



Date of
Election.

- 45 1882. PHILIP CROWLEY, F.Z.S.; Waddon
1877. JOHN J. DALGLEISH; 8 Atholl Crescent, Edinburgh.
1874. CHARLES G. DANFORD, F.Z.S.; Hatszeg, Siebenbürgen, Hun-
gary, and Conservative Club, St. James's Street, London,
S.W.
1883. JAMES DAVIDSON; 32 Drumsheugh Gardens, Edinburgh.
1884. WILLIAM RUXTON DAVIDSON; care of Messrs. Dawson & Son,
121 Cannon Street, E.C.
- 50 1892. JOHN DAVID DIGUES DE LA TOUCHE; Chinese Imperial Mari-
time Customs; 8 Storey's Gate, S.W.
1889. WILLIAM HENRY DOBIE, M.R.C.S.; 22 Upper Northgate Street,
Chester.
1883. SCROPE B. DOIG; Public Works Department, Bombay.
1880. ARTHUR DOWSETT, F.Z.S.; Castle Hill House, Reading.
1865. HENRY EELES DRESSER, F.L.S., F.Z.S.; Topclyffe Grange,
Farnborough, Beckenham, Kent.
- 55 *HENRY MAURICE DRUMMOND-HAY, C.M.Z.S., Lieut.-Col., Royal
Perth Rifles; Seggieden, Perth.
1890. JAMES A. G. DRUMMOND-HAY; Coldstream Guards, Guards'
Club, S.W.
1878. W. ARTHUR DURNFORD; Elsecar, Barnsley.
1876. GEORGE LE C. EGERTON, Commander R.N.; The Lodge, Stoke
Road, Gosport.
1870. DANIEL GIRAUD ELLIOT, F.R.S.E., F.Z.S.; Fuller Buildings,
Jersey City, New Jersey, U.S.A.
- 60 1884. ALGERNON ELLIOTT, Deputy Commissioner, Yeotmahl, Berar,
H.A.D., India.
1866. HENRY JOHN ELWES, F.Z.S.; Colesborne Park, Cheltenham.
1879. ARTHUR HUMBLE EVANS, M.A., F.Z.S.; 9 Harvey Road, Cam-
bridge.
1888. WILLIAM EVANS, F.R.S.E.; 18a Morningside Park, Edin-
burgh.
1891. ALFRED HAST EVERETT, C.M.Z.S.; care of Central Labuan Co.,
Labuan, Borneo.
- 65 1892. WILLIAM GEORGE FAIRBRIDGE; Capetown.
1873. H. W. FEILDEN, Lieut.-Col., C.M.Z.S.; West House, Wells,
Norfolk.
1886. HAROLD STUART FERGUSON, Lieut. Nair Brigade; Trevandrum,
Travancore.
1891. LEOPOLD FIELD, F.Z.S.; St. Stephen's Club, S.W.

Date of
Election.

1892. FRANK FINN, B.A., F.Z.S.; Mote House, Mote Road, Maidstone.
- 70 1890. LIONEL FISHER; Kandy, Ceylon.
1884. HENRY OGG FORBES, F.Z.S.; care of O. E. Janson, 44 Great Russell Street, W.C.
1880. WILLIAM FOSTER; The Hill, Witley, Surrey.
1887. W. W. FOWLER, M.A.; Lincoln College, Oxford.
1865. REV. HENRY ELLIOTT FOX, M.A.; 12 South Bailey, Durham.
- 75 1881. PERCY EVANS FREKE; 9 Sydenham Road, Dundrum, co. Dublin.
1881. HANS GADOW, Ph.D., F.Z.S.; University Zoological Museum, Cambridge.
1886. CHARLES WILLIAM FRANCIS, EARL OF GAINSBOROUGH; Exton Park, Oakham.
1885. SIR RALPH PAYNE GALLWEY, Bart.; Thirkleby Park, Thirsk.
1892. JOHN GERRARD; Government Inspector of Mines, Wakefield.
- 80 1879. ERNEST GIBSON; care of Thos. Gibson, Esq., 1 Eglinton Court, Edinburgh.
- *FREDERICK DUCANE GODMAN, F.R.S., F.Z.S., &c.; 10 Chandos Street, Cavendish Square, London, W.
- *PERCY SANDEN GODMAN, B.A., C.M.Z.S.; Muntham, Horsham.
1874. H. H. GODWIN-AUSTEN, Lieut.-Col., F.R.S., F.Z.S., &c.; Shalford House, Guildford.
1884. J. G. GOODCHILD, F.Z.S.; Museum of Science and Art, Edinburgh.
- 85 1886. WILLIAM GRAHAM, F.Z.S.; Manor House, Crayford, Kent.
1890. WILLIAM R. OGILVIE GRANT; 26 Hereford Square, S.W.
1885. F. H. H. GUILLEMARD, M.A., M.D., F.Z.S.; Eltham, Kent.
1876. ALBERT C. L. G. GÜNTHER, M.A., M.D., F.R.S., F.Z.S. &c.; Keeper of the Zoological Department, British Museum (Natural History), London, S.W.
1870. JOHN HENRY GURNEY, F.Z.S.; Keswick Hall, Norwich, and Athenæum Club.
- 90 1890. JOSHUA REYNOLDS GASCOIGN GWATKIN; Manor House, Potherne, Devizes.
1891. GEORGE HENRY CATON HAIGH; Grainsby Hall, Great Grimsby, Lincolnshire.
1887. JOHN PLEYDELL WILTON HAINES; The Lodge, Gloucester.

Date of
Election.

