titalea in the Terai. They seem to be partial to bare rocky ground and seldom wander far from certain localities. In size about 10 inches. These birds introduce us to the true wading birds, with long tarsi ; slender bills and short tails generally. The former species has 1st and 2nd quills (wing) longest ; the latter 2nd and 3rd. *Rhinoptilus* has a shorter and stronger bill ; feet short and outer toe webbed. These plovers live chiefly on bare open country. They run with ease and not a little speed in fits and starts, which characteristics make them differ in habits from the more phlegmatic waders. Courier-plovers, usually, associate in flocks and are oftener seen on lands broken up by the homely Indian plough. They feed chiefly on insects. None of these birds are found in the district.

FAMILY GLAREOLIDÆ *(Swallow-plovers).*

Commonly called *Pratincoles.* These birds have given trouble to fix their true position among the family groups. Some would have liked to have placed them among the Swallows, to which birds they bare a resemblance in formation of bill and the forked tail, also as they associate freely with these birds. Others would consider the place of Swallow-plovers among Night-hawks. Cuvier placed them among Grallatores. I merely mention these few facts, to give a general idea of these birds. However, they are hardly likely to be seen in Darjeeling or the district, unless a few stray birds, whilst on their northern journey to breed, stay to rest their wings. They are plentiful enough in the plains. Near big rivers they are seen skimming low, as a rule, over a wide expanse of water or sandy churs. Bill is short and arched ; gape wide ; wings long and pointed ; tail usually forked ; tarsus short ; hind toe small. Both species of Swallow-plovers are found in the Terai.

(843) GLAREOLA LACTEA, *Small Swallow-plover,* has a shorter tail, and more even. Unlike Large Swallow-Plovers, it migrates but little and breeds in the plains. Both species are plentiful at Titalea, *Orientalis* only in the cold weather as it passes over, in numbers and breeds, on high altitudes. *Lactea* is 6½ inches ; plumage, above, is

yellowish brown ; upper tail-coverts white ; tail white tipped brown; white also about the wings ; breast dull yellowish brown ; beneath and under tail-coverts white.

FAMILY CHARADRIIDÆ *(Plovers).*

Here we have a different group of birds, which ascend our larger rivers. In spring they pass over in big numbers into Thibet and high altitudes to breed. The bill of these birds, is straight and strong ; wings fairly long and pointed ; tail generally short ; tarsus long ; toes short as a rule. Plovers are gregarious, they are generally seen feeding on damp secluded hollows and wide grassy downs ; usually preferring sides of rivers to forage. They are more frequently met with in the cold weather, on banks and shingly shores of Great Runjeet and Teesta rivers at no great elevation. Their easy flight and more typical colour makes them readily distinguished, more so, as plovers are a well known type of birds. They differ from Snipe and Sandpipers chiefly in size and shorter bills. Like the latter sub-family *Cursorinæ*, they run with ease. In build they are stout and more robust. As both Plovers and Lapwings are well known birds they scarcely require a separate account with each.

SUB-FAMILY CHARADRIINÆ *(Plovers).*

Bill short and weak ; tarsi shortish ; wings long and pointed 1st quill longest ; tail short ; usually having either a small or no hind toe. *Charadrinæ* are birds of fairly small size.

(844) SQUATAROLA HELVETICA, *Grey Plover*, is generally found on banks of big Indian rivers. Size about 12 inches ; bill black ; irides dusky brown ; colour is deep black on the forehead, throat and underparts ; a little white edgings to the feathers on the head and sides of the neck ; upper plumage is brown barred with black and white. These plovers are frequently, among the birds, for sale in game-stalls of New Market, in Calcutta, together with a miscellaneous collection of Snipe, Stilts, Sandpipers and even Jacanas.

(845) CHARADRIUS LONGIPES, *Golden Plover*, is found on the plains of India in the cold weather. They pass over the district on their way to the marshes in Thibet to breed, as soon as the snows on the passes melt, and the north wind blows warm and enticing. Occasionally on these migratory journeys one or other of the weaker winged members of the party, drop behind and settle in the district to recruit their infirmities: an injured wing or a shattered leg, after the war of the elements or battle of guns down in the plains. I have on more than one occasion fallen in with these stragglers to the hospitable uplands of Thibet. Golden Plover is 10 inches in length; wing extent 20 inches; bill blackish; legs and feet bluish green; irides brown; plumage, in winter, is a blackish grey, feathers edged with golden yellow; primaries black, a tinge of yellow on the breast and foreneck. These birds change colour a good deal, more noticeable when passing into Thibet on their return journey. *Ring-Plovers* on the other hand are well known by the conspicuous black colour round the neck. They are birds of small size, 6 to 7 inches in length. These Ring-plovers are among few of the *Charadriinæ* which remain behind, in the plains to breed. *Cantianus* and *Philippensis* are frequently seen on banks, and churs of the Runjeet.

(848) ÆGIALITIS CANTIANUS, *Kentish Ring-plover*, usually prefers sea-side neighbourhoods, nevertheless they find their way far inland, keeping much to water-ways in the plains, and bigger rivers in the hills. In size it is 6¾ inches; wing extent about 14 inches; plumage, above, is ashy brown; primaries brown; tail ashy brown with some white showing chiefly on the sides; upper part of the head and nape reddish; white collar round the neck; streak of white over the eyes; white, and a black streak on the forehead; sides of the head black (lores and ear-coverts); beneath the body plumage is white, two large patches of black on the breast.

(849) ÆGIALITIS PHILIPPENSIS, *Indian Ringed-plover*, is perhaps not so plentiful in the warm valleys as the last species. In size it is 7¼ inches, wing extent 13½ inches; bill is black and yellowish; irides brown; orbits yellow; legs yellow; plumage, above, is ashy brown; quills brown; tail, ashy tipped with dark brown, white feathers on the sides; head white in front bordered with a black band, supercilium, lores and part of ear-coverts black; ring, collar of the neck, black and white; plumage, beneath the body, white.

SUB-FAMILY VANELLINÆ *(Lapwings)*

Are generally larger in size than plovers ; legs lengthened ; bill fairly strong ; most of the species, have a short hind toe ; tail generally white with a dark band.

(851) VANELLUS CRISTATUS, *Crested Lapwing.* Near the district, it is generally found in the Terai, not far from rivers and nullahs. This Lapwing is better known, as English Pee-wit. Its size is 12 inches ; bill black ; irides hazel-brown ; legs dull orange ; upper plumage, green with a bronze coloured gloss ; primaries are black, a few of which are tipped white ; tail white with a broad band ; sides of the head, throat and breast are glossy bluish black ; lower parts of the breast, and beneath are white ; chestnut on lower tail coverts.

(852) CHETTUSIA GREGARIA, *Black-sided Lapwing*, or the Common Peewit, belongs to a genus which has a stronger bill ; head not crested. It is rarer in these parts than in some districts in the plains. Occasionally two or three show themselves on the banks of thu Runjeet. It is migratory in habits, being chiefly a winter visitant here. They pass over early in spring, to breed in Thibet and Central Asia. They frequently find their way to Europe. *Gregaria* is 13 inches in size ; bill and legs black ; irides dark brown ; plumage, above, is olive brown and grey ; primaries black, secondaries white ; tail white with a black band at the tip ; supercilium white ; head, above, black, white on the forehead ; narrow band from lores black ; sides of the head chestnut ; breast ash brown ; part of abdomen deep black, the rest chestnut ; under tail-coverts white. The second group of this family have fleshy wattles and four toes.

(855) LOBIVANELLUS GOENSIS, *Red-wattled Lapwing*, is fairly plentiful on the banks of Teesta river. "Did he do it?" is the questioning cry oft repeated, which sounds in your ears, when you spy this lapwing, as it runs away from you, when observed on the sandy churs ; or as it is seen leisurely folding its wings, as you pass by, may be. The question, of course, refers to old covenanting days, when this lapwing's forefathers aided the dragoons to hunt down the covenanters. In size *goensis* is 13 inches long ; bill red with a black tip ; wattles lake red ; irides reddish brown ; legs yellow ; colour is glossy black on the head, face, hind neck, throat and breast ; white on ear-coverts, sides of neck and nape ; brownish green on the back and wing-coverts ; black on a good part of the quills ; tail white having a broad black tip ; beneath, plumage is white.

III.—HOPLOPTEREÆ, shoulders spurred, no hind toe.

(857) HOPLOPTERUS VENTRALIS, *Spur-winged Lapwing*, represents 3rd group. It has a typical spur on the wings. This is sharp pointed and is a serviceable weapon, which aids it in offensive and defensive business. One or two flips of the wing and the antagonist is fairly driven off. If it has'nt drawn blood, the venturesome one is sent off rubbing its sides and smarting under the dagger thrusts it has received. Such events, however, are rare, most birds have a wholesome respect for *ventralis*. These long legged Lapwings are often seen on the banks of Runjeet river. At times higher up, on churs formed by the little Runjeet. *Ventralis* is 12 inches in length ; bill black ; irides brown ; legs reddish black. In general appearance, a distribution of black and white in most of these Lapwings. *Ventralis* has a long crest ; glossy black on the head, part of the face and throat ; white streak behind the eyes ; back and wing coverts ashy ; quills black, with portions of white showing ; white also on some of the wing-coverts ; tail white, broadly tipped black ; beneath white, with a black line in the centre ; a patch of white on the breast.

(858) ESACINÆ RECURVIROSTRIS, *Large Stone-plover*, is more commonly known as Ganges Lapwing. They are not found in the district. It has a long sub-curved bill, convex in shape. This species is 20 inches in length ; wing expanse 36 inches ; bill tipped black, the rest yellowish green ; irides yellow. The prevailing colour is brownish grey ; sides of the head black also tail band, parts of the wings, more so at the ends, which take in a few of the quills and coverts up to winglets and shoulders ; wings and tail broadly banded with white ; plumage beneath white. They are often found on the sea coast, beside big rivers and on sandy chur lands.

FAMILY HÆMATOPODIDÆ *(Sea-plovers)*

Are found mostly near the coast and fishing villages near the Sea.

(860) STREPSILAS INTERPRES, *Turnstone*, is a smallish size bird when considered among the ordinary run of waders ; being about 8½ inches long. It has a strong, heavy, looking bill, wings long and pointed ; tarsus short. It is not common in Bengal. When met with it is usually seen hunting for small crabs and insects.

FAMILY GRUIDÆ *(Cranes)*

This family has no representatives in the district or foot of the hills. They are winter visitants in the plains. Excepting *Sarus*, they pass over the Himalayas to breed. Cranes are well-known birds in India. They are readily distinguished by their large size; long necks; pale grey and white plumage. These birds are allied to bustards and plovers. Bill is fairly long, thick and straight; tarsi long; toes short and strong; wings, tertiaries long and over hanging.

(863) GRUS ANTIGONE, *Sarus Crane.* This immense bird is about 52 inches in length; wing extent nearly 8 feet; weighing about 18 lbs. It is found in Bengal, and other parts of India. Usually when alarmed it has a loud trumpet-like call, and a garrulous way of skipping about. It gives vent to its feelings by a heel and toe step. A sort of Highland-fling is at times indulged in, on the slightest provocation. If you fail to find a Sarus in its native elements, you will have but little difficulty in finding a tame species if desirous. The plumage of Sarus is pale blue turning to grey in colour; head and neck unfeathered having crimson papillæ, with a sort of ruffle or mane hanging down from nape to the neck; bill light green tipped brown; irides reddish orange; legs and feet rose coloured with a tinge of red.

(864) GRUS LEUCOGERANUS, *Large White Crane*, is rare and seldom seen.

(865) GRUS CINEREA. *Common Crane* of Europe, as it is called visits India in the cold weather.

(866) ANTHROPOIDES VIRGO, *Demoiselle Crane*, is a beautiful bird found in most parts of India. In size it is 30 inches long; plumage is a fine purplish grey; quills black; the long drooping tertiary feathers are dark slaty; black on the head and neck, also on the long breast plumes; legs black; irides ruby red. This bird comes over from Northern Asia in the cold weather. *Anthropoides* in particular has a light fantastic dance, all its own, usually for the gratification of Miss Demoiselle.

TRIBE LONGIROSTRES.

Which are made up of the large family *Scolopacidæ*, and *Himantopidæ* with a limited number of species. These are birds with lengthened bills, slender and feeble; wings generally long and

pointed ; tail short ; tarsus longish ; toes of fair length, outer and middle toes webbed ; hind toe raised and small, absent in a few species. They might be considered among the smaller sized birds.

FAMILY SCOLOPACIDÆ

Comprise, the True Snipe, Godwits, Sandpipers, Curlews and Stints. Bill long, slender, having a soft sensitive tip in some of the groups ; wings and their tertiary feathers lengthened ; tail short ; tarsus fairly long ; toes a little webbed. Feathers are more or less brown in colour, above, white beneath. They are divided into the following Sub-families :—

I. *Scolopacinæ*, True Snipes ; II. *Limosinæ*, Godwits ; III. *Numeninæ*, Curlews ; IV. *Tringinæ* Stints ; V. *Phalaropinæ*, Coot-footed Stints ; VI. *Totaninæ*, Sandpipers, Green and Red-shanks. *Tringinæ*, bills short, *Numeninæ* bills curved, Godwits and Avoset Sandpipers bills up tilted. Soft at the point in Snipe, Sandpipers etc. hard.

SUB-FAMILY SCOLOPACINÆ *(Snipes)*

Bill long, sensitive, straight, soft and blunt at the tip ; plumage richly marked.

(867) SCOLOPAX RUSTICOLA, *Wood-cock*, some difficulty will be experienced in discovering this bird owing to its seclusive habits. Usually it is found in dense unfrequented forests. Wood-cock builds its nest at high altitudes. It descends to outskirts of Darjeeling, and the district to about 1000 or so feet below, when the cold weather approaches. When cry of the Wood-cock is heard, you can be sure that winter in Darjeeling, is fairly on. This bird differs from snipe in being larger in size, and built on stronger lines ; tibia is feathered to the knee ; bill long, thin and soft, blunt and sensitive at the tip ; wings long and pointed, 1st quill the

longest ; tail short, composed of 12 soft feathers ; tarsus short and strong. *Scolopax* is about 15 inches ; wing expanse 25 inches ; colour of the plumage is a mixture of chesnut, ash and yellow ochre, with zigzag lines and irregular spots of black ; under neck has cross bars of brown ; quills barred with black and ferruginous ; tail black ; legs livid ; typical Wood-cock feathers must be well-known. These birds appear to be seldom "at home," except in their native haunts, dark secluded forests, marshy, water-logged, nooks and corners, where they are occasionally met with.

(868) GALLINAGO NEMORICOLA, *Wood Snipe*, is perhaps more difficult to find than Wood-cocks, as it leads a solitary existence, in deep forest recesses. This bird has the tibia bare, a little above the knee. *Nemoricola* is about 13 inches ; wings broad and soft. They are found more readily on swampy lands at a lower elevation. Plumage, above, back black, feathers bordered with chesnut ; zigzag markings of reddish grey about scapulars, back and wing coverts ; quills darkish ; tail dark with whitish bars ; breast ash and buff faintly barred ; under parts are more whitish ; lower tail coverts chesnut ; more or less zigzag lines, streaks, and bars predominate over greater parts of the plumage of Wood Snipe. As it is a rare bird to meet, this general description will suffice.

(869) GALLINAGO SOLITARIA, *Himalayan Solitary Snipe*, visits our forests in winter ; descending from higher altitudes in Sikkim and the Singalillas. It spends a lonely existence, wherever found, social advantages are scrupulously avoided. In habits it is not unlike the last two species. When one finds them on rare occasions, probing the soft soil, cautiously, with their sensitive bills, they remind one of wise treasure hunters. It is no easy matter to find their eggs. They usually retire beyond Jongri to breed. Occasionally a single pair or two, at this season of the year, are met with, in secluded corners at a lower altitude, near Sandakphu and Phalut. They generally seek shelter in dense forest undergrowth. *Solitaria* is 12½ inches in length, extent 20 inches ; plumage differs a good deal. The specimen before me is much darker than usual, as it was secured from a high altitude ; upper plumage is snipe like ; but more spotted and barred chesnut ; buff stripes on the shoulders ; secondaries and tertiaries broadly barred dark brown and rufous ; tail dark banded with ashy rufous ; breast olive brown, with white and brown bars and white strokes ; underparts whitish. The chances of meeting the bird, are small, so that more minute details in colour of markings, will obviously be neglected.

The remaining species of snipe are plentiful in the plains,

especially when brought in for sale in most of the bigger markets in Bengal, where they can be distinguished at leisure.

(870) GALLINAGO STENURA, *Pin-tailed Snipe*, will probably give some trouble in distinguishing, owing to its similarity to the common snipe. In length it is about 10 inches, under wing-coverts are richly barred with dark and white lines, a further distinctive feature is, in the possession of a shorter bill, tarsus and feet, and difference of tail. In Darjeeling one or two *Stenura* are occasionally found hanging up, for sale, by the corner of fish shops, among a batch of snipe and waders. On open marshy country and jeels in the plains, they are usually made out by their smaller appearance and richly barred wing-coverts.

(871) GALLINAGO SCOLOPACINUS, *Common Snipe*, is a trifle bigger in size ; they are well-known birds. *Scolopacinus* is 12 inches ; crown and back are crossed with chesnut and brown bars, having a velvety appearance, with yellow ochrous longitudinal streaks ; flanks barred, white and dusky ; underparts of the bird are pure white, also breast ; tail black with a good portion of the end reddish brown, barred black and feathers tipped white. These birds are plentifully distributed throughout damp marshy and water-logged districts in India. They have to pay a heavy toll to sportsmen and snarers, for privilege of passing the winters in the balmy south, before they retrace their steps (flight) again, in spring to high and secluded retreats in Thibet, and Central Asia, where they are comparatively safe to recruit their numbers in peace.

(872) GALLINAGO GALLINULA, *The Jack Snipe*, is at times, rarer than most of the commoner species of snipe, and is not easily noticed as it takes advantage of the smallest cover or tuft of grass to conceal itself till a likely marauder has passed by. However, they seem to be more easily found, when hung up for sale in the game stalls, such have usually been netted in the plains. This snipe is made out by the greenish and purplish glossed feathers on scapulars and back, and a band of yellow from the shoulders to tail. In length it is $8\frac{1}{2}$ inches ; bill bluish tipped with black ; irides brown ; legs and feet greenish.

(873) RHYNCHÆA BENGALENSIS, *Painted Snipe*. These birds spread themselves, throughout the plains, where they wander about, different localities according to season of the year. They do not pass over into Thibet, on migratory journeys, like most of the Snipe family, and other birds of passage ; but remain in the plains.

Painted or Ibis-billed Snipe, as it is sometimes called, are found in most water-logged lands and patches of paddy cultivation in Bengal. The different species of Snipe are difficult to separate, as they are alert and strong on the wing. They give but little opportunity for field observations, unless, their habits and more typical markings are already, acquainted with. A profitable twenty minutes could be spent, examining colour of the plumage of, even, much bedraggled specimens, hanging up for sale in the market. Female *Rhynchæa* is 9½ inches in length; male 9 inches; bill reddish brown; legs greenish. This species is made out by the fine prominent buff coloured ocelli, on the outer web of the quills, inner-web cross barred; tail olive grey, with rows of buff ocelli. Should it be preferable to make the acquaintance of this Snipe in its live state, among the low lying lands: on the wing it has pecularities of its own in flight, which is more laboured than other species and appears to tire sooner; when on the land, it invariably runs a good distance, from the spot it has, just alighted on, so that you need not expect to find it, where you have so carefully marked it down in your mind's eye. This Snipe appears to have, more confidence on its legs, than trusting itself to jerky flights in the air. When first set up, it flies not unlike a quail, with wings and tail ridged and convex curved, more so the former, much like some of our game-birds, partridges, etc. Some of the migratory Snipe, remain on this side of the passes to breed; but always at high elevations, not infrequently, near the snows.

The Godwits have lengthened bills, and are allied to the Snipes. The bill has a slight uptilt or tip tilt, nearer the point. They are more sombre in attire: legs are longer than snipe; feet partially webbed; wings long.

(874) MACRORAMPHUS SEMIPALMATUS, *Snipe-billed Godwit*, owing to its resemblance to the last group it is sometimes taken for a Snipe. There is considerable difference in plumage, and in other points which cannot be hastily overlooked. In size it is 13 inches; bill dusky; irides brown; legs bluish green; legs lengthened; plumage above is ashy brown, feathers with light margins; neck and breast whitish, with darkish zigzag lines; flanks and lower tail-coverts barred, rest of the lower parts are white; tail with black and white bands. Snipe-billed Godwit is somewhat rare, as it usually prefers to remain in Northern and Central Asia.

(875) LIMOSA ÆGOCEPHALA, *Small Godwit*, is plentiful enough in the cold weather. Their whistling call is often heard, when, near a jeel or larger expanse of water, partially surrounded by reeds

and rushes, and a shore full of quagmires. You can generally make them out by their long bills, which are sub-curved, near the tip, of orange reddish colour at the base, above ; lower back white ; quills dark, with white at the upper end : greater coverts are edged white ; upper portion of the tail white, remainder black ; under plumage, neck and breast are whitish.

(876) TEREKIA CINEREA, *Avoset Sandpiper*, brings us nearer "home" (Darjeeling). It can without much difficulty be made out, usually feeding or quietly resting on Sandy shores of the Teesta and Great Runjeet. It is a small sized bird, about 9 inches in length ; its bill is long, slender and recurved in shape found in Avosets. In appearance and habits it is dainty looking ; plumage is bluish ash, with dark streaks ; cheeks white with ashy spots : wings and shoulders dark brown ; lower parts of the body are white ; legs and bill orange yellow, darker in colour towards end of the bill ; tarsus fairly short ; front toe partially webbed.

(878) NUMENIUS PHÆOPUS, *Whimbrel*, is commonly called "Wood-cock of India." It is gregarious and found in flocks, near Jhils, Lakes and marshy Nullahs. It usually arrives in the country from its home in Northern altitudes, about middle of September. In size it is about 17 inches ; plumage above, is dark brown, feathers are edged pale on the back and wing coverts ; lower back and rump white, the latter with lines of brown ; tail brown with cross bars ; under tail-coverts and body beneath white ; flanks barred ; head ashy coloured, with pale-streaks. Its streaked appearance of colour, and well flavored flesh, makes it a good substitute for Wood-cock.

(879) IBIDORHYNCHUS STRUTHERSI, *Red-billed Curlew* can, generally, be found without much trouble on the banks of Little and Great Runjeet, or on wide sandy churs of the Teesta. The wings of this bird are long ; tertiary feathers also lengthened, similar to what was noticed in Lapwings, is says Hodgson. "A curlew with short legs and feet of a plover," or as Gould says "feet are like those of *Hæmatopus* (Oyster-Catcher) and its bill that of an Ibis." Both these remarks give a fair idea of this species. In size 16½ inches. *Ibidorhynchus*, has a well curved bill, long and slender, upper mandible grooved ; wings long ; tail short ; tarsus short and strong ; no hind toe ; bill deep crimson ; irides red ; legs bright red. This bird is found chiefly on the Himalayas.

The next few birds, Ruffs, Knots, Curlew Stints, Dunlins, Sunderlings etc. are common and plentiful in the plains ; seldom or ever come near the district.

(891) ACTITIS GLAREOLA, *Spotted Sandpiper*, is often met with on the banks of our bigger hill rivers. In size, about 9 inches. It has a longish bill, straight and slender ; tail lengthened, toes longish. These small birds keep much to themselves, and are usually found singly. They can run nimbly along sandy and shingly shores of rivers, with great ease and elegance. Sandpipers are natty little birds, carry themselves lightly and gracefully. They usually seek out marshy damp spots. Most of the Sandpipers change colour a good deal, according to season of the year. They are found with greater facility in winter, when colour of the Spotted Sandpiper is dark brown, with white and greyish spots ; on the back, head and wings brown, white about the sides of the head ; upper tail coverts white ; tail striped black and white ; breast dull white, with streaks and spots of brown ; underparts white, flanks barred with brown.

(899) RECURVIROSTRA AVOCETTA, *Avoset*, is the next bird likely to be met with, more readily in the district. On the whole it is fairly uncommon, though they are seen beside the bigger rivers, on swampy ground chiefly ; occasionally on high altitudes. This Avoset is 18 inches in length. Its bill is very long, typically curved, thin, rather flexible, concave in shape, well turned up at the tip ; wings long and pointed ; tarsus long and slender ; toes webbed ; hallux (hind toe) minute. Colour, black predominates, above, and pure white beneath the body ; head, upper neck, back, lesser wing coverts and primaries are deep black ; the remaining portions of the bird are white. In winter they are occasionally founds on the banks of Teesta or swimming about in the more peaceful eddies. The bill is black ; irides red brown ; legs bluish.

SUB-FAMILY PARRINÆ

We will have to turn our attention to the Terai for the two species represented in this group :—Jacanas. These birds are made out without much difficulty. They form a curious class of Water-birds, which frequent Jhils, pools or ponds of more or less stagnant water, lakes and marshes where broad leafed aquatic plants, water lilies etc. luxuriate ; over which the Jacana finds a secure foothold. These birds are of moderate size, with typically very long feet and claws ; hind toe also very long, which aids them to run with ease on the broad floating plants on surface of the water.

(900) METOPIDIUS INDICUS, *Bronze-winged Jacana*, is frequently seen, in stagnant pools in the Terai. One, might have mistaken it

for a Water-hen, if it had not skimmed daintily over the surface of a pond, with such ease ; planting its long toes comfortably on so insecure footholds, as broad round leaves would allow. Lotus being more readily selected, which barely gives under the weight of its body. These birds breed in India. I have occasionally seen the hen sitting quite unconcernedly on her floating nest of weeds and rushes, in a quiet secluded corner of a wide partially stagnant nullah in the Terai. Eggs of Jacana are beautifully marked with dark wavy lines. The female is 12 inches in length ; male about two inches shorter. Bill is stout, compressed and thick ; forehead with lappets of skin ; tail short ; wings fairly short 2nd and 3rd quills longest ; tarsus long ; toes very long and thin ; claws long and pointed. Typical bronzed coloured wings of this species makes it comparatively easy to distinguish.

(901) HYDROPHASIANUS CHIRURGUS, *Pheasant-tailed Jacana*, is not so common in the Terai as the former species. They are seldom met with near foot of the hills. Male is about 18 inches, 10 inches of which is the tail, so that it is not a particularly big bird. Long pheasant-like tail, which gives it a Game-bird appearance, helps to make out this species. In habits it is similar to *metopidius indicus*. Its eggs are not so prettily marked, being an uniform bronze colour, bright and glossy. Call of this bird is loud and striking, a sort of *pee hoo*. Jacanas feed much on shells and water-insects, occasionally on tender shoots of water plants. Its bill differs from the last species, being slender and lacking lappets on the forehead ; also in a few other points in structure.

FAMILY RALLIDÆ

Two groups included in this family, perhaps we might say three Coots, Water-hens (Water-fowls) and Rails, are birds which must be well known to all. They have a, partially, Game-bird appearance, head is small ; neck short ; body differs slightly, being more compressed in shape ; bill wedge shaped, compressed and pointed ; legs strong ; tarsus fairly short. In the Coots, feet are long and webbed.