1886. EDWARD HAMILTON, M.D., F.L.S., F.Z.S.; 16 Cromwell Place,
S.W.
1883. LEWIS VERNON HARCOURT; Malwood, Lyndhurst, Hants.
- 95 1876. Major H. C. HARFORD, 2nd Wilts Regt.; Glen Froome, Nelson
Crescent, Southsea.
1877. EDWARD HARGITT, F.Z.S.; 1 Gladstone Villas, South View,
Basingstoke, Hants.
1868. JAMES EDMUND HARTING, F.L.S., F.Z.S.; Linnean Society,
Burlington House, Piccadilly, W.
1873. JOHN A. HARVIE-BROWN, F.Z.S.; Dunipace House, Larbert,
N.B.
1892. EDWARD SUTER HASELL; Victoria, British Columbia.
- 100 1868. Rev. HERBERT S. HAWKINS, M.A.; Beyton Rectory, Suffolk.
1887. CHARLES T. HEBBERT, F.Z.S.; 12 Hereford Gardens, London,
W.
1884. C. J. HOLDSWORTH; Oxenholme, Westmoreland.
1877. E. W. H. HOLDSWORTH, F.Z.S.; 84 Clifton Hill, St. John's
Wood, London, N.W.
1891. ARTHUR H. HOLLAND; Holmhurst, Copse Hill, Wimbledon,
S.W., and Sta. Elena, Soler, F. C. al Pacifico, Buneos Ayres.
- 105 1888. HERBERT KNIGHT HORSFIELD; Oakfield Terrace, Headingley,
Leeds.
1881. ROBERT JAMES HOWARD; Hawkshurst, Blackburn, Lancashire.
- *WILFRID HUDLESTON HUDLESTON, M.A., F.R.S., F.Z.S.;
8 Stanhope Gardens, S.W.
1869. ALLAN OCTAVIAN HUME, C.B.; The Chalet, Kingswood Road,
Upper Norwood, S.E.
1890. HENRY CHARLES VICARS HUNTER; 7 Bury Street, St. James's,
S.W.
- 110 1870. HEDWORTH HYLTON, Lord HYLTON, F.Z.S.; Merstham House,
Red Hill, Surrey.
1870. LEONARD HOWARD L. IRBY, Lieut.-Col., F.Z.S.; 14 Corn-
wall Terrace, Regent's Park, N.W.
1888. FREDERICK J. JACKSON, F.Z.S.; 13 Westbourne Square, London,
W.
1892. HENRY ASHWORTH JAMES; Kingswood, Watford, Herts.
1889. FREDERICK PONSONBY JOHNSON; Castlesteads, Brampton,
Cumberland.
- 115 1891. HENRY HAMILTON JOHNSTON, C.B., F.Z.S.; Queen Anne's
Mansions, Queen Anne's Gate, S.W.

Date of
Election.

1880. HENRY ROBERT KELHAM, Major, 2nd Bn. Highland Light Infantry; Fyzabad, India.
1882. PHILIP M. KERMODE; Seabridge Cottage, Ramsay, Isle of Mad.
1891. J. GRAHAM KERR; Christ's College, Cambridge.
1892. FRANCIS ARNOLD KNIGHT; "Brynmelyn," Weston-super-Mare.
- 120 1882. REV. EDW. PONSONBY KNUBLEY, M.A.; Staveley Rectory, Leeds.
1892. THOMAS GEDDES LAIDLAW; Bank of Scotland, Edinburgh, and 8 Morningside Road, Edinburgh.
1884. HERBERT LANGTON; 11 Marlborough Place, Brighton.
1881. HON. GERALD LASCELLES; Queen's House, Lyndhurst.
1892. ARTHUR MOORE LAWS; Little Clacton Lodge, near Colchester.
- 125 1885. GEORGE LAWSON, C.B.; 36 Craven Hill Gardens, Hyde Park, London, W.
1876. WILLIAM VINCENT LEGGE, Col. R.A., F.Z.S.; Commandant's Office, Hobart Town, Tasmania.
1868. HAMON LE STRANGE, F.Z.S.; Hunstanton Hall, King's Lynn, Norfolk.
1875. PAGET WALTER LE STRANGE, Col. R.A.; Dol-llan, Llandyssil, South Wales.
1889. CHRISTOPHER JOHN LEYLAND; Brynllwarch, Kerry, Montgomeryshire.
- 130 1886. HAROLD LITLEDAL, B.A. &c.; Vice-Principal, The College, Baroda.
- *THOMAS LYTTLETON, Lord LILFORD, F.L.S., F.Z.S.; Lilford Hall, Oundle.
1874. JOHN HAYES LLOYD, Col., F.Z.S.; Sudley House, Bognor, Sussex.
1889. ARTHUR PURVIS LOYD, F.Z.S. (late Major 21st Hussars); 3 Queen's Mansions, Victoria Street, S.W.
1877. J. LUMSDEN, F.Z.S.; Arden House, Alexandria, N.B.
- 135 1886. REV. HUGH ALEXANDER MACPHERSON; 20 Cecil Street, Carlisle.
1875. JOHN WINGFIELD MALCOLM, F.Z.S.; 7 Great Stanhope Street, Mayfair, London, W.
1878. HENRY STACY MARKS, R.A., F.Z.S.; 17 Hamilton Terrace, St. John's Wood, London, N.W.
1878. REV. MURRAY A. MATHEW, M.A., F.L.S.; Buckland Dinham, Frome, Somersetshire.

Date of
Election.

1883. EDMUND GUSTAVUS BLOOMFIELD MEADE-WALDO; Rope Hill,
Lymington, Hants.
- 140 1886. JOHN GUILLE MILLAIS, F.Z.S.; 2 Palace Gate, Kensington,
W.
1879. FREDERICK SHAW MITCHELL; Edmonton, Alberta, N. W. T.,
Canada.
1892. ST. GEORGE MIVART, Ph.D., M.D., F.R.S.; Hurstcote, Chil-
worth, Surrey.
1890. THOMAS JAMES MONK; St. Anne's, Lewes, Sussex.
1864. ALEXANDER GOODMAN MORE, F.L.S., &c.; 74 Leinster Road,
Rathmines, Dublin.
- 145 1887. GEORGE MORGAN, Lieut.-Col.; Biddlesden Park, Brackley.
1886. GEORGE MUIRHEAD, F.Z.S.; Mains of Haddo, Aberdeen.
1892. PHILIP WINCHESTER MUNN; Laverstoke, Whitchurch, Hants.
1890. ALBERT IRVING MUNTZ; Umberslade, Birmingham.
1885. EDWARD NEALE; 43 Charlotte Street, Portland Place, London,
W.
- 150 1882. THOMAS HUDSON NELSON; Sandringham House, Redcar, York-
shire.
1876. HUGH NEVILL; Newton Villa, Godalming.
1872. FRANCIS D'ARCY WILLIAM CLOUGH NEWCOME; Feltwell Hall,
Brandon, Suffolk.
1890. C. M. HAYES NEWINGTON (Major King's Regt.); Lee, Kent,
and Army and Navy Club.
- *ALFRED NEWTON, M.A., F.R.S., F.Z.S., Professor of Zoology
in the University of Cambridge; Magdalene College, Cam-
bridge.
- 155 *Sir EDWARD NEWTON, K.C.M.G., M.A., F.L.S., C.M.Z.S.;
23 Wellington Esplanade, Lowestoft.
1891. DIGBY SEYS WHILLOCK NICHOLL, F.Z.S.; The Ham, Cow-
bridge, Glamorganshire.
1886. HOWARD HILL JOHN NICHOLLS, M.R.C.S.; The Moat, East-
bourne.
1876. FRANCIS NICHOLSON, F.Z.S.; Oakfield, Ashley Rd., Altrincham.
1887. GEORGE CAMERON NORMAN, F.Z.S.; 68 Lombard Street, E.C.
- 160 1882. EUGENE WILLIAM OATES, F.Z.S.; care of Messrs. Grindlay
& Co., 55 Parliament Street, London, S.W.
1892. FERGUS MENTEITH OGILVIE, M.A., F.Z.S.; Sizewell House,
Leiston, Suffolk.
1889. BERTRAM SAVILE OGLE; Hill House, Steeple Aston, Oxford.

Date of
Election.

- *SIR JOHN W. P. CAMPBELL ORDE, Bart., F.Z.S., late Captain
42nd (Royal Highland) Regiment; Kilmory House,
Lochgilphhead, Argyllshire, N.B.
1883. HENRY PARKER, C.E., F.Z.S., Irrigation Officer, P.W.D.;
Kurunegala, Ceylon.
- 165 1880. THOMAS PARKIN, M.A., F.Z.S.; Fairseat, High Wickham,
Hastings.
1891. ROBERT PATTERSON; 57 High Street, Belfast.
1884. R. L. PATTERSON, F.L.S.; Croft House, Holywood, co. Down.
1891. HENRY J. PEARSON; Bramcote, Beeston, Notts.
1891. FRANK PENROSE; 4 Harley Street, W.
- 170 1886. E. CAMBRIDGE PHILLIPS; The Elms, Brecon.
1886. E. LORT PHILLIPS, F.Z.S.; 79 Cadogan Square, S.W.
1888. GEORGE THORNE PHILLIPS; Wokingham, Berkshire.
1883. THOMAS MAYER PIKE, M.A.; care of R. H. Porter, 18 Princes
Street, Cavendish Square, London, W.
1888. MERVYN OWEN WAYNE POWYS, B.A., F.Z.S.; Oriental Club,
Hanover Square, W.
- 175 1888. EUSTACE RADCLYFFE; Hyde, Wareham, Dorset.
1872. R. G. WARDLAW RAMSAY, Major, F.Z.S.; Whitehill, Rosewell,
Midlothian.
1879. HERBERT EVELYN RAWSON, F.Z.S.; Fallbarrow, Windermere.
1888. ROBERT H. READ; care of Sir John Fowler, 2 Queen Square
Place, Westminster, S.W.
1877. SAVILE G. REID, late Capt. R.E., F.Z.S.; Froyle House, Alton,
Hants.
- 180 1883. WILLIAM HERBERT ST. QUINTIN, F.Z.S.; Scampston Hall,
Rillington, Yorkshire.
- *OSBERT SALVIN, M.A., F.R.S., F.Z.S., &c.; 10 Chandos Street,
London, W., and Hawksfold, Fernhurst, Haslemere.
1870. HOWARD SAUNDERS, F.L.S., F.Z.S., &c.; 7 Radnor Place,
Hyde Park, London, W.
- *PHILIP LUTLEY SCLATER, M.A., Ph.D., F.R.S., &c.; Secretary
to the Zoological Society of London, 3 Hanover Square,
London, W., and Odiham Priory, Winchester.
1891. WILLIAM LUTLEY SCLATER, M.A., F.Z.S.; Eton College, Windsor.
- 185 1881. J. SCULLY, F.L.S., F.Z.S., Surgeon-Major; care of Messrs. H.
S. King & Co., 65 Cornhill, London, E.C.
1873. HENRY SEEBOHM, F.Z.S.; 22 Courtfield Gardens, London,
S.W.

Date of
Election.

1889. HUMPHREY PATRICIUS SENHOUSE, B.A.; The Fitz, Cocker-
mouth, Cumberland.
1871. RICHARD BOWDLER SHARPE, LL.D., F.L.S., F.Z.S.; Senior
Assistant, Zoological Department, British Museum (Natural
History), South Kensington, London, S.W.
1886. WILLIAM CARSTAIRS SHAW; Bank of Madras, Madras.
- 190 1870. G. ERNEST SHELLEY, F.Z.S., late Captain, Grenadier Guards;
10 Thurloe Square, London, S.W.
1865. REV. CHARLES WILLIAM SHEPHERD, M.A., F.Z.S.; Trotters-
cliffe Rectory, Maidstone, Kent.
1881. F. B. SIMSON, F.Z.S.; Broom Hill, Spratton, Northampton.
1882. REV. HENRY H. SLATER, M.A., F.Z.S.; Irchester Vicarage,
Wellingboro', Northamptonshire.
1878. GEORGE MONLAW SLAUGHTER, Brigade-Surgeon; Farningham,
Kent.
- 195 1864. REV. ALFRED CHARLES SMITH, M.A.; Old Park, Devizes, Wilts.
1881. THOMAS SOUTHWELL, F.Z.S.; 10 The Crescent, Chapel Field,
Norwich.
1875. A. C. STARK; The Cottage, Whiteparish, near Salisbury.
1889. WILLIAM STOATE; Belmont, Burnham, Somerset.
1881. ROBERT WRIGHT STUDDY, Lieut.-Col. 2nd Manchester Regi-
ment, India; care of E. W. H. Holdsworth, 84 Clifton
Hill, St. John's Wood, London, N.W.
- 200 1887. FREDERICK WILLIAM STYAN, F.Z.S.; 23 Upper Bedford Place,
London, W.C., and Shanghai, China.
1887. JOHN SWINBURNE; Shona Ranch, St. John's, Apache Country,
Arizona, U.S.A.
1882. CHARLES SWINHOE, Col. Bombay Staff Corps, F.L.S., F.Z.S.;
Avenue House, Cowley Road, Oxford.
1884. W. C. TAIT, C.M.Z.S.; Oporto, Portugal.
- *EDWARD CAVENDISH TAYLOR, M.A., F.Z.S.; 74 Jermyn Street,
London, S.W.
- 205 1873. WILLIAM BERNHARD TEGETMEIER, F.Z.S.; 16 Alexandra
Grove, North Finchley, N.
1889. EDWARD PRIAULX TENNANT; 40 Grosvenor Square, W., and
The Glen, Innerleithen, N.B.
1886. HORACE A. TERRY, Captain 43rd Light Infantry; Burvale,
Walton-on-Thames.
1891. WILLIAM BLUNDELL THORNHILL; Castle Cossey, Castle Belling-
ham, Ireland.