(902) PORPHYRIO POLIOCEPHALUS, *Purple Coot*. This species has a very strong, thick, compressed, conical bill, with a peculiar looking casque, on top of the head ; gonys descending ; tail short ; tarsus strong ; toes long and bordered in a typical manner, by a narrowish web, a structure of web peculiar to Coots, and, perhaps, repeated again in a more exaggerated form, in Grebes. This species is found in most places in the plains, among reeds and rushes on marshy ground. I have seen both Purple, and Bald Coot on the

Singalillas. The former on one or two occasions among reeds and grasses on the drying up, once biggish lake at Tongloo. In size this Coot is 18 inches ; bill and casque red ; irides and legs brick red ; plumage of this species is a greyish purple on hind neck, back and upper tail-coverts ; wing-coverts pale blue ; quills dull blue ; tail black with bluish upper edgings to the feathers ; under parts are blue chiefly about the lower neck and breast purplish about sides of the body ; under tail-coverts white ; *Poliocephalus* has a loud call, and its flight is labored. It does not fly far, usually drops or dives down in the rushes again. It slips through the vegetation, about the place—more aquatic plants—with remarkable ease, unimpeded by the tangle labyrinth.

(903) FULICA ATRA, *Bald Coot*, is a little smaller in size, tarsus moderately long ; toes long, having much wider lobed membrane than Purple Coot, which aids it not a little whilst paddling about the jeels or diving, with equal facility. Bill is shorter and thick, upper mandible compressed and deflected, at base of which, is a horny shield like protuberance, on the forehead ; wing short, concave 2nd and 3rd quills longest ; tail short and apologetic ; tarsus compressed ; toes very long with wide lobes ; claws curved and sharp ; plumage soft and closely feathered, which like most "water-birds" aid it together with the fatty substance, to keep out the water. Coots' nests are usually, floating on surface of the water. In the same precarious position, as Jacanas, occasionally, indulge in. Eggs are nicely marked with red and dark brown spots on a greyish red ground colour.

Doubtlessly Water-hens are well known to you, for they differ but little in habits from the species found in Europe. These birds together with the Rails, though common in the plains, are not met with on the Himalayas, they are found on marshy places, where they feed chiefly on larvæ, water insects, and grain, occasionally leading a fairly solitary existance. Some of the groups of species pass over into Northern and Central Asia.

(913) RALLUS STRIATUS, *Blue-breasted Rail*, usually retire to breed on Sub-Himalayan districts. In appearance their bodies are compressed looking ; bills are longer than Coots and Water-birds as a whole, slender and straight, a little bent at the tip ; it has a small spur on the shoulders ; forehead feathers are spiny. *Striatus* is 10½ inches in size ; bill and legs are greenish ; irides red ; dark chesnut, on the head and upper neck ; general appearance of the plumage, above, is olive, with narrow black and white bars ; beneath, bluish in colour, more prominent on the fore-neck and breast, the remaining underparts are dull olive with white bands.

TRIBE CULTRIROSTRES.

FAMILY CICONIDÆ

This group takes in the Storks, Herons and Ibises, which go to make up a typical class of birds, with thick, stout, pointed bills, elongated tarsus ; tail short ; wings strong. These birds introduce up to the second of the two main divisions, *Gallatores*, were, naturally (by nature) divided into. This latter group, the young are born helpless and callow. They are dependent upon the parental care and attention, till able to leave their nests. A state, different to Game-birds, and the group we have been just considering. These birds when full grown acquire a rather, stately walk and bearing. Perhaps, their careful bringing up, and home surroundings, have made them a bit exclusive and "uppish"! who knows. It is certainly not mummie's fault if they turn out "harum scarums." Their long legs, however, generally appear, ungainly, and give the bigger members of this tribe of *Cultrirostres* a look as if they were preparing to kick the first prospective enemy or adversary, or bore a grudge against all two legged beings. As might be expected, these birds are equally at home on the ground or wading in the water. Stork's bill is large in size, stout and thick ; Heron, on the other hand, has a slender and pointed bill ; Ibis, more a curved bill. The first two birds differ a good deal from each other. the former in size and form, the two inner toes being webbed. Storks are well adapted to stand on one leg, an accomplishment found, though perhaps not so noticeable, in most birds. To rest or sleep on one leg, is an attainment, we poor mortals cannot indulge in, we find it no easy matter to sleep on the bough of a tree, without getting a sudden shock to the whole nervous system, by pitching forward in a most unenviable manner.

(915) LEPTOPTILUS ARGALA, *Gigantic Stork*, or Adjutant as it is sometimes called, can easily be made out from herons by their large awkward forms and stout bills, also from the practice it has, of resting, chiefly, on one leg. This Giant Stork is fully 60 inches, 5 feet in length, and could be Goliath of the Indian birds, though this particular honor has been conferred on the big Heron (921) who is doubtlessly a giant among Herons, though he scarcely comes up to 60 inches in length. Gigantic Stork may be seen, feeding or reclining on the bank of the Runjeet river. It possess a noticeable pouch on the foreneck, which hangs some 16 inches down, which is an accessory to the respiratory system. Bill is large, stout, thick and long ; wings long 3rd and 4th quills the longest ; tail short ; tarsus protected by thickish scales, feet with narrow web ; claws

blunt. These birds are found in most parts of India. They are migratory in their habits, and mix freely among scavengers, in the form of vultures, kites and crows, in and about Calcutta, where they dispute for the possession of garbage cast out chiefly at the Salt Lakes. I would not recommend a close investigation into the general menu or bill-of-fare of these birds.

(920) CICONIA LEUCOCEPHALA, *White-necked Stork*, is a different kind of bird to the latter species, in habits and general characteristics. It is found throughout the plains, in places, where most of the Waders congregate, on marshes and Jhils. These birds feed principally on water insects, crabs and batrachia (frogs etc.). It is called "beef-steak bird" by sportsmen, in India, on account of the big succulent slice of flesh, which can be got off breast of the bird, in its roasted state. White-necked Stork is about 36 inches in length, wing expanse 68 inches; plumage in black, with a purplish gloss, excepting the head, neck and tail, which are white; it has a greenish gloss on upper tail coverts and quills; bill has a reddish tinge; irides red; face unfeathered; a bluish patch behind the ears. This Stork is sometimes found in the district. In the cold weather they have been seen passing north-ward over Sivoke.

(921) ARDEA GOLIATH, *Giant Heron*. The Herons when compared with Storks have, typically, more slender and sharp bills, tips of which are pointed. They have long legs and necks; outer toes are webbed; the head has a long crest, which hangs down the back. In size Goliath is not quite 5 feet in length; bill dusky, tip greenish; irides yellow; orbita skin greenish; legs blackish. It stands about 4 feet off the ground; colour, above, is bluish grey; crest is short, dark brown in colour; neck chesnut; lower parts dark chesnut brown. Giant Heron, though a rarish bird in India, is met occasionally, on banks of big rivers in the district, at times, as far up as Great and Small Runjeets.

(924) ARDEA PURPUREA, *Purple Heron*. This is another species likely to be met with at a low elevation, in places where water-birds are usually found. In the plains it is fairly common, and seems to prefer, as a rule, well sheltered places amongst reeds and rice fields, where they also generally select their breeding places in spring. *Purpurea* is about 40 inches in length; plumage, above, is reddish ash on the back, wings and tail; scapulary feathers are long, purple in colour; breast and flanks brownish red; foreneck purple, also the long upper breast feathers; crest black, tinged with green; sides of the head reddish brown, with black stripes on the breast, which gives this bird a snake-like appearance, when it lifts its head among

the vegetation it is feeding amongst. The inquisitive look and peculiar colour of these birds produce quite a startling affect, when one meets them in out-of-the-way places, and your thoughts are none too cheery of falling in, with a Cobra or two unawares.

(927) HERODIAS GARZETTA, *Little Egret*, is to be found near foot of the hills in the district. These birds are plentiful in most places in the plains, and build their nests on trees. Long narrow feathers which go to form the crest of this bird, are found in the breeding season, after this period they drop off, together with lengthened dorsal and pectoral, auxiliary, feathers. In winter the Egret presents a different appearance. *Garzetta*, is 24 inches. In colour generally, of the feathers, it differs much according to season of the year. The breeding plumage is white. Bill black; greenish yellow on the orbits; legs black; toes yellow.

(930) ARDEOLA LEUCOPTERA, *Pond Heron*, is well known, under the popular name of "the Paddy Bird," or "Blind heron" among Indians, owing to its tame unsuspecting habits. In length 18½ inches; bill partly blue, tip black; orbits greenish yellow; irides yellow; legs and feet greenish; breeding plumage is white on the wings, lower back (rump), and upper tail coverts, tail and underparts of the bird; above, crest of white plumes; head and neck greyish yellow; back dark maroon. The name "Paddy Bird" signifies its partiality for paddy (rice) fields, where it is generally found. It feeds chiefly on crabs, fish, frogs and aquatic insects.

(932) ARDETTA FLAVICOLLIS, *Black Bittern*. Here we have a different class of bird. Bill like Egrets, slender and straight; tarsus stout; neck feathers long, like true Bitterns. This species has black plumage; bill bright reddish brown; cere bright purple. *Flavicollis* is about 24 inches in size. It is a handsome looking bird, not common in the plains and not frequently met with in the hills. Though its booming, somewhat, drum like sound, call can often be heard as dusk of evening approaches, for this bittern has marked, nocturnal habits. It is generally found or heard near the Great Runjeet river. Where perchance, may find you, spending the night in a lonely out-of-the-way, bungalow, not far from the junction of Runjeet and Teesta rivers. About where, I, on one occasion pitched my tent. An oppressive stillness closed around, with the fast approach of night. The calls of wild animals in dense, dark forests, above the gorge, and slopes of the hill (Goke spur) are heard, now and again, followed by the drum-like sound of the Black Bittern. It makes one think, at first, of the likeness, to the sound proceeding from a Thibetan monastry on the distant hill, or a "Jhankri" aiding

the primitive folk, in the solitary huts, dotted here and there on the hill side, to drive evil spirits away. At such times when you have scarce discovered the sound to be, of this lonely night Bittern, its cry sounds weird ; when the barking deer's hoarse call, echoes up the glen ; gets answered by the doe on the farther darksome forest ; a leopard or a panther snarls at its own shadow ; when the howl of the wolf is heard, but a stone's throw, away. These birds frequent, dense undergrowth jungle, reeds and the long grass which hill folk use for thatching purposes. Colour of this Bittern's plumage changes a good deal, like most of the birds belonging to *Ardeidæ* family. In spring the feathers are ashy black, the long neck feathers are reddish brown tipped with black, as we noticed when examining Purple heron, the long stripes on either side of the neck, you will find similar markings in this bird, only of a golden yellow colour ; back feathers are somewhat conspicuous being long and prominent ; breast ash ; underpart whitish. You would need to rise early to be in time, to find this species, and get into the thickest parts of "Khur" lands. When the sun is up, these birds lie low and all the hunting will not rouse them from their siesta, for they turn their nights into day and avoid the bright sunshine with pernicious loathing. The remaining species of this family are not found in the district.

Family TANTALIDÆ

Comprise the third group of this interesting tribe, *Cultrirostres* were divided into. Though none of this family are found in the district we cannot overlook the Ibis. They differ from storks and herons. Their beaks are more or less curved. Bill is long and rounded ; half the tibia is unfeathered ; legs and toes long ; front toes are webbed.

(938) Tantalus leucocephalus, *Pelican-Ibis*, is a well known bird in India, more so perhaps, as it is often met with, quiet and domesticated in homes and gardens, chiefly in the plains. These birds, at one time, conveyed an idea of ease, opulence and wealth of its owner, whose well kept lawns and prim surroundings, in which, the Ibis, stalked about with much grace and dignity. Such quiet scenes are giving place to the motor car and flourish of trumpets. In size this Ibis is 42 inches ; wing expanse about 6 feet ; bill yellow ; plumage is more or less white ; wings, tertiary feathers with a roseate tinge, a dark band near the end ; lesser and middle coverts green and glossy, with white edges, greater coverts are white.

(939) PLATALEA LEUCORODIA, *Spoon-Bill*, is more plentiful than the former birds. It is seen in the plains. In Bengal these birds frequent more marshy parts, or they are seen in flocks feeding on the land or collected together on the trees, near by a wide expanse of water. On these trees they usually build their nests in crowded colonies, with other species of Water-birds. The name Spoon-bill is obvious, owing to its curiously formed bill, which is spoon shaped, long, very broad, depressed and thin, dilated and rounded at the extremity. The forehead is nude ; tarsus long and reticulated ; on the head it has a long hanging crest ; front toes are united by a web. A side view of this bird from a distance will not always help one, to recognise it, by the unique looking bill ; colour of its plumage aids, one, not a little. In size it is 35 inches ; bill black with wavy lines of yellow. Exposed skin of the face etc. is orange yellow. It has a buff yellow patch on upper breast ; same colour, a short way along sides of the back, otherwise the bird is pure white. These Spoon-bills are usually found in groups of fives or sixes feeding in or by the side of rivers, lakes etc. in the plains, and paddling in search of small fish, aquatic insects, snails, frogs and molluscs. They are often seen in company with other species, Shell Ibises in particular, which birds generally accompany them on their migratory journeys. Some of these mixed flocks have been observed passing over into Thibet and Central Asia. Whilst on the other hand numbers of Spoon-bills remain behind, and build their nests on lofty trees, near swamps and lakes in the plains. You will occasionally find a tall clump of shady tamerind trees, at the outskirts of a village, near a large expanse of water, which is crowded at the breeding season with nests of herons, egrets, cormorants and a few spoon-bills. The eggs are typically elongated oval, pointed at one end, of a chalky white colour, tinged with yellow, a few of the eggs are marked with blackish streaks and blotches.