Date of
Election.

- *REV. HENRY BAKER TRISTRAM, M.A., LL.D., F.R.S., C.M.Z.S.,
Canon of Durham; The College, Durham.
- 210 1890. JOHN TRISTRAM TRISTRAM-VALENTINE, F.Z.S.; 1 Sheffield
Gardens, Kensington, W.
1892. WILLIAM HENRY TURLE; Newton Stacey, Stockbridge, Hants.
1864. HENRY MORRIS UPCHER, F.Z.S.; Sheringham Hall, Norfolk,
and Feltwell Hall, Brandon.
1890. STEPHEN VENOUR; Fern Bank, Altrincham, Cheshire.
1881. WILLOUGHBY VERNER, Capt. Rifle Brigade; Junior United
Service Club, S.W.
- 215 1884. A. S. VEREY; Heronsgate, near Rickmansworth.
1891. C. W. DE VIS, Queensland Museum, Brisbane; care of Williams
and Norgate, 14 Henrietta Street, Covent Garden, W.C.
1889. H. HOWARD VYSE; Stoke Place, Slough.
1886. H. D. WADE-DALTON, Lieut.-Col. 2nd Middlesex Regiment;
Quetta, N.W. India.
1881. THOMAS, LORD WALSHINGHAM, F.R.S., F.Z.S.; Merton Hall,
Thetford, Norfolk.
- 220 1874. CHARLES BYGRAVE WHARTON, F.Z.S.; Hounslow, Totton,
Hants.
1878. HENRY THORNTON WHARTON, M.A., F.Z.S.; Madresfield,
Acol Road, Priory Road, West Hampstead.
1891. BENJAMIN INGHAM WHITAKER; Hesley Hall, Tickhill, Rother-
ham.
1884. JOSEPH WHITAKER, F.Z.S.; Rainworth Lodge, Mansfield, Notts.
1891. JOSEPH S. WHITAKER; Malfitano, Palermo, Sicily.
- 225 1887. JEFFERY WHITEHEAD; Southwood, Bickley, Kent.
1888. CHARLES JOSEPH WILSON; 16 Gordon Square, W.C.
1887. SCOTT BARCHARD WILSON, F.Z.S.; Heatherbank, Weybridge
Heath, Surrey.
1891. FRANK WITHINGTON; care of Messrs. Read & Campbell, San
Juan de Letran, Mexico City, Mexico.
1875. CHARLES A. WRIGHT, F.L.S., F.Z.S. (Knight of the Crown of
Italy); Kayhough, Kew-Gardens Road, Kew, Surrey.
- 230 1871. E. PERCEVAL WRIGHT, M.D., F.L.S., F.Z.S., Professor of Botany
in the University of Dublin.
1891. THOMAS WRIGHT, M.D.; Castle Place, Nottingham.
1876. CLAUDE W. WYATT; Adderbury, Banbury.
1889. JAMES B. YOUNG, Commander R.N., H.M.S. 'Pylades.'
1878. JOHN YOUNG, F.Z.S.; 64 Hereford Road, Bayswater, London, W.
- 235 1877. J. H. YULE, Major, Devon Regiment; Jullundur, India.

Date of
Election.

Extra-Ordinary Member.

1860. ALFRED RUSSEL WALLACE, F.Z.S.; Corfe View, Parkstone,
Dorset.

Honorary Members.

1886. THOMAS AYRES; Potchefstroom, *Transvaal*.
1860. DR. EDUARD BALDAMUS; Moritzwinger, No. 7, *Halle*.
1890. HANS, GRAF VON BERLEPSCH, C.M.Z.S.; Münden, *Hanover*.
1860. DR. JEAN CABANIS, C.M.Z.S., Friedrichshagen, bei *Berlin*.
5 1870. DR. OTTO FINSCH, C.M.Z.S.; Delmenhorst, near *Bremen*.
1880. HEINRICH GÄTKE, C.M.Z.S., *Heligoland*.
1860. DR. GUSTAV HARTLAUB, F.M.Z.S., *Bremen*.
1860. EDGAR LEOPOLD LAYARD, C.M.G., F.Z.S., Budleigh Salterton,
Devonshire.
1890. COUNT TOMMASO SALVADORI, M.D., C.M.Z.S.; Royal Zoological
Museum, *Turin*.

Foreign Members.

1890. JOEL ASAPH ALLEN, C.M.Z.S.; American Museum of
Natural History, Central Park, *New York*.
1872. Prof. J. V. BARBOZA DU BOCAGE, C.M.Z.S.; Royal Museum,
Lisbon.
1880. LOUIS BUREAU, M.D.; École de Médecine, *Nantes*.
1873. Prof. ROBERT COLLETT, C.M.Z.S.; Zoological Museum, *Chris-*
tiania.
5 1872. DR. ELLIOTT COUES, C.M.Z.S.; Smithsonian Institution, *Wash-*
ington, D.C.
1875. MARCHESI GIACOMO DORIA, F.M.Z.S., *Genoa*.
1890. DR. EMIN PASHA, C.M.Z.S.; *Bagamoyo, East Africa*.
1872. DR. VICTOR FATIO, C.M.Z.S., *Geneva*.
1872. DR. HENRY HILLYER GIGLIOLI, F.M.Z.S.; Real Istituto di
Studi Superiori, *Florence*.
10 1872. GEORGE N. LAWRENCE, C.M.Z.S.; 45 East 21st Street, *New*
York.
1872. BARON DE SELYS LONGCHAMPS, *Liège*.
1866. DR. JULIUS VON MADARÁSZ; National Museum, *Buda-Pesth*.

Date of
Election.

1872. Dr. A. J. MALMGREN, *Helsingfors*.
 1883. Prof. OTHNIEL CHARLES MARSH, C.M.Z.S.; Yale College, *New-
 haven, U.S.A.*
 15 1881. Dr. ADOLPH BERNHARD MEYER, C.M.Z.S., Director of the Royal
 Museum, *Dresden*.
 1872. Dr. A. VON MIDDENDORFF, *Dorpat*.
 1872. Prof. ALPHONSE MILNE-EDWARDS, C.M.Z.S.; Jardin des Plantes,
Paris.
 1890. M. EMILE OUSTALET, C.M.Z.S.; Muséum d'Histoire Naturelle,
 Jardin des Plantes, *Paris*.
 1872. Prof. GUSTAV RADDE, C.M.Z.S., *Tiflis*.
 20 1880. ROBERT RIDGWAY, C.M.Z.S.; Smithsonian Institution, *Wash-
 ington, D.C.*

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ERRATA.