(940) ANASTOMUS OSCITANS, *Shell Ibis*, is the boon companion of the Spoon-bill. This species is plentiful about the marshes and water-ways in Bengal. They roost at night, also at midday, in the warmer months, on tall leafy trees, usually at no great distance from water. The Shell Ibis is about 30 inches in length. The colour of this bird varies a good deal. Generally their plumage is pale ashy-grey, with a reddish tinge on the head and neck ; wings, scapulars and tail are black ; but birds displaying more, pure white are frequently seen. As the name implies this Ibis feeds on snails and the like. It secures the large *Ampullaria* (common in the plains), holds it with its feet ; slices clean off the operculum, then with a few turns and twists draws out with its bill the captured snail, from its shell, much the same way, as we would suck a marrow bone. It is not so long ago, in backward native states, the cruel practice was

indulged in, of sewing up the eyes of these unfortunate and timid birds. In this state they were reserved for a day's royal sport, when they were let lose, one at a time ; trained Peregrine falcons sent after them. On the occasion I witnessed this "sport," the odds were on the side of the powerful and tenacious peregrine—perhaps just as well, for one hardly likes to think what cruel fate awaited escaped Shell Ibis, with both its eyes securely stitched up.

The Shell Ibis is not always successful in getting enough, snail shells to appease its appetite, consequently like its friend the spoon-bill, it falls back on small fish and frogs. They breed on lofty trees, in big colonies, in the plains, according to the dimentions of the tree tops, along with many other waders etc. *Night-Herons*, *Black Ibises* and Whistling-teals.

ZOOLOGICAL GARDEN
CALCUTTA.

NATATORES.

This brings us to the 6th and last Natural Order, we find birds divided into. These are swimming birds, which have well webbed feet, and legs having a backward position on the body, with plumage thick and close, feathers impervious to water, being impregnated with an oily substance, which helps to keep the skin of body dry, in spite of their general aquatic habits.

These birds are divided into two main groups like *Grallatores* according to their state at birth.

(1) A *(Autophagous)* young capable of looking after themselves, and follow parent at birth.

I. *Anatidæ*—Ducks.

II. *Mergitores*—Loons and Grebes.

III. *Vagatores*—Gulls and Petrels.

(2) B *(Heterophagous)* young requiring special care and attention of the parents.

IV. *Piscatores*—Cormorants and Pelicans.

V. *Urinatores*—Auks and Penguins.

TRIBE LAMELLIROSTRES.

I. Group A—ANATIDÆ *(Ducks)*

Comprise of the following Families :—

I.	PHŒNICOPTERIDÆ ...	... Flamingos.
II.	CYGNIDÆ ...	... Swans, long necks, legs short.
III.	ANSERIDÆ...	... Geese etc. (legs more forward than last).
IV.	ANATIDÆ ...	... Ducks (legs short and placed far back.
V.	MERGIDÆ	... Mergansers, bill toothed.

They have thick, depressed bills, broad, tip horny, edges with thin horny lamellæ, which aids the bird to retain, what food it has secured. whilst getting rid of puddle and water it has drawn up into its beak ; dertrum : the horny tip of bill, is hard and solid, generally coloured, differently to the bill. It is a sort of nail, to protect the soft sensative beak from injury. Most of the species, belonging to this tribe migrate to Central Asia and lakes in Thibet.

I. PHŒNICOPTERIDÆ *(Flamingos)*

Are birds with very long necks and legs, and bills longish which are turned or twisted downwards in appearance.

(944) PHŒNICOPTERUS ROSEUS, *Flamingo.* These beautiful and graceful birds are not always found in their haunts, beside big rivers, and lakes, in the plains. They are more abundant in Madras Presidency, and Central India. Flamingos are, comparatively, easily tamed. It appears to quite adapt itself to its new surroundings, and will not readily exchange, the better social status, it has been given, for all the Molluscs and Crustacea found in Chilka Lake, or big estuaries, and water-ways in India. So that if you have no opportunity of visiting these localities, you will doubtlessly cross the path of a tame flamingo. Occasionally these birds are found far inland. When reposing on quiet and peaceful, broad expanse of water, they are easily alarmed, and soon take wing, with loud trumpet-like calls. There are various species of Flamingos, *roseus* is commonly found in India. In size it is 52 inches ; bill rose coloured tipped black ; irides golden yellow ; legs and feet pale red with a rose tint ; plumage is a pretty roseate white ; darker and richer in colour on the head, back and tail ; wings white on some of the coverts and secondary quills ; primary coverts and tertiaries are fine rosy red ; remaining quills (primary etc.) are black.

As none of the II Family Cygnidæ (Swans) are found in the district, or in the plains, we shall turn our attention to III division of *Lamellirostres.*

III. FAMILY ANSERIDÆ *(Geese)*

Which have moderate sized bills, which are a bit wedge shaped in appearance ; legs longish, having a more forward position on the

body. Anseridæ are found, divided up into the following Sub-Families :—

I. ANSERINÆ—True Geese.
II. CEREOPSINÆ—New Holland Geese.
III. PLECTROPTERINÆ—Spurred Geese.
IV. NETTAPODINÆ—Anserine Teal.
V. TADORNINÆ—Sheldrakes etc.

I. SUB-FAMILY ANSERINÆ *(True Geese)*

Short, conic bill, high at the base, convex in shape, lamellæ exposed ; tarsus thick ; legs, nearly, central position on the body ; tibia feathered ; neck long ; body heavy, head small. These birds associate in flocks. Their migratory journeys are with clock-work regularity, to breed on high altitudes. They pass over the district in great numbers, to the far Thibetan lakes, a few species remain behind, and breed in the plains.

(945) ANSER CINEREUS, *Grey Goose*, visits the Northern parts of India, in winter, and is known as commom wild goose or Grey lag Goose, origin of our domestic goose. They fly over the district, high up, on their way to their happy hunting grounds on Thibetan lakes and marshes to breed and seldom or ever alight, whilst on their northern journey, which is generally accomplished as dusk of evening is setting in. Vast flocks of these geese, pass over, with their heads pointing due north, in long straight lines, rank behind rank, as though they were well drilled battalions. Grey geese are generally in long single lines, a sort of "half right turn"—a wedge shape. Occasionally the formation alters, and you can distinctly hear their cheerful hoarse, *quonk, quonk*. Often three or more companies, at accurately marked distances apart, follow at intervals in quick succession. I often think, that, we in India are not half thankful enough, to the lamas and inhabitants of Thibet for guarding so effectually, their sacred trust, as these battalions of water-birds represent—waders etc.—pour into the hospitable highlands of Thibet from the decimating plains of India. What would have been the results of the sportman's enormous bags, at Chilka Lake, or Chullan Beel, and other parts of the country ; or the netters' well stocked Calcutta and other markets, had it not been for the teaching of Sakya Muni of old, demanding undisputed protection in

Thibet for Geese, Ducks, Teals, Snipe and a countless number of other birds, which offer sport to sportsmen ; a savory dish to the eater ; or interesting and pleasant associations for those who have a friendly disposition for creatures great and small. As our eyes and ears, on bright moonlight nights, or in the still perceptible light of evenings in spring, catch the merry, joyous, homeward bound pilgrims of the night, who can read our thoughts ? We can but vaguely express in words that awe and reverence to the Creator, who has given these birds a safe haven of rest in that "closed land," where we can learn so little of their nidification. With what different feelings do we view these merry, shouting or whistling battalions hastening to the balmy east, or rather south, for as they pass over Darjeeling their course invariably is due south ; to more congenial winters, in the plains of India, when the snows have already whitened the lofty passes, over which they have had to cross. The feelings in most of us are, that, the stifling and humid heat of the plains is over ; that an ideal winter has set in ; but there are other feelings also ; that the guns must be got ready to try to break another record, and that the shikaries go out to hunt up good likely places, and observe the night before, where new arrivals have settled. The Grey lag Goose must make merry, many a Christmas party, of peace on earth and good will towards men. The common wild goose, must be well known to all. In size it is large, about 31 inches ; bill, high at the base ; lamellæ, tooth-like ; toes longish ; claws short and curved ; neck of fair length ; back, head, neck and most of the wing coverts, reddish brown, feathers white greyish edges ; bluish grey on upper portions of the primaries and lesser wing-coverts, rest of the primaries and secondaries are black ; rump and sides of upper tail-coverts are white ; tail brown and white on the sides ; breast greyish-white with wavy bars ; under tail-coverts white ; the remaining and lower parts of the body white ; bill orange red, tip light in colour ; irides brown ; legs red.

(946) ANSER BRACHYRHYNCHUS, *Pink-footed Goose*, is not likely to be met with either near or passing over the district. Together with Dwarf, White-fronted, and the Barred-headed Goose, are winter visitants in the plains and keep much to dryer portions of the country, towards the north-west.

(950) SARKIDIORNIS MELANONOTUS, *Black-backed Goose*, though fairly rare in Bengal, it is more frequently met with in other parts, chiefly Central and Western India. This is Comb-duck of sportsmen or better known as Nukta, owing to fleshy protuberance on the culmen (upper mandible), this comb is about 2 inches in height, giving the duck an uncommon appearance. Male about 34 inches

in length ; upper back and scapulary feathers are black, with a purple gloss, more dusky on lower back ; head and neck white spotted with black ; upper tail and wing-coverts glossy green ; quills and tail black ; lower parts are white. This goose builds in India. Mukta, like the true geese, feeds much on vegetation found near their haunts, and are fond of cropping green grass or tender paddy shoots.

(951) NETTAPUS COROMANDELIANUS, *White-bodied Goose-Teal*, otherwise known as " Cotton Teal " or Goslet is found in most parts of the plains. They are frequently met with in Bengal, paddling about, beels and tanks. Portions which are hidden away, secluded by reeds and rushes, seem to suit their tastes. These birds are strong on the wing, and have a peculiar call, generally heard at dawn. A few of the leading markings and colours will considerably aid in distinguishing this pretty goslet. It is about 14 inches in size ; bill black ; irides crimson ; legs greenish yellow ; wing-coverts green ; lower tail-coverts ash ; tail brown ; primary quills black, with a glossy green ; a large white patch on the wings ; secondaries tipped white ; white also on part of the head, neck and under parts ; top of the head black ; back and wings, have a rich purple gloss, so that general appearance, above, is green, and below, or underparts of the bird are white. These birds breed in the plains, on biggish trees, by the side of their usual haunts or sometimes on old disused buildings, from whence they fly down to the sheet of calm water, usually, not far off.

(952) DENDROCYGNA AWSUREE, *Whistling-Teal*. This well known bird you will doubtlessly notice is placed between, geese and the ducks, owing to their similarity in structure, habits etc. to both these groups. True Teal are smaller in size. Whistling-Teal are plentiful in most parts of the country. In size *awsuree* is 18 inches in length. Typically its bill is large and lengthened ; wings short, broad and rounded, secondaries long ; tarsus long and stout ; feet large ; hind toe longish. It is called Harrili hans in Bengal. Like the last named, it is a permanent resident in the plains. Its flight is slow and heavy, and it utters whistling-like calls on the wing, occasionally whilst resting on the surface of the water, usually, at dawn.

(953) DENDROCYGNA MAJOR, *Large Whistling-Teal*, is a rarer bird in Bengal than *awsuree*. In size it is about 21 inches ; bill, legs and feet are plumbeous in colour ; irides brown ; orbits pale bluish ; upper portion of the back is brown, feathers edged chesnut ; lower back is black ; lesser wing-coverts dark maroone ; the remaining coverts are black ; head, neck and lower plumage are chesnut.

GENUS CASARCA, bill moderate in size, nail large, lamellae slender : wings long ; tail short ; tarsus stout ; toes long : hind toe lobed.

(954) CASARCA RUTILA, *Ruddy Sheldrake*, or "Brahminy Duck" as it is commonly called, breeds beside large lakes in Thibet. I saw them early in spring paddling about, the cold waters at Shumpu, lake near the snows, beyond Jongri, or Tringbrum, in north Sikkim. There is a likelihood that a few of these birds, along with some of the other species of water-birds breed, in this locality, in preference to continuing their journey over the passes into Thibet. This Shaldrake is better known as Chakwa, Chakwi, the name being taken, from a modified part of the long conversation, the drake and its pair, appear to carry on, during the long moon-light nights, from different corners of the jhil, on which they are spending their winter retreat ; or the somewhat anxious months, prior to their homeward flight. These ducks are natty looking birds, when observed either on the surface of the water, or on the shore. Male is readily made out by its glossy black collar. A closer examination of Ruddy Sheldrake shows nicely tinted, and a general prevailing colour of orange and yellow ; back is orange brown ; head of the drake is ochreous ; yellow with greyish white on the nape, and crown of the head ; glossy greenish black on tail coverts ; white on wing-coverts, excepting greater-coverts. which are green with a purple gloss ; primaries are black ; breast and under parts of the body orange fulvous. In size it is about 25 inches. Female is smaller, and has a more sombre appearance, nevertheless Sheldrake, like all birds, is proud of his mate. These birds when taking stock of their vocal accomplishments, apart from the animated Chuckwa, Chucki conversation ; have a loud clarionet-like call, frequently heard on one of these beautifully clear winter mornings in the plains, when, it may be, it is your privilege to find yourself by the bank of a large expanse of water, or drifting slowly down stream in a homely budgerow. These clarionet-like calls appear clearer and louder, in spring when the birds are met with on lakes and marshes near on 15,000 feet elevation, where they make the welkin ring ; the hills to resound and echo, with startling effect, though on the whole perhaps, they are much quieter, and the call is only uttered when disturbed. There is, little, accurate information of the nidification of these birds, hillmen tell us, that they build, among rocks and shallow holes, near the outskirts of these lakes and marshes, in Thibet, occasionally in inaccessible places ; probably the jostling they have received in the plains of India have made, some a bit cheery of reposing over much trust and confidence in the powers that be.