Page	Line	
27,	11,	for <i>Anser boschas</i> read <i>Anas boschas</i> .
40,	25,	for <i>F. vulgaris</i> read <i>F. francolinus</i> .
76,	44,	for <i>Lioparus chrysæus</i> read <i>Lioparus chrysotis</i> .
152,	11,	for <i>Dryocopus lineatus</i> read <i>Ceophlaeus lineatus</i> .
276,	29,	for Mr. F. A. Allen read Mr. J. A. Allen.
348,	12,	for <i>Amanocichla</i> read <i>Amalocichla</i> .
493,	10,	for <i>Merus serrator</i> read <i>Mergus serrator</i> .

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June 528
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I.—*List of the Birds of Heligoland as recorded by Herr Gätke.*
By HENRY SEEBOHM.

THE appearance of Herr Gätke's volume 'Die Vogelwarte Helgoland',*, after so many years' delay, at length gives the ornithological world an opportunity of studying the marvellous facts relating to the migration of birds upon this wonderful little island.

For the first time we are in possession of a complete list of the 396 species which are believed to have occurred on this isolated rock during the last sixty years. The book is written in German and fills more than 600 octavo pages. It is full of interest and will shortly, it is hoped, appear in an English translation; but in the meantime even an almost bare list of the birds of Heligoland will be of great interest to British ornithologists.

I have therefore prepared the subjoined summary from Herr Gätke's volume. The numbers prefixed to each species are those used in his book, but in some cases the names have been altered so as to accord more nearly with modern usage.

1. FALCO CANDICANS.

One shot October 1843. Two or three seen since.

* See notice, 'Ibis,' 1891, p. 613.

2. *FALCO GYRFALCO.*

Generally one or two seen in October and November. Half a dozen shot during last half-century.

3. *FALCO SACER.*

One, said to have been of this species, shot in 1840.

4. *FALCO LANARIUS.*

One, identified from memory, shot in 1840.

5. *FALCO PEREGRINUS.*

Passes over in March and the first half of April, and again in October. Young often met with as early as the end of August.

6. *FALCO SUBBUTEO.*

Passes over in May, and again in September. Young often met with in the last half of August.

7. *FALCO ELENORÆ.*

One believed to have been seen in May 1879, and afterwards identified from memory.

8. *FALCO ÆSALON.*

The commonest Falcon on the island. Passes over in March and April, and again in September and October. Young often seen at the end of August.

9. *FALCO TINNUNCULUS.*

Common in April and May, and again in September and October, but occasionally seen at all seasons. Young begin to arrive middle of August.

10. *FALCO CENCHRIS.*

An example supposed to have been of this species shot about 1840. A second said to have been procured some years earlier. A third seen.

11. *FALCO VESPERTINUS.*

Shot five times, in each case in spring.

12. *AQUILA CHRYSÆTUS.*

Shot once in November 1867; seen three other times.

13. *AQUILA NÆVIA.*

One shot about 1838, a second found dead some years afterwards.

14. *HALIAËTUS ALBICILLA.*

One found dead in 1875. In favourable weather seen almost daily in spring and autumn.

15. *PANDION HALIAËTUS.*

Seen in April and May, and again in September. Young seen in August.

16. *CIRCAËTUS BRACHYDACTYLUS.*

An example said to have been of this species shot in 1835. Afterwards a second supposed to have been seen.

17. *ASTUR PALUMBARIUS.*

Three shot, one or two more seen.

18. *ACCIPITER NISUS.*

Common in October and November. Young met with from the middle of August to the end of October.

19. *BUTEO VULGARIS.*

Seen in every month, except June and July.

20. *ARCHIBUTEO LAGOPUS.*

Frequent in spring and autumn, occasionally in winter.

21. *PERNIS APIVORUS.*

Passes from middle of May to middle of June, and again from middle of August to middle of September.

22. *MILVUS REGALIS.*

Seen once or twice every year, but only three shot during half a century.

23. *MILVUS ATER.*

One shot, two others seen.

24. *CIRCUS ÆRUGINOSUS.*

Four shot.

25. *CIRCUS CYANEUS.*

Half a dozen shot.

26. *CIRCUS PALLIDUS.*

Young shot 12th August, 1858.

27. *CIRCUS CINERACEUS*.

One adult shot half a century ago, a second seen November 1852, two young shot since.

28. *STRIX ALUCO*.

One shot half a century ago.

29. *ALUCO FLAMMEA*.

A dozen seen and several shot in October 1876; otherwise scarcely met with every year.

30. *NOCTUA NOCTUA*.

One shot half a century ago.

31. *STRIX TENGMALMI*.

Not seen every year.

32. *STRIX OTUS*.

Seen every spring and autumn.

33. *STRIX BRACHYOTUS*.

By far the commonest Owl; passes over in April, and again in September and October.

34. *SCOPS SCOPS*.

One shot in May 1862.

35. *SURNIA NYCTEA*.

One shot half a century ago, said to have been twice seen since.

36. *SURNIA FUNEREA*.

One shot half a century ago; said to have been twice seen since.

37. *CORVUS CORAX*.

Once or twice seen; one shot in 1841.

38. *CORVUS CORONE*.

Very rare; none shot recently.

39. *CORVUS CORNIX*.

Common in spring, and passing over in October and November in enormous numbers.

40. CORVUS FRUGILEGUS.

Common in spring from the middle of February to the middle of April, and late in the autumn.

41. CORVUS MONEDULA.

Common in spring and autumn.

42. PICA CAUDATA.

One seen half a century ago, one shot in November 1876.

43. NUCIFRAGA CARYOCATACTES.

One killed in August 1844, a second in October 1853, and a third a few years later.

44. GARRULUS GLANDARIUS.

In October 1882 in many thousands; but sometimes ten years or more pass without any being seen.

45. PERISOREUS INFAUSTUS.

Included on the authority of a boy, who described a bird seen on the 14th of April, 1849.

46. PYRRHOCORAX ALPINUS.

One shot half a century ago, three seen since.

47. PYRRHOCORAX GRACULUS.

One seen in May 1871, a second in March 1877.

48. LANIUS EXCUBITOR.

Rare in spring, commoner in autumn.

49. LANIUS MAJOR.

Not so rare as *Lanius excubitor*.

50. LANIUS MERIDIONALIS.

Once shot in spring.