(955) CASARCA LEUCOPTERA, *White-winged Sheldrâke.*

(956) TADORNA VULPANSER, *Shaldrake*, are much rarer birds, and difficult to meet.

FAMILY ANATIDÆ

Bill equal width throughout, bigger portion shallow and depressed, both mandibles with lamellæ ; tarsus short and legs with a backward position on the body.

They comprise of the following sub-families :—

I.—ANATINÆ	...	True Ducks (hind toe small).
II.—FULIGULINÆ	...	Pochards or Sea Ducks (hind toe large and webbed).

I.—ANATINÆ *(True Ducks)*

(957) SPATULA CLYPEATA, *Shoveller*, has upper mandible wide, and flattened in appearance, tip much dilated, not unlike a spatula, nail small ; lamellæ fine, hair-like, and highly developed, which aids these ducks to discriminate—select, and distribute, miscellaneous substances, which get drawn up by the bill ; thus retaining the easier, what foods are wanted, or may be desired and rejecting the rest ; tail a bit wedge-shaped ; tarsus short.

Most birds of this family are migratory in their habits, and winter visitants in the plains. You will find a number of species of *Anatinæ*, congregated together on Chullen Beel, or at Karagola Ghat on the old route to Darjeeling. In Spring they leave in big numbers for high altitudes. Shovellers and Gadwalls are usually closely associated together, and are seen much in each others company. They are always, and at all times on the best of terms, either when among reeds and rushes of shallower parts of the lake, or on the water quietly resting from their labours. Size of the Shoveller is 20 inches ; bill brownish black ; irides yellow ; legs orange ; colour of plumage, above, is dark umber brown on the back ; scapulars white ; upper tail-coverts brown, having a glossy blackish green appearance on exposed parts of the feathers ; outer feathers of tail-coverts are white ; parts of wing-coverts are bluish ; greater coverts have a brilliant green speculum, a similar marking we noticed on Sheldrakes and *Dendrocygna*, of brilliant colour ; quills umber brown

(primaries) and tertiary feathers dark purplish ; breast white ; under parts are reddish brown, also head of the bird. From the above description, you will notice a quantity of brown, in its various degrees of shades and tints of colour, to be looked for, when identifying this bird from numerous Water-birds it associates with, together with its general shape and cut. The Shoveller is looked upon, as a good type of the duck family, owing to its well developed particularities of its race.

GENUS ANAS. Bill is of moderate length, depressed and fairly uniform in width, tip rounded ; lamellæ short ; tail short containing 16 feathers, and a few curly feathers on upper base, which we are familiar with, on domestic ducks.

(958) ANAS BOSCHAS, *Mallard*, is prettily marked, it has rich and variegated plumage ; a conspicuous looking white collar round the neck. These ducks are frequently met with in the Terai, and at times at Chullen Beel, though a somewhat rare bird and only a winter visitant in India. At Shumpu or at that elevation in North Sikkim, near the snows, in spring or during the rains a few couples are likely enough to be met with. Mallards are strong on the wing, and appear to pass, rapidly, over Darjeeling, high up in the air, their heads pointing due north, and usually fly far to lakes in the interior of Thibet. Some of these birds are known to breed among rushes, by the edge of lakes in Cashmere, at a considerable elevation. Their eggs are often brought into the market, and sold as ordinary (wild) duck's eggs, so I am told, at so much a dozen. On eastern side of the Himalayas, it would be looked upon as uncommonly good piece of luck to find a Mallard's nest, and thus to learn more about the nidification of this duck, and some of the rarer water-birds, which retire to high elevations to breed. There are scores of birds in India, whose nests and eggs remain yet to be discovered, by one who can accurately identify them. Size of Mallard is about 24 inches ; bill greenish yellow ; legs orange ; irrides reddish brown ; colour of plumage is rich and variegated : chesnut brown on upper back : upper tail-coverts blackish-green ; head with part of the neck emerald green, cheeks nearly black ; collar as previously mentioned, white ; sides of the lower back light grey with wavy lines of dark brown ; scapulary feathers greyish with undulating marks ; wings brown with a speculum of deep prussian blue, tinged greenish purple with a whitish border ; tail-feathers greyish brown edged white ; breast chestnut. I have endeavoured to keep from overburdening you with a veritable picture of a Joseph's coat of many tints and colours, and yet doing some show of justice to this beautiful and picturesque looking bird. At the same time, a few of the leading colours will quite suffice to distinguish the Mallard, when observed amongst

other members of its family. It represents the race from which our domestic duck was taken. So that high living and low thinking, or high thinking and low living, which-ever you please, does not seem to have improved the looks of our homely drake.

(960) ANAS CARYOPHYLLACEA, *Pink-head Duck*, is also a beautiful coloured bird, perhaps one of the richest marked ducks we have. They visit the plains in fair numbers during the cold weather. When it is frequently met with, in marshy parts of the Terai, and Chullen Beel, also perhaps in bigger numbers at Karagola Ghat. They seem to have a preference for more secluded corners of jhils, which are overgrown with tall grasses and reeds, or swimming, in the night about centre of a broad expanse of water. Ducks and geese often betake themselves, for safety, to the middle of ponds or lakes at night, where they can snooze with impunity. A few of these ducks breed in the plains ; but their nests are difficult to find. In size they are similar to mallards, but, they have longer tarsi, which is more noticeable when near. When flying, they are usually, made out by the roseate colour below the wings. Drake has a pretty rosy pink head and neck, with a bright coloured crest, during the rainy season ; body and wings are dark, glossy chocolate brown ; speculum or wing patch is salmon coloured.

(961) CHAULELASMUS STREPERUS, *Gadwall*, is well distributed throughout the plains of India, and is much sought after by sportsmen, owing to well flavored meat it offers. On more than one occasion, I have seen smallish flocks of these birds on Big Runjeet, some on the sandy bends, others on the rivers. Usually they seem to prefer more open country to secluded nooks and corners. Once fairly on the wing their flight is strong and systematic. The Gadwall is about 20 inches in length ; bill is depressed slightly narrowing towards the tip, nail small, long and delicate lamellæ ; tail is longish ; wings longish ; bill brown with a reddish tinge ; irides brown ; legs orange. Colour of plumage, above, is dark brown on the back, with white circular lines ; upper tail-coverts, black with a bluish gloss ; tail brownish ash ; lesser wing-coverts grey ; middle coverts chesnut ; greater coverts black ; wing spot white ; breast dark brown with white roundish lines ; under parts of the body white speckled grey.

(962) DAFILA ACUTA, *Pintail Duck*. This is perhaps one of the best known birds in the plains. They are winter visitants. Game stalls in the markets are seldom without a few batches hanging up for sale. Consequently you can take your choice of making their acquaintance is either the former or latter state. Pintail Duck

is about 27 inches in length ; tail long, having centre feathers narrow and lengthened ; neck long ; bill elevated at the base and narrowish ; bill black, bluish on the sides ; irides dark brown ; legs dark grey, male, the back is marked with wavy lines of black and whitish ; scapulars black ; top of the head umber brown, face and throat dark brown, a purplish gloss behind the ears, two white lines round the upper neck ; upper tail-coverts ashy brown ; tail brown, with two long black central feathers ; primaries and coverts brown ; lesser coverts grey ; wing patch or speculum dark glossy purplish green, tertiaries long of velvety black with whitish edges ; breast and beneath white with black and white lines on the sides ; under tail-coverts black. These birds are readily distinguished on the wing by their long brown necks.

(963) MARECA PENELOPE, *The Widgeon*, or Whew is not nearly so plentiful as Pintail Duck. Smallish flocks are occasionally met with in the Terai in winter. They are rarely seen in the district, excepting when they fly over Darjeeling on their migratory journeys, when their shrill whistles are frequently heard. Widgeons have a strong flight. They travel far into the interior of Thibet, to breed. In size it is 18½ inches long ; bill short and raised, narrower at the tip ; lamellæ short, fairly well developed ; tail short ; hind toe small and bordered with a web ; bill bluish black at the tip ; irides reddish brown ; colour of plumage of the male is, above, back, black and white wavy lines on the back ; scapulars black ; tail dark grey ; wing-coverts white ; wings barred with green and black ; top of the head light yellow ; sides of the head and neck chestnut, cheeks speckled ; breast reddish, underparts white, flanks with wavy lines, under tail-coverts black.

(964) QUERQUEDULA CRECCA, *Common Teal*. This small duck differs, from the true ducks. Bill is uniform in width raised at the base ; lamellæ undeveloped ; nail small ; tip dilated a bit ; wings long and pointed ; tail cuneate. Common Teal or Ring Pet, as it is sometimes called, visits the plains in September and returns home about March. Flocks of these Teals are seen at dusk passing over Darjeeling, occasionally. They fly fairly low, and can be easily distinguished. Their cheerful calls and merry flutter of their wings can be heard ; but they soon pass over the crest of the hill, as their progress through the air is rapid. When once fairly on the wing, the flight of these teals is swift. They are distinguished without much difficulty, partly by their ferruginous heads, and a long patch of dark glossy green behind the eyes. In size this Teal is 14½ inches in long ; bill black ; irides hazel. Male is prettily marked on the back by wavy black and white lines ; head and sides of the neck

ferruginous brown ; tail brown with white edgings to the feathers ; wing-coverts brown, wing patch deep green ; breast whitish with black spots ; underparts white ; lower tail-coverts brown.

(965) QUERQUEDULA CIRCIA, *Blue-winged Teal*, also called Gargany Teal, is perhaps more common in the plains than *Crecca*. These birds are found plentiful in the Terai. It is 16 inches in length, and readily made out by its blue wings (quills).

(966) QUERQUEDULA GLOCITANS, *Clucking Teal*, is rare, and seldom seen, occasionally a stray species or two are met with at Shumpu during the rains. It is one of the prettiest coloured Teals in the district. In size 15½ inches ; above, plumage of male, is delicately marbled with grey on the back ; the wing-coverts are brown, median-coverts edged rufous, wing patch glossy green, with velvety black ; rich purple-brown on the head ; neck and breast purplish, with black spots ; underparts white mottled with grey ; under tail-coverts black.

SUB-FAMILY—FULIGULINÆ *(Diving ducks)*

These birds differ a good deal from the true ducks in many respects ; chiefly in the diving facilities they possess. They have larger heads, and necks shorter than the proceeding groups ; hind toe short and well webbed, which together with the backward position of the legs, aids them in swimming and diving operations. The short wedge shaped tail gives a nice finish to the navigating apparatus, under water.

(967) BRANTA RUFINA, *Red-crested Pochard*, These ducks have their home in Central Asia and Thibet. They visit the plains of India fairly late in the season, when cold palæarctic winters get too trying, more so owing to their aquatic habits. They are doubtlessly fine birds to see ; but difficult to approach. They usually keep much to the middle of big ponds and lakes, where they maintain a sharp lookout, and are, at all times extremely wary. In size this Pochard is 22 inches ; bill bright vermilion ; irides red ; legs orange ; head of the male is reddish ; with a long paler coloured crest, sides of the head and upper neck red, same as the head ; back, wings and tail yellowish brown ; some white showing on the wings ; the remaining portions of neck, breast and underparts of the body are black ; flanks white. This duck is held in high esteem on account of the rich flavor of its flesh.

FAMILY MERGIDÆ

This is a curious looking group of the duck tribe. Their chief qualification for originality is the bill, which is straight, narrow and cylindrical ; edges of the mandibles are lined with a strong row of teeth pointed backwards, giving its prominent snout an awkward appearance. Should you manage to get your hand inside, it would be difficult to get it out again without saving it from injury. These teeth are a modification of, lamellæ so frequently noticed in water-birds, ducks more especially ; tarsus is short and having a considerably backward position ; feet large ; hind toe lobed ; tail cuneate ; head crested. General appearance of Merganser is long and flattish. These birds fly swiftly, and are strong on the wing ; the gait is awkward ; but in the water they are expert divers.

(972) MERGUS CASTOR, *Merganser.* This curious looking duck is often seen in winter, sporting in Great Runjeet or Teesta rivers, having migrated from Thibet, and Northern Asia. Castor in size is 26 inches. Its bill is deep red ; irides red ; feet orange ; colour, above, is deep black on upper back ; remaining portions, with upper tail-coverts, ash, a few of the feathers tipped white ; tail grey ; breast and underparts of the bird are white with an orange tinge ; wing-coverts and some of the scapulary feathers, rich orange buff.

(973) MERGELLUS ALBELLUS, *The Smew.* This species differs from Merganser. It has a shorter and wider bill, teeth prominent on lower mandible, tip less hooked. In size *Albellus*, is much smaller, being about 16 inches long. Smew is rare in these parts. It is occasionally met with in the cold weather in the valleys. It has a bell-like call, which gets for it the name of Bell-duck in Northern Asia Colour of this bird, is a distribution of black and white ; the back, some of lesser wing-coverts and primaries are black ; secondaries and greater coverts black, tipped with white ; tail and its upper coverts bluish grey ; underparts are white, with black circular streaks. The Smew goes further a field, in its migrations, and is frequently met with on big rivers in the plains. It is found at times, in numbers on the Ganges, as far up the river as Delhi and the big towns on the banks. It feeds chiefly on fish, crustacea etc.