51. LANIUS MINOR.

One shot in June 1887; seldom a year without one or two being seen.

52. LANIUS RUFUS.

Has been shot five times during the last half-century, always in spring.

53. *LANIUS COLLURIO*.

Occasionally in spring, in autumn commoner, but only young birds.

54. *LANIUS ISABELLINUS*.

One shot 25th October, 1854.

55. *MUSCICAPA ATRICAPILLA*.

Passes over in some numbers in May, and again in September; the young in August.

56. *MUSCICAPA ALBICOLLIS*.

One caught 3rd June, 1860.

57. *MUSCICAPA GRISOLA*.

Passes over from the middle of May to the middle of June; returns in July.

58. *MUSCICAPA PARVA*.

Very rare in spring, not quite so rare in autumn.

59. *AMPELIS GARRULUS*.

A few in November 1847 and January 1850, since then very rare.

60. *ORIOULUS GALBULA*.

One or two immature birds generally seen towards the end of May.

61. *STURNUS VULGARIS*.

Common in February and March; young common from the last week in June to the last week in July; adults very common from the end of September to the middle of December.

62. *PASTOR ROSEUS*.

Seldom a year passes without one being seen, generally in June, sometimes in August.

63. *GEOCICHLA VARIA*.

Thirteen examples caught, most of them in September and October. Seven or eight others seen.

64. *GEOCICHLA DAUMA*.

An example in the Lund Museum, supposed to belong to this species, is suspected to have been shot on Heligoland!

65. *TURDUS VISCIVORUS*.

Sparingly, from February onwards.

66. *TURDUS MUSICUS*.

In great numbers from March to the middle of May, and again from the middle of September to the middle of November.

67. *TURDUS ILLIACUS*.

Much rarer than *Turdus musicus*; the autumn migration does not begin until the middle of October.

68. *TURDUS FALLENS*.

A bird seen by Claus Aeuckens on the 3rd of June, 1881, is supposed to have belonged to this species.

69. *TURDUS SWAINSONI*.

An example belonging to the eastern race (*Turdus swainsoni aliciæ*) was caught on the 2nd of October, 1869.

70. *TURDUS PALLASI*.

An example, identified from memory a few years later, was caught in October 1836.

71. *TURDUS FUSCESCENS*.

An example, identified from memory years afterwards, was caught before 1833.

72. *TURDUS PILARIS*.

Passes over in great numbers from March to May, and again in November and December, and often in January.

73. *TURDUS FUSCATUS*.

A young specimen was caught in October 1880.

74. *TURDUS RUFICOLLIS*.

A young bird was caught in November 1843.

75. *TURDUS ATRIGULARIS*.

An adult male once seen.

76. *TURDUS TORQUATUS*.

Passes over from the middle of April to the middle of May, and again in September.

77. *TURDUS MERULA*.

Common in March and the first half of April, and again in the last half of October and the first half of November.

78. *TURDUS MIGRATORIUS*.

An adult found dead in October 1874.

79. *MONTICOLA SAXATILIS*.

Two adults caught in May 1851, and one in May 1860; a young bird in November 1874. Two or three others seen.

80. *MONTICOLA CYANUS*.

One caught about 1830, and identified years afterwards from memory.

81. *MIMUS CAROLINENSIS*.

One shot in October 1840.

82. *HARPORHYNCHUS RUFUS*.

A bird, said to have been of this species, caught late in the autumn of 1836.

83. *PYCNONOTUS XANTHOPYGIUS*.

A bird, said to have been of this species, caught in May 1837.

84. *DAULIAS LUSCINIA*.

Passes over from middle of April to middle of May; has never been caught in autumn.

85. *DAULIAS PHILOMELA*.

Once caught in May.

86. *AEDON FAMILIARIS*.

One caught about 1832; two others supposed to have been seen.

87. *CYANECULA SUECICA*.

Common in May, and again from the middle of August to the middle of September.

88. *CYANECULA LEUCOCYANEA*.

Many in April 1877, otherwise so rare that not more than ten others have been caught in the last half-century.

89. *CYANECULA WOLFI*.

One shot in March 1848.

90. *ERITHACUS RUBECULA*.

Common in spring, beginning early, and in autumn continuing late.

91. *RUTICILLA PHŒNICURUS*.

Common in May and again in September.

92. *RUTICILLA MESOLEUCA*.

One shot in June 1864.

93. *RUTICILLA TITYS*.

Arrives regularly some time in March, and again late in autumn; sometimes seen in winter.

94. *RUTICILLA MOUSSIERI*.

One said to have been shot in the summer of 1842.

95. *SYLVIA ORPHEA*.

One shot in July 1876; two others said to have been shot half a century ago.

96. *SYLVIA CINEREA*.

Very common from the middle of April to the end of May, and again from the end of August to the end of September.

97. *SYLVIA CURRUCA*.

Passes over in small numbers from the beginning of April to the middle of May, and in still smaller numbers from the middle of September to the end of October.

98. *SYLVIA HORTENSIS*.

Common from the end of April to the end of May, and again from the end of August to the end of September.

99. *SYLVIA ATRICAPILLA*.

Passes over in small numbers from early in April to the end of May, and again in October and November.

100. *SYLVIA MELANOCEPHALA*.

An example supposed to have been of this species was shot half a century ago.

101. SYLVIA NISORIA.

Very rare ; never seen before the middle of May.

102. SYLVIA PROVINCIALIS.

One caught half a century ago, another seen in May 1851.

103. PHYLLOSCOPUS SIBILATRIX.

Rare in May, and still rarer in autumn, from the middle of July to the middle of August.

104. PHYLLOSCOPUS BONELLII.

One shot in October 1861, and a second in October 1874.

105. PHYLLOSCOPUS TROCHILUS.

Very common in May and September.

106. PHYLLOSCOPUS RUFUS.

Common in spring from the end of March, and in autumn up to November.

107. PHYLLOSCOPUS TRISTIS.

One caught in October 1846 ; half a dozen seen since.

108. PHYLLOSCOPUS FUSCATUS.

An example supposed to have belonged to this species seen in October 1876.

109. PHYLLOSCOPUS SUPERCILIOSUS.

Seen about eighty times during the last half-century ; more than thirty examples have been shot.

110. PHYLLOSCOPUS PROREGULUS.

One killed in October 1845 ; a second seen in October 1875.

111. PHYLLOSCOPUS CORONATUS.

One killed in October 1843.

112. PHYLLOSCOPUS BOREALIS.

One killed in October 1854 ; a second seen in June 1859.

113. PHYLLOSCOPUS VIRIDANUS.

One shot in September 1878, a second in May 1879, and a third in June 1880.

114. PHYLLOSCOPUS NITIDUS.

One shot in October 1867.

115. *HYPOLAIS ICTERINA.*

Very rare, in May and August.

116. *HYPOLAIS POLYGLOTTA.*

One caught in May 1846.

117. *HYPOLAIS OLIVETORUM.*

A much damaged example, believed to have belonged to this species, obtained in May 1860.

118. *HYPOLAIS ELAICA.*

One shot in September 1883.

119. *HYPOLAIS CALIGATA.*

One shot in September 1851.

120. *ACROCEPHALUS TURDOIDES.*

One shot half a century ago: two supposed to have been seen since.

121. *ACROCEPHALUS ARUNDINACEUS.*

Very rare, both in spring and autumn.

122. *ACROCEPHALUS PALUSTRIS.*

Rare in May and August.

123. *ACROCEPHALUS AGRICOLA.*

One shot in June 1864.

124. *ACROCEPHALUS PHRAGMITIS.*

Common from the end of March to the middle of May, and again from the beginning of August to the beginning of October.

125. *ACROCEPHALUS AQUATICUS.*

Very rare; seldom seen in spring.

126. *LOCUSTELLA CERTHIOLA.*

One shot in August 1856.

127. *LOCUSTELLA NÆVIA.*

Passes over in small numbers, principally in May and August.

128. *LOCUSTELLA FLUVIATILIS.*

One shot nearly half a century ago, a second seen in May 1874.

129. *DENDRÆCA VIRENS*.

An example of this North-American species was shot in November 1858.

130. *REGULUS CRISTATUS*.

Common from the end of March to the end of April, and again in September and October.

131. *REGULUS IGNICAPILLUS*.

Regular visitant, but in much smaller numbers than the preceding; rather earlier in spring and a little later in autumn.

132. *ACCENTOR MODULARIS*.

Passes over in some numbers.

133. *ACCENTOR ALPINUS*.

One shot in May 1852, a second in October 1862, and a third in May 1870; supposed to have been seen on two other occasions.

134. *CINCLUS MELANOGASTER*.

Five examples shot during the last half-century, all in autumn.

135. *CINCLUS PALLASI*.

On two occasions birds supposed to belong to this species have been seen.

136. *TROGLODYTES PARVULUS*.

Seen all the year round, except in summer.

137. *SAXICOLA GENANTHE*.

Common from the middle of March to the end of May, and again in autumn; young from the end of July to the middle of September, adults in fewer numbers from beginning of October to the end of November.

138. *SAXICOLA AURITA*.

Adult male shot in October 1851; another in May 1860.

139. *SAXICOLA STAPAZINA*.

An example, supposed to have belonged to this species, was caught half a century ago.

140. *SAXICOLA DESERTI.*

One shot in October 1856, a second in October 1857, and a third in June 1880.

141. *SAXICOLA MORIO.*

One shot in May 1867, a second in June 1882.

142. *SAXICOLA LEUCURA.*

An example, supposed to have belonged to this species, was seen in August 1880.

143. *PRATINCOLA RUBETRA.*

Common in May and August.

144. *PRATINCOLA RUBICOLA.*

Passes over in small numbers in early spring, and again in autumn.

145. *MOTACILLA ALBA.*

Passes over in some numbers in spring and autumn.

146. *MOTACILLA YARRELLI.*

Passes over from the end of February to the middle of March, but very rarely seen in autumn.

147. *MOTACILLA BOARULA.*

Occasionally met with in the first half of March, but very rare.

148. *MOTACILLA CITREOLA.*

Five examples caught during the last half-century, all immature, in autumn.

149. *MOTACILLA FLAVA.*

Common in spring and autumn.

150. { *MOTACILLA MELANOCEPHALA.*
 { *MOTACILLA VIRIDIS.*

Both species pass over in spring, the former first, but very rare; the latter passes also in autumn.

151. *MOTACILLA RAYI.*

In small numbers from the third week of April to the middle of May. Has twice bred on Heligoland.

152. *ANTHUS SPINOLETTA.*

One said to have been caught, and another seen, during the last half-century.

153. *ANTHUS OBSCURUS.*

Seen all the year round, except in June and July.

154. *ANTHUS LUDOVICIANUS.*

One shot in November 1851, and a second in May 1858.

155. *ANTHUS PRATENSIS.*

Passes over from the end of February to the end of May, and again from the end of August to the end of November.

156. *ANTHUS CERVINUS.*

Rare in autumn, not seen in spring.

157. *ANTHUS ARBOREUS.*

Common from the end of April to the end of May, and again from the middle of August to the end of September.

158. *ANTHUS CAMPESTRIS.*

Very rare in May and August.

159. *ANTHUS RICHARDI.*

A few pass over in spring, more in autumn, from early in September to late in November.

160. *ALAUDA ARVENSIS.*

Passes over, occasionally in enormous numbers; the spring migration sometimes begins in the middle of January, and often lasts until late in April; the autumn migration is in October and November.

161. *ALAUDA ARBOREA.*

Passes through in small numbers in spring and autumn.

162. *ALAUDA PISPOLETTA.*

One shot in May 1879.

163. *ALAUDA BRACHYDACTYLA.*

Rare; at the end of May or June, again in October and November.

164. *ALAUDA CALANDRA.*

One said to have been shot half a century ago in June.

165. *ALAUDA SIBIRICA.*

One shot in August 1881, a second in June 1886.

166. *ALAUDA TARTARICA.*

One shot in April 1874.

167. *ALAUDA CRISTATA.*

Very rare, not oftener than once in three years.

168. *ALAUDA ALPESTRIS.*

Before 1847 extremely rare; since then seen regularly in April and May, and again in October.

169. *EMBERIZA MILIARIA.*

Passes over in small numbers in March and November.

170. *EMBERIZA CITRINELLA.*

Common in spring and autumn, occasionally in winter.

171. *EMBERIZA AUREOLA.*

A young bird shot in September 1852, a second in November 1864, and an adult female in July 1870.

172. *EMBERIZA CIRLUS.*

An adult male shot in April 1862, and an adult female in March 1883.

173. *EMBERIZA CINEREA.*

An example, supposed to have belonged to this species, was seen in June 1877.

174. *EMBERIZA HORTULANA.*

Passes over in some numbers in May, and again from the middle of August to the end of September.