FAMILY PODICIPIDÆ *(Grebes)*

You must be familiar with the typically, lobed, looking feet of these birds, which the Coots (902—3) reminded us of. The feet

are more prominently lobed in Grebes. From a distance, these birds, look as though the soft leathery like substance from off surface of the marsh was adhering to their feet, and consequently the birds were hampered in their progress on the ground ; once in the water or flying high up in the air, Grebes appear quite at home and enjoy all the advantages Nature has endowed them with. Like most Water-birds their plumage is soft and dense, having a silky appearance and texture, these latter advantages the Grebe, surely would like to have dispensed with, owing to the troublesome anxiety human beings display, to rob it of its skin, and nether garments, to help to keep out the wintery blast off some fair necked beauty ; bill, of these birds, is straight, compressed and strong ; wings short, having a concave appearance ; tarsus moderate ; hallux and feet webbed (lobed) ; tail undeveloped, merely an apology.

Genus Podiceps. This typical and well marked group of Divers, have about two representatives in India. The first is found in Sub-Himalayan districts and other parts of the plains, whilst Little Grebe has a larger geographical distribution, being found in most places. These birds differ in many respects from the families, we have already gone over, not a little perhaps in the tail, which is nearly conspicuous by its absence. Then, they introduce us to some of the most expert divers we have in the district, or approaches to the Himalayas.

(975) Podiceps Philippensis, *Little Grebe.* I met this dab-chick, as far up as Sandakphu, it had evidently rested there after a visit to some of the marshy pokres lower down the hill, Kalipokri may have been its morning resort ; or the long marshy dried up pond at Tongloo ; or the more alluring expanse of water at Shumpu ; or some of the collected waters, from the melting snows off Kinchinjinga, where most probably it had met old friends from the plains of Bengal. In the cold weather they congregate in big numbers in most of the lakes, and jhils in the plains, and feed a good deal on fish and water insects. This Grebe is about 9 inches in length ; colour above, is glossy dark brown, tinged green ; cheeks and sides of the neck bright chesnut ; under-parts white ; head, hind neck and back are black with a tinge of green ; quills pale brown ; breast brown and white ; chin and part of the lower mandibles glossy black ; sides of the body, beneath, fulvous ; under-parts are silky white. These birds grow plump, and accumulate large quantities of fat, which make the skin and plumage, impervious to water and adds considerably to the warmth of the feathers.

We shall now pass over a number of birds—Diving Petrels,

Parasitic Gulls etc. : owing to their sea faring habits. They are not found in or near the district, and restrict their movements chiefly to the Bay of Bengal and Indian Ocean.

GROUP VAGATORES.

FAMILY LARIDÆ *(Gulls and Terns)*

Comprise the following Sub-Families :—

I. LESTRIDINÆ—Skuas or Parasitic Gulls.
II. LARINÆ—Gulls.
III. STERNINÆ—Terns.

II. SUB-FAMILY LARINÆ *(Gulls)*

Have several birds, which wander far inland. One species at least passes over Darjeeling to breed in Thibet.

These Gulls are found in two Classes :—

I. Larcæ—Birds of large size, with spots on the back and neck.
II. Xemeæ—Smaller size birds, having larger and more slender feet.

LARINÆ have longish, stout bills, tips curved ; wings long ; legs midway on the body.

We will examine more closely, the second group of these birds, which have black or brown heads in summer ; shorter bills ; wings long ; tail short ; tarsi long.

(980) XEMA BRUNNICEPHALA, *Brown-headed Gull*, which is generally seen on sea-coasts ; but they are frequently observed far inland, keeping much to big rivers. They are plentiful in Bengal, except in the breeding season, when they pass over into Central Asia and Thibet, returning with the young Gulls before termination of the rainy season. One of these Gulls was captured, on its migratory journey into Thibet by *Limnætus Cristatellus* (35), not far from Ghoom forest. Crested Hawk-Eagle was busy making a morning meal of it, when a discharge of No. 8 shot caused *Cristatellus* to look up, and relax its hold on the bird ; as it came tumbling to

earth, not before the eagle had made two downward plunges, in a most magnificent, and bold manner to regain its capture. The bird was about two-thirds eaten, it proved to be a Brown-headed Gull; thus showing the time honored practice of retiring to breed on the uplands of Thibet. Which went to show that not a few of these Gulls retire from sea-coasts in the plains, to more northern latitudes. They have been seen, in fairly big numbers at about 14,000 feet altitude, up to the end of July, where they probably congregate to embark on their southward journey. In size *brunnicephala* is about 17 inches; bill and feet red; irides white; back and wings grey; primaries black; head black or brown as the case might be; also black behind ear-coverts; rest of the plumage, a considerable display of white. These birds change colour a good deal according to the season. In winter the head feathers get nearly white.

SUB-FAMILY STERNINÆ *(Terns)*

Have long, fairly straight, compressed bills; wings long and pointed; tail, in a few species short, in others, long and forked; tarsi short and slender; toes short. They are said to be gulls, with straight and more slender bills, and perhaps a more delicate build, with longer wings, and shorter legs. They might be called the swallows of the *Natatores*, as they are untiring on the wing; rest during the heat of the day.

They comprise the following six groups:—

I. Marsh Terns—Shorter bills, gull-like bodies, tails short.
II. River Terns—Body slender, tail long and forked.
III. Oceanic Terns—Having a good supply of black plumage.
IV. Skimmers—Are a more complicated group, and will be dealt with, when taken up.

The above might be called a somewhat rough and ready mode of distinguishing each group.

I. MARSH TERNS.

(982) SYLOCHELIDON CASPIUS, *Largest Tern*, has a stout, red bill, and short tail. Neither this species, nor Gull-billed Tern, breeds in India; they migrate far north; occasionally they have been seen on the coast of Great Britain. In the plains they frequent rivers and more marshy portions, in the cold weather. In

size it is about 20 inches ; plumage alters considerably, in winter the head is white, with black streaks on the occiput (back of the head). In summer, head, nape and ear-coverts are black ? wings, mantle and tail, a fine bluish grey ; a few of the primaries are dark tipped and edged ; rest of the plumage is white, chiefly back of the neck, and under parts of the body ; irides brown ; feet black.

RIVER TERNS

Differ, from the previous group in colour, structure and habits. They have a much longer, and more forked tail ; the body slender. They remind us, a little of Hill Fork-tails, in a general sort of way, though they have, but little power over their hind appendage. These birds live chiefly near rivers, as a rule solitary in their habits, occasionally a few are seen together. Bill is deep yellow in colour, excepting European Tern, which has a red bill ; legs red, excepting the Little Turn, whose legs are orange. Bill in most of the species, is long and slender ; feet short and partially webbed.

(985) SEENA AURANTIA, *Large River Tern*, is perhaps the commonest of this class of Terns in the plains. None of these birds however visit the district. It is about 15 inches in length ; bill yellow ; irides brown ; legs red ; plumage, above, is pale grey ; tail white ; head, above, glossy black ; beneath, the body white, flanks have an ashy tinge. These birds remain in the plains throughout the year, and nest in company, with Skimmers, Small Swallow Plovers, and Great Stone Plovers, on the sandy churs of rivers. During the day eggs are left to hatch by aid of the hot sand and sunshine. These Terns set up a vigorous defence, when Crows and Kites venture to rob their eggs. Doubtless, the other species of Water-birds seek their company at the breeding season, more particularly, owing to their prowess, in driving away marauders.

SEA TERNS

Have a much more powerful flight, than the latter Terns. They frequent deltas of large rivers in the plains, also congregate on the sea shores. Their shape is elegent, and lengthened in form ; feet are black ; bills yellow.

GENUS THALASSEUS, have webbed feet ; very long wings, which extend to tip of the forked tail ; head crested.

(989) THALASSEUS CRISTATUS, *Large Sea Tern*, you are more likely to meet, than smaller Sea Tern, which locates itself more in

South India. *Cristatus*, has a long, slender, compressed bill. In size it is about 17 inches; back, wing and tail are silvery-grey, edges of secondary feathers white; quills dark tipped grey; head and crest glossy-black; rest of the plumage is silky-white, chiefly sides of the head, nape, and under-part of the body.

OCEANIC TERNS

Are met with in Bay of Bengal, Indian Ocean, and some in the Red Sea. Their bill is black, long and slender; wings long; feet well webbed; moderately sized tail, slightly forked.

(991) ONYCHOPRION MELANAUCHEN, *Black-naped Ocean Tern*, is met with near the east coast; in the Bay and adjacent country; but it is not found far inland. *Melanauchen* is 12 inches long; bill and feet black; upper plumage grey; head white; hind neck black, also line from side of the head to nape; primary quills are grey; lower plumage is white. These Terns migrate but little. They usually breed along with a few other species of Water-birds, on smaller islands in the Bay.

GENUS RHYNCHOPS *(Skimmers)* are, perhaps, the most interesting birds of this large family of Water-birds. They differ from the former groups in many respects. In bill not a little. Upper mandible is shorter than the lower, which construction is uncommon, among birds generally; bill is much compressed, long and straight, tip truncated in appearance and comes to a fine point, more or less flexible; wings long; feet short; toes with free webs (excised).

(995) RHYNCHOPS ALBICOLLIS, *Indian Skimmer*. This remarkable bird is frequently met with in the plains, flying with a swift easy, skimming flight over the water. At times found singly, on other occasions, congregated in companies of twenty or more. Over a broad expanse of water, they usually pass backwards and forwards, skimming close to the surface; now and then dipping their bills into the water as they fly, as though they were ploughing through the edge. This apparent diversion of cutting the surface of the water has puzzled many an observer, who attributes it to the facination it gives them of troubling the still, silent waters. At the same time they are at a loss to suggest what Skimmers eat. *Rhynchops* has a restricted diet. It feeds on the oily, or fatty substance, which is found floating on the top of most jhils, or more turbid water-courses in the plains. As it flies it scoops up between its mandibles, not unlike a dredge, the desired nurishment. What water, which gets shot up in the execution of this labour, gets released at gape of the mandibles. It has not been definitely ascertained, where this substance is generated, and in what manner it finds its way, to where

these birds procure their (only) supply of nurishment. This remarkable food (Ambrosia) appears to be easily digested, requiring but an hour or two to assimilate into the system, in spite of the strenuous work, put in, by these skimmers, all hours of the day from early dawn, through hot scorching days. These birds are always strong and active, usually their bodies have a good supply of fat stored up. I am sorry I can't recommend this food for human consumption. Bill is compressed to a fine edge, and flexible, which renders it easy to cut through the water, when at its work, dredging or sucking up, whilst swiftly skimming over the surface. In length Rhynchops is about 16½ inches; wing extent 44 inches; bill deep orange, yellow at the tip; irides brown; legs vermillion red; head, neck and scapulars are black; quills darker in colour, secondaries and tertiaries edged white; rest of the plumage is more or less white.

TRIBE PISCATORES.

FAMILY PELECANIDÆ

IV. SWIMMING FISHERS.

These well known birds are found in abundance in the plains on rivers and large expanses of water. They are big in size some species over 5 feet; with heavy bodies, and peculiar looking bills, which are long, straight, broad and flattened, tip hooked; lower mandible is thin, composed of two narrow parts, like jaws, flexible, bony and arching, supporting a large rubber-like pouch, which holds securely the captured fish of big size, at times. Several of these birds migrate over the Himalayas in spring; at which time their long lines of flight can easily be made out, as they pass over in big regular lines, high up in the sky, proceeding with great ease and buoyancy, with their necks drawn back. These are chiefly European, and Lesser White Pelicans.

(1004) PELECANUS PHILIPPENSIS, *Grey Pelican*, is what might be called, the common species of the plains, as it is found in abundance in most places. Fishermen frequently in India use them as decoys, when netting. These birds are said to attract certain kinds of fish to them, whilst swimming in the water, allured by an oily substance which exudes from off the skins of these pelicans. This species is 5 feet 2 inches in length. In colour it has a predominating amount of grey, chiefly on the back, wings and upper tail-coverts; tail white and grey; under plumage greyish-white; under tail-coverts the same, mottled with brown.

V. GRACULIDÆ *(Diving fishers).*

Family GRACULIDÆ

We found the last group expert at catching fish, which rise to the surface of the water, but they did not follow their quarry to any depth below. Cormorants differ in this, as well as in other respects from Pelicans. These birds are expert divers, though scarcely able to compete with *Plotus melanogaster* (1008), of whose accomplishments we will look into, when we arrive at the Indian Snake-bird, as it is called. Bill of the Cormorant is largish, cylindrical, and hooked at the tip like pelicans; tail different, which is stiff with short coverts. The prevailing colour of *Graculidæ* is black. They are strong on the wing; swim and dive with ease. They have a similar pouch in the bill, as was noticed in pelicans, which also acts as a receptical for holding the fish, that has been secured. In appearance the bill is slightly raised, a position common in fishing birds; wings short. The three species of *Graculus*, are found in this district, so that it is immaterial which of these birds we shall extend our enquiries to.

(1006) Graculus Sinensis, *Lesser Cormorant*, is more frequently met with at a low elevation at foot of the hills, than on Runjeet and Teesta, before they dip down into the humid plains of the Terai. In size this Cormorant is about 27 inches; bill brown, more reddish in colour below: the neck skin, etc. yellow; irides verdigris blue. Colour of the plumage changes according to the season, though not to so great an extent as some of the other Water-birds; back and wing-coverts are bronze; head and neck glossed black; lower plumage deep black; throat and part of the lower face white; brown above the eyes. These birds are also employed for catching fish, fishermen utilise their diving accomplishments, which they turn to some account by fixing an iron ring round the Cormorant's throat to prevent it from swallowing the captured fish. This must be a tantalizing occupation for a hungry Cormorant. To make them more alert in securing fish, these birds are kept on "low diet!" As soon as fish is caught the wily fisherman in his "dug out" close at hand, soon relieves the bird's inflated pouch.

(1005) Graculus carbo, *Large Cormorant*, is met with on our larger hill rivers generally among the gorges, and by the side of forests. Occasionally in the Little Runjeet valley. Its length is 33 inches; colour, above, bronze, with feathers edged black on the back and wing-coverts; sides of the head white; remaining portion of the plumage are black, excepting a white patch from the eyes

to the throat. In the breeding season more white is noticeable, especially on the flanks, head and upper parts of the neck. The crest is black and white, long and silky. These birds live chiefly on fish. They are usually seen, sitting motionless on the rocks probably after a meal or meditating on another excursion into the turbid waters. On such occasions their wings are partially opened, as though anxious to dry their wetted feathers in the genial sunshine.

(1008) PLOTUS MELANOGASTER, *Indian Snake-Bird.* This prettily marked, typical and master-diver, has a long slender neck, snake-like in appearance; feet and body like Cormorants; bill straight, coming to a sharp point at the tip, which is toothed; tail long and rounded. Melanogaster is said to be, Cormorant with head and neck of herons. This only gives an approximate idea of the bird in question, in other respects it is a more aberrant species. The scapulary feathers are elongated hackles, beautifully marked, silver and black. Snake-Bird, as it is called is about 32 inches in length; colour, brown on the back, spotted on the sides; wing-coverts black also richly spotted: quills and tail black, the latter having a barred appearance; breast and under parts glossy brownish black. These birds are not found in the district. They are plentiful in Bengal and frequent rivers and beels. As they paddle about on the surface of the water among reeds and rushes, they turn and twist their heads and long necks with the agility of a snake, recoiling then darting forward the pointed snake-like head in a most realistic manner, at a rising fish.

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FINIS.

V. GRACULIDÆ *(Diving fishers).*

Family GRACULIDÆ

We found the last group expert at catching fish, which rise to the surface of the water, but they did not follow their quarry to any depth below. Cormorants differ in this, as well as in other respects from Pelicans. These birds are expert divers, though scarcely able to compete with *Plotus melanogaster* (1008), of whose accomplishments we will look into, when we arrive at the Indian Snake-bird, as it is called. Bill of the Cormorant is largish, cylindrical, and hooked at the tip like pelicans; tail different, which is stiff with short coverts. The prevailing colour of *Graculidæ* is black. They are strong on the wing; swim and dive with ease. They have a similar pouch in the bill, as was noticed in pelicans, which also acts as a receptical for holding the fish, that has been secured. In appearance the bill is slightly raised, a position common in fishing birds; wings short. The three species of *Graculus*, are found in this district, so that it is immaterial which of these birds we shall extend our enquiries to.

(1006) Graculus Sinensis, *Lesser Cormorant*, is more frequently met with at a low elevation at foot of the hills, than on Runjeet and Teesta, before they dip down into the humid plains of the Terai. In size this Cormorant is about 27 inches; bill brown, more reddish in colour below: the neck skin, etc. yellow; irides verdigris blue. Colour of the plumage changes according to the season, though not to so great an extent as some of the other Water-birds; back and wing-coverts are bronze; head and neck glossed black; lower plumage deep black; throat and part of the lower face white; brown above the eyes. These birds are also employed for catching fish, fishermen utilise their diving accomplishments, which they turn to some account by fixing an iron ring round the Cormorant's throat to prevent it from swallowing the captured fish. This must be a tantalizing occupation for a hungry Cormorant. To make them more alert in securing fish, these birds are kept on "low diet!" As soon as fish is caught the wily fisherman in his "dug out" close at hand, soon relieves the bird's inflated pouch.

(1005) Graculus carbo, *Large Cormorant*, is met with on our larger hill rivers generally among the gorges, and by the side of forests. Occasionally in the Little Runjeet valley. Its length is 33 inches; colour, above, bronze, with feathers edged black on the back and wing-coverts; sides of the head white; remaining portion of the plumage are black, excepting a white patch from the eyes

to the throat. In the breeding season more white is noticeable, especially on the flanks, head and upper parts of the neck. The crest is black and white, long and silky. These birds live chiefly on fish. They are usually seen, sitting motionless on the rocks probably after a meal or meditating on another excursion into the turbid waters. On such occasions their wings are partially opened, as though anxious to dry their wetted feathers in the genial sunshine.

(1008) PLOTUS MELANOGASTER, *Indian Snake-Bird.* This prettily marked, typical and master-diver, has a long slender neck, snake-like in appearance ; feet and body like Cormorants ; bill straight, coming to a sharp point at the tip, which is toothed ; tail long and rounded. Melanogaster is said to be, Cormorant with head and neck of herons. This only gives an approximate idea of the bird in question, in other respects it is a more aberrant species. The scapulary feathers are elongated hackles, beautifully marked, silver and black. Snake-Bird, as it is called is about 32 inches in length ; colour, brown on the back, spotted on the sides ; wing-coverts black also richly spotted : quills and tail black, the latter having a barred appearance ; breast and under parts glossy brownish black. These birds are not found in the district. They are plentiful in Bengal and frequent rivers and beels. As they paddle about on the surface of the water among reeds and rushes, they turn and twist their heads and long necks with the agility of a snake, recoiling then darting forward the pointed snake-like head in a most realistic manner, at a rising fish.

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FINIS.

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GEMITORES.

FAMILY Treronidæ.

I. TRERONINÆ—Green Pigeons.

II. CARPOPHAGINÆ—Imperial Pigeons.

III. PTILOPODINÆ—Green Doves.

SUB-FAMILY Treroninæ.

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Nepal (771) T. Nipalensis—Thick-billed Green-Pigeon.

GENUS Crocopus.

P. (772) C. Phœnicopterus—Bengal ,, ,,
P. (773) C. Chlorigaster—Southern ,, ,,

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P. (775) O. Malabarica—Grey-fronted ,, ,,
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SUB-FAMILY Carpophaginæ.

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———

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D.	(785) P. pulchricollis—Darjeeling	Wood-Pigeon.
P.	(786) P. Elphinstonei—Neilgherry	,, ,,

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D.	(791) M. tusalia—Bar-tailed	Tree-dove.

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D.	(793) T. meena—Rufous	,, ,,

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D.	(794) T. Cambayensis—Little	Brown- ,,

III. *Tigrini.*

D.	(795) T. Suratensis	Spotted-Dove.

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P.	(796) T. risoria—Common	Ring- ,,
P.	(797) T. humilis—Red	Turtle- ,,

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Chalcophapeæ (12 tail feathers).

GENUS Chalcophaps.

P.	(798) C. indicus—Bronze-winged	,,

RASORES.

A. Hind toe on same plane.

I. CRACIDÆ.

II. MEGAPODIDÆ.

B. Hind toe, raised or wanting.

III. PTEROCLIDÆ—Sand-grouse.

IV. PHASIANIDÆ.

V. TETRAONIDÆ—Grouse and Partridges.

VI. TINAMIDÆ.

FAMILY Pteroclidæ *(Sand or Rock-Grouse).*

GENUS Pterocles.

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P.	(800) P. fasciatus—Painted	,, ,,
P.	(801) P. alchata—Large Pin-tailed	,, ,,
P.	(802) P. exustus—Common	,, ,,

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SUB-FAMILY Pavoninæ.

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D.	(803) P. cristatus—Common	Peacock.

SUB-FAMILY Phasianinæ.

GENUS Lophophorus.

D.	(804) L. Impeyanus—Monaul	Pheasant.

GENUS Ceriornis.

D.	(805) C. satyra—Sikkim	Horned ,,
W. H.	(806) C. melanocephala—Simla	,, ,,

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D.	(807) I. cruentus—Green	Blood-Pheasant.

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GENUS Phasianus.

W. H.	(809) P. Wallichii	Cheer ,,

GENUS Gallophasis.

W. H.	(810) G. albocristatus—White-crested	Kalij ,,
D.	(811) G. melanotus—Sikkim	,, ,,

SUB-FAMILY Gallinæ.

GENUS Gallus.

D.	(812) G. ferrugineus—Red	Jungle-fowl.
	(813) G. Sonneratii—Grey	,, ,,

GENUS Galloperdix.

C. I.	(814) G. spadiceus—Red	Spur- ,,
C. I.	(815) G. lunulosus—Painted	,, ,,

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SUB-FAMILY Perdicinæ.

I. *Snow-Cocks, Snow-Partridges.*

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D.	(816) T. Himalayensis—Himalayan	Snow-Cock.

GENUS Lerwa.

D.	(817) L. nivicola	Snow Partridge.

Partridges.

GENUS Francolinus.

P.	(818)	F. vulgaris	Black Partridge.
P.	(819)	F. pictus	Painted ,,

II. *Rock or Sand Partridges.*

GENUS Caccabis.

P.	(820)	C. chukor	Chukor ,,

GENUS Ammoperdix.

P.	(821)	A. Bonhami	Seesee ,,

III. *Grey or Bush Partridge.*

GENUS Ortygornis.

P.	(822)	O. Ponticeriana	Grey ,,
P.	(823)	O. gularis	Kyah ,,

IV. *Wood-Partridges.*

GENUS Arboricola.

D.	(824)	A. torqueola—Black-throated	Hill-Partridge.
D.	(825)	A. rufogularis—Rufous ,,	,, ,,

V. *Bush-Quails.*

GENUS Perdicula.

P.	(826)	P. Cambayensis—Jungle	Bush-Quail.
P.	(827)	P. Asiatica—Rock	,, ,,
P.	(828)	P. erythrorhyncha—Painted	,, ,,

SUB-FAMILY Coturnicinæ.

GENUS Coturnix.

D.	(829)	C. communis—Large Grey	,,
D.	(830)	C. Coromandelica—Black-breasted	,,

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SUB-FAMILY Turnicinæ.

GENUS Turnix.

P.	(832) T. taigoor—Black-breasted	Bustard-Quail.
D.	(833) T. ocellatus—Hill	,, ,,
P.	(834) T. Dussumierii—Larger	Button- ,,
P.	(835) T. Sykesii	,, ,,

ZOOLOGICAL GARDEN
CALCUTTA

GRALLATORES (Waders—Shore-birds).

A.—Young able to run.

I. TRIBE STRUTHIONES—Ostriches, Emeus etc.
II. „ PRESSIROSTRES—Bustard, Plover and Cranes.
III. „ LONGIROSTRES—Snipes, Sandpipers.
IV. „ LATITORES—Rails and Water-hens.

B.—Young, helpless at birth.

V. „ CULTIROSTRES—Storks, Herons and Ibises.

PRESSIROSTRES.

I.	OTIDIDÆ	...	Bustards and Floricans.
II.	CURSORINÆ	...	Courser-plovers.
III.	GLAREOLIDÆ	...	Swallow „
IV.	CHARADRIDÆ	...	Plovers.
V.	HÆMATOPODIDÆ	...	Shore- „
VI.	THINOCORIDÆ	...	Game- „
VII.	GRUIDÆ	...	Cranes.

FAMILY Otididæ.

GENUS Eupodotis.

P. (836) E. Edwardsii—Indian Bustard.

GENUS Houbara.

C. I. (837) H. Macqueenii—Houbara „

GENUS Sypheotides.

P. (838) S. bengalensis—Bengal Florikin.
P. (839) S. auritus—Lesser „

FAMILY Cursoridæ.

GENUS Cursorius.

(840) C. coromandelicus—Indian Courier Plover.

GENUS Rhinoptilus.

P. (841) R. bitorquatus—Double-banded ,,

FAMILY Glareolidæ.

GENUS Glareola.

Foot of the Hill (842) G. orientalis—Large Swallow-plover.
,, (843) G. lactea—Small ,, ,,

FAMILY Charadridæ.

SUB-FAMILY Charadrinæ.

GENUS Squatarola.

Sukna (844) S. Helvetica Grey Plover.

GENUS Charadrius.

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GENUS Ægialitis.

P. (846) Æ. Geoffroyi—Large Sand- ,,
P. (847) Æ. pyrrhothorax—Lesser ,, ,,
P. (848) Æ. cantianus—Kentish Ring- ,,
P. (849) Æ. Philippensis—Indian Ringed- ,,
P. (850) Æ. minutus—Lesser ,, ,,

SUB-FAMILY Vanellinæ.

I. *Vanellæ* (4 toes, hallux small, no spur, no lappets).

GENUS Vanellus.

P. (851) V. cristatus—Crested Lapwing.

GENUS Chettusia.

P.	(852) C. gregaria—Black-sided	Lapwing.
P.	(853) C. leucura—White-tailed	,,
P.	(854) C. inornata—Grey-headed	,,

II. *Sarciophoreæ* (Fleshy wattles, 4 toes).

GENUS Lobivanellus.

D.	(855) L. goensis—Red-wattled	

GENUS Sarciophorus.

P.	(856) S. bilobus—Yellow-wattled	,,

III. *Hoplopterea.*

GENUS Hoplopterus.

	(857) H. Ventralis—Spur-winged	,,

SUB-FAMILY Esacinæ.

GENUS Esacus.

P.	(858) E. recurvirostris—Large	Stone-plover.

GENUS Œdicnemus.

P.	(859) Œ. crepitans	,, ,,

FAMILY Hæmatopodidæ.

SUB-FAMILY Strepsilinæ.

GENUS Strepsilas.

P.	(860) S. interpres	Turnstone.

SUB-FAMILY Dromadinæ.

GENUS Dromas.

P.	(861) D. ardeola	Crab-plover.

SUB-FAMILY Hæmatopodinæ.

GENUS Hæmatopus.

P.	(862) H. ostralegus		Oyster-catcher.

FAMILY Gruidæ.

GENUS Grus.

P.	(863) G. antigone—Sarus		Crane.
P.	(864) G. leucogeranus—Large	White	,,
P.	(865) G. cinerea—Common		,,

GENUS Anthropoides.

P.	(866) A. virgo—Demoiselle		,,

TRIBE LONGIROSTRES.

FAMILY Scolopacidæ.

SUB-FAMILY Scolopacinæ.

GENUS Scolopax.

D.	(867) S. rusticola—		Wood-cock.

GENUS Gallinago.

D.	(868) G. nemoricola—Wood		Snipe.
D.	(869) G. solitaria—Himalayan—Solitary		,,
P.	(870) G. stenura—Pin-tailed		,,
P.	(871) G. scolopacinus—Common		,,
P.	(872) G. gallinula—Jack		,,

GENUS Rhynchæa.

P.	(873) R. bengalensis	Painted	,,

SUB-FAMILY Limosinæ.

GENUS Macroramphus.

P.	(874) M. semipalmatus—Snipe-billed		Godwit.

GENUS Limosa.

P.	(875) L. ægocephala	Small Godwit.

GENUS Terekia.

D.	(876) T. cinerea—Avoset	Sandpiper.

SUB-FAMILY Numeninæ.

GENUS Numenius.

P.	(877) N. arquata	Curlew.
P.	(878) N. phæopus	Whimbrel.

GENUS Ibidorhynchus.

D.	(879) I. Struthersii	Red-billed Curlew.

SUB-FAMILY Tringinæ.

GENUS Philomachus.

P.	(880) P. pugnax	Ruff.

GENUS Tringa.

P.	(881) T. canutus	Knot.
P.	(882) T. subarquata	Curlew-stint.
P.	(883) T. cinclus	Dunlin.
P.	(884) T. minuta—Little	Stint.
P.	(885) T. Temminckii—White-tailed	,,
P.	(886) T. platyrhyncha—Broad-billed	,,

GENUS Eurinorhynchus.

P.	(887) E. griseus—Spoon-billed	,,

GENUS Calidris.

	(888) C. arenaria	Sanderling.

SUB-FAMILY Phalaropinæ.

GENUS Phalaropus.

P.	(889) P. fulicarius—Coot-footed	Stint.
P.	(890) P. hyperboreus—Lesser Coot-footed	,,

SUB-FAMILY Totaninæ.

GENUS Actitis.

D.	(891) A. glareola—Spotted	Sandpiper.
P.	(892) A. ochropus—Green	,,
P.	(893) A. hypoleucos—Common	,,

GENUS Totanus.

P.	(894) T. glottis	Greenshanks.
P.	(895) T. stagnatilis—Little	,, ,,
P.	(896) T. fuscus—Spotted	Red- ,,
P.	(897) T. calidris	,, ,,

FAMILY Himantopidæ.

GENUS Himantopus.

(898) H. candidus — Stilt or Long-legs.

GENUS Recurvirostra.

(899) R. Avocetta — Avoset.

TRIBE LATITORES.

FAMILY Parridæ.

SUB-FAMILY Parrinæ.

GENUS Metopidius.

P.	(900) M. indicus—Bronze-winged	Jacana.

GENUS Hydrophasianus.

P.	(901) H. chirurgus—Pheasant-tailed	,,

FAMILY Rallidæ

SUB-FAMILY Gallinulinæ.

GENUS Porphyrio.

P. (902) P. poliocephalus— Purple Coot.

GENUS Fulica.

P. (903) F. atra— Bald "

GENUS Gallicrex.

P. (904) G. cristatus Water-cock.

GENUS Gallinula.

P. (905) G. chloropus Water-hen.
P. (906) G. Burnesii—Small " "
P. (907) G. phoenicura—White-breasted " "

SUB-FAMILY Rallinæ.

GENUS Porzana.

P. (908) P. akool—Brown Rail.
P. (909) P. maruetta—Spotted "
P. (910) P. pygmæa—Pigmy "
P. (911) P. fusca—Ruddy "
P. (912) P. ceylonica—Banded "

GENUS Rallus.

P. (913) R. striatus—Blue-breasted "
(914) R. indicus—Indian Water "

TRIBE CULTIROSTRES.

FAMILY Ciconidæ.

GENUS Leptoptilos.

(915) L. argala—Gigantic Stork.
P. (916) L. javanica—Hair-crested "

GENUS Mycteria.

P. (917) M. Australis—Black-necked "

GENUS Ciconia. (Cold weather)

P.	(918) C. nigra—Black	Stork.	*D.*
P.	(919) C. alba—White	,,	
P.	(920) C. leucocephala—White-necked	,,	

FAMILY Ardeidæ.

GENUS Ardea.

D.	(921) A. goliath—Giant	Heron.
P.	(922) A. Sumatrana—Dusky-grey	,,
P.	(923) A. cinerea—Blue	,,
D.	(924) A. purpurea—Purple	,,

GENUS Herodias.

P.	(925) H. alba—Large	Egret.
P.	(926) H. egrettoides—Small	,,
D.	(927) H. garzetta—Little	,,

GENUS Demi-egretta.

P.	(928) D-e asha—Ashy	,,

GENUS Buphus.

P.	(929) B. coromandus—Cattle	,,

GENUS Ardeola.

P.	(930) A. leucoptera—Pond	Heron.

GENUS Butorides.

P.	(931) B. javanica—Little-green	,,

GENUS Ardetta.

D.	(932) A. flavicollis—Black	Bittern.	(Runjeet)
D.	(933) A. cinnamonea—Chesnut	,,	
P.	(934) A. sinensis—Yellow	,,	
P.	(935) A. minuta—Little	,,	

GENUS Botaurus.

P.	(936) B. stellaris	,,	,,

GENUS Nycticorax.

P. (937) N. griseus— Night-Heron.

FAMILY Tantalidæ.

SUB-FAMILY Tantalinæ.

GENUS Tantalus.

P. (938) T. leucocephalus—Pelican Ibis.

SUB-FAMILY Plataleinæ.

GENUS Platalea.

P. (939) P. leucorodia— Spoon-bill

SUB-FAMILY Anastomatinæ.

GENUS Anastomus.

P. (940) A. oscitans—Shell Ibis.

SUB-FAMILY Ibisinæ.

GENUS Threskiornis.

P. (941) T. melanocephalus—White ,,

GENUS Geronticus.

P. (942) G. papillosus—Warty-headed or Black ,,

GENUS Falcinellus.

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II. MERGITORES—Loons and Grebes.
III. VAGATORES—Gulls and Petrels.

B. *(Heterophagous)* young requiring to be fed a short time.

IV. PISCATORES—Cormorants and Pelicans.
V. URINATORES—Auks and Penguins.

TRIBE LAMELLIROSTRES.

I. PHŒNICOPTERIDÆ—Flamingos, necks and legs long.
II. CYGNIDÆ—Swans, necks long, legs short.
III. ANSERIDÆ—Geese, legs more forward.
IV. ANATIDÆ—Ducks, legs set far back.
V. MERGIDÆ—Mergansers, toothed bill.

FAMILY Phœnicopteridæ.

GENUS Phœnicopterus.

P. (944) P. roseus— Flamingo.

FAMILY Cygnidæ.

FAMILY Anseridæ.

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II. CEREOPSINÆ ... New Holland ,,
III. PLECTROPTERINÆ ... Spurred. ,,
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V. TADORNINÆ ... Sheldrakes.

SUB-FAMILY Anserinæ.

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P. (945) A. cinereus—Grey Goose „
P. (946) A. brachyrhynchus—Pink-footed „ „
P. (947) A. erythropus—Dwarf „ „
P. (948) A. albifrons—White-fronted „ (Thibet).
P. (949) A. Indicus—Barred-headed „ „

SUB-FAMILY Plectropterinæ.

GENUS Sarkidiornis.

P. (950) S. melanonotus—Black-backed Goose.

SUB-FAMILY Nettapodinæ.

GENUS Nettapus.

P. (951) N. Coromandelianus—White-bodied Goose-teal.

SUB-FAMILY Tadorninæ.

GENUS Dendrocygna.

P. (952) D. awsuree—Whistling— Teal.
P. (953) D. major—Large „ „

GENUS Casarca. (*D.* Passing over).

P. (954) C. rutila—Ruddy Sheldrake „
P. (955) C. leucoptera—White-winged „ „

GENUS Tadorna.

P. (956) T. vulpanser „

FAMILY Anatidæ.

I. ANATINÆ—True Ducks, Hallux small not webbed.

II. FULIGULINÆ—Pochards or Sea Ducks, Hallus larger or bordered with web.

SUB-FAMILY Anatinæ.

GENUS Spatula.

P. (957) S. clypeata — Shoveller (Thibet).

GENUS Anas. (*D.* Passing over).

P. (958) A. boschas — Mallard ,,
P. (959) A. poecilorhyncha—Spotted-billed Duck ,,
P. (960) A. caryophyllacea—Pink-headed ,, ,,

GENUS Chaulelasmus.

D. (961) C. streperus — Gadwall.

GENUS Dafila.

P. (962) D. acuta—Pin-tail — Duck.

GENUS Mareca.

P. (963) M. Penelope — Widgeon.

GENUS Querquedula.

P. (964) Q. crecca—Common — Teal.
P. (965) Q. circia—Blue-winged ,,
P. (966) Q. glocitans—Clucking ,,

SUB-FAMILY Fuligulinæ *(Diving Ducks).*

GENUS Branta.

P. (967) B. rufina—Red-crested — Pochard.

GENUS Aythya.

P. (968) A. ferina—Red-headed ,, (Thibet).
P. (969) A. nyroca—White-eyed Duck. ,,

GENUS Fuligula.

P.	(970) F. marila—Scaup	Pochard.
P.	(971) F. cristata—Tufted	Duck.

FAMILY Mergidæ.

GENUS Mergus.

D.	(972) M. castor	Merganser.

GENUS Mergellus.

D.	(973) M. albellus	Smew.

TRIBE MERGITORES.

FAMILY Colymbidæ *(Loons or Divers)*.

FAMILY Podicipidæ *(Grebes)*.

GENUS Podiceps.

P.	(974) P. cristatus—Crested	Grebe.
D.	(975) P. Philippensis—Little	,,

TRIBE VAGATORES.

FAMILY Procellaridæ Petrels.

I. DIOMEDINÆ—Albatrosses.
II. PROCELLARINÆ—Petrels.
III. HALODROMINÆ—Diving Petrels.

SUB-FAMILY Diomedinæ. *Nil.*

SUB-FAMILY Procellarinæ.

GENUS Thalassidroma.

(976) T.

SUB-FAMILY Halodrominæ.

GENUS Peljcanoides.

P. (977) P. urinatrix—Little Diving Petrel.

FAMILY Laridæ *(Gulls and Terns).*

I. LESTRIDINÆ—Skuas or Parasitic Gulls.
II. LARINÆ—Gulls.
III. STERNINÆ—Terns.

SUB-FAMILY Lestridinæ. *Nil.*

SUB-FAMILY Larinæ.

A. *Lareæ.*
B. *Xemeæ.*

A. Lareæ.

GENUS Larus.

P. (978) L. fuscus—Lesser Black-backed Gull.

B. Xemeæ.

GENUS Kroikocephalus.

P. (979) K. ichthyætus—Great Black-headed ,,

GENUS Xema. *(D.* Passing over.)

(980) X. brunnicephala—Brown-headed ,,
(981) X. ridibunda—Laughing ,,

Sub-Family Sterninæ.

I.	Marsh Terns	...	Gull like bill and body.
II.	River ,,	...	Body slender, long forked tail.
III.	Sea ,,	...	Yellow bill, forked tail, very long wings.
IV.	Oceanic ,,	...	or Noddies. Plumage black.
V.	Skimmers	...	Rhynchops.

Genus Sylochelidon.

(982) S. caspius—Largest Tern.

Genus Gelochelidon.

(983) G. anglicus—Gull-billed ,,

Genus Hydrochelidon.

(984) H. Indica—Small Marsh ,,

Genus Seena.

(985) S. aurantia—Large River ,,

Genus Sterna.

(986) S. Nirundo—European ,,
(987) S. Javanica—Black-bellied ,,

Genus Sternula.

(988) S. minuta—Little ,,

Genus Thalasseus.

(989) T. cristatus—Large Sea ,,
(990) T. bengalensis—Small Sea ,,

Genus Onychoprion.

(991) O. melanauchen—Black-naped ,,
(992) O. anasthætus—Brown-winged ,,

Genus Anous.

(993) A. stolidus Noddy.
(994) A. tenuirostris—White-headed ,,

GENUS Rhynchops.

(995) R. albicollis—Indian Skimmer.

TRIBE PISCATORES.

FAMILY Phætonidæ.

GENUS Phæton.

(996) P. rubricauda—Red-tailed Topic-Bird.
(997) P. candidus—White " "

FAMILY Sulidæ.

GENUS Sula.

(998) S. fiber Booby.
(999) S. piscator—White "

FAMILY Attagenidæ.

GENUS Attagen.

(1000) A. aquilus Frigate Bird.

FAMILY Pelecanidæ.

GENUS Pelecanus.

P. (1001) P. onocrotalus—European Pelican.
P. (1002) P. mitratus—Crested "
(1003) P. Javanicus—Lesser White "
(1004) P. Philippensis—Grey "

FAMILY Graculidæ.

GENUS Graculus.

D.	(1005) G. carbo—Large	Cormorant.
D.	(1006) G. sinensis—Lesser	,,
D.	(1007) G. Javanicus—Little	,,

SUB-FAMILY Plotinæ.

GENUS Plotus.

P.	(1008) P. melanogaster—Indian	Snake-Bird.

TRIBE URINATORES.

I. ALCIDÆ—Auks and Guillemots.
II. SPHENISCIDÆ—Penguins.

FAMILY Alcidæ.

(1) *Alcinæ*, Auks and Puffins, (2) *Uriinæ*, Guillemots.

FAMILY Spheniscidæ

South Sea Penguins.

ZOOLOGICAL GARDEN
CALCUTTA.