175. *EMBERIZA CÆSIA.*

Once shot during the last twenty years, and at least a dozen times during the previous twenty years, always in May or June.

176. *EMBERIZA CIA.*

One shot (immature) about fifty years ago, a second (adult male) in March 1882.

177. *EMBERIZA PITYORNIS.*

One caught (adult male) in April 1881.

178. *EMBERIZA FUSILLA.*

At least one every year in September or October.

179. *EMBERIZA RUSTICA*.

During the last half-century has been seen a dozen times in September and October, and twice in April. Eight examples are in Gätke's collection.

180. *EMBERIZA SCHÆNICLUS*.

Passes over in some numbers in spring and autumn.

181. *EMBERIZA PYRRHULOIDES*.

One shot in April 1879, others seen the same day.

182. *EMBERIZA MELANOCEPHALA*.

Adult male shot June 1845; since then fifteen adults seen and many shot, all in May and June; one young in August.

183. *EMBERIZA LUTEOLA*.

Two adult males supposed to have belonged to this species seen—one in June 1860, and the other in September some years later.

184. *EMBERIZA NIVALIS*.

Passes over in some numbers in spring and autumn.

185. *EMBERIZA LAPPONICA*.

Rare, especially in spring.

186. *DOLICHONYX ORYZIVORA*.

Two examples of this American bird have been shot, both in summer, one with much abraded wings and tail.

187. *FRINGILLA CŒLEBS*.

In great numbers during April, in still greater numbers from the middle of September to the end of October.

188. *FRINGILLA MONTIFRINGILLA*.

Common in April and October.

189. *FRINGILLA NIVALIS*.

Two examples, supposed to have belonged to this species, have been seen—one in March 1849, and the other in late autumn.

190. *FRINGILLA CARDUELIS*.

Passes over in small numbers from the middle of April to the end of May, and again in October. Occasionally occurs in severe weather in winter.

191. *FRINGILLA CANNABINA.*

Common from the end of January to the end of April, and again in October and November. Occasional in severe weather in winter.

192. *FRINGILLA FLAVIROSTRIS.*

Common in March, and again in October and November. Many in December.

193. *FRINGILLA LINARIA.*

Rare in spring, irregular in autumn and winter; sometimes occurs in enormous numbers.

194. *FRINGILLA HORNEMANNI.*

Once shot in October 1879.

195. *FRINGILLA EXILIPES.*

Occasionally seen half a century ago; one caught in December 1881.

196. *FRINGILLA RUFESCENS.*

One shot in October 1882, another in November of the same year, and a third in May 1884.

197. *FRINGILLA SPINUS.*

Rare in spring, common from the middle of September to the end of October; sometimes found in enormous numbers.

198. *FRINGILLA CITRINELLA.*

One caught half a century ago, and kept some years in a cage; a second seen in March 1849.

199. *FRINGILLA SERINUS.*

An adult male shot in July 1860, another in June 1879, and three weeks afterwards five young.

200. *FRINGILLA PUSILLA.*

An example, believed to have belonged to this species, seen in May 1886.

201. *FRINGILLA CHLORIS.*

Irregularly in winter.

202. *COCCOTHAUSTES VULGARIS.*

Passes through in small numbers in spring and autumn.

203. *PASSER DOMESTICUS.*

The only Passerine bird which breeds regularly on Heligoland. The young leave at the end of July, and the old in the middle of September. Strangers pass over in spring and autumn, and a few are seen in winter.

204. *PASSER MONTANUS.*

Passes over in spring and autumn.

205. *PYRRHULA MAJOR.*

One or two only met with every half dozen years, except in 1847, when a score or more were seen between the 26th of October and the 17th of November.

206. *PYRRHULA VULGARIS.*

One caught several years ago.

207. *PINICOLA ENUCLEATOR.*

Two examples caught half a century ago, and kept in a cage.

208. *CARPODACUS ROSEUS.*

A young bird obtained, as recorded by Blasius in his supplement to "Naumann."

209. *CARPODACUS ERYTHRINUS.*

Four young birds shot; the first in October 1851, the last in September 1884.

210. *LOXIA PITYOPSITTACUS.*

An example said to have been shot half a century ago.

211. *LOXIA CURVIROSTRA.*

Formerly common, of late years much less so.

212. *LOXIA BIFASCIATA.*

Very irregular; several in August and September 1889.

213. *PARUS MAJOR.*

Common in March, much commoner from the end of September to the middle of December; sometimes in enormous numbers.

214. *PARUS ATER.*

During the last quarter of a century perhaps fifteen seen, formerly more common.

215. *PARUS CÆRULEUS.*

Common in March, and again in September and October.

216. *PARUS PALUSTRIS.*

Said to have been caught on the island many years ago.

217. *PARUS BOREALIS.*

Said to have visited the island on the 10th of November 1881.

218. *PARUS KAMTSCHATKENSIS.*

An example, supposed to have belonged to this species, was seen on the 1st of November, 1876.

219. *PARUS CRISTATUS.*

Said to have been caught half a century ago, and to have been once seen since.

220. *ACREDULA CAUDATA.*

An irregular and rare visitor in autumn, still more so in spring.

221. *PANURUS BIARMICUS.*

One shot half a century ago, a second in November 1847, and a third in 1849. Three or four others seen.

222. *CERTHIA FAMILIARIS.*

A rare visitor in autumn, still rarer in spring.

223. *HIRUNDO RUSTICA.*

Common from the middle of April to the end of May, and again from the middle of September to the end of October.

224. *HIRUNDO CAHIRICA.*

An example, supposed to have belonged to this species, seen on the 20th and 21st of May, 1881.

225. *HIRUNDO RUFULA.*

One shot in May 1885.

226. *CHELIDON URBICA.*

Arrives in some numbers, a little later in spring and a little earlier in autumn than *Hirundo rustica*.

227. *COTILE RIPARIA.*

Very common in spring and autumn.

228. *CYPSELUS APUS*.

Common in spring and autumn.

229. *CYPSELUS MELBA*.

One shot in May 1871, two others seen.

230. *CAPRIMULGUS EUROPEUS*.

Passes over from the middle of May to the middle of June, and again in August.

231. *CAPRIMULGUS AEGYPTIUS*.

One shot in June 1875.

232. *PICUS MAJOR*.

Occasionally in autumn, mostly young birds.

233. *PICUS LEUCONOTUS*.

Said to have visited the island on the 21st of September, 1879.

234. *GECCINUS VIRIDIS*.

An example, supposed to have belonged to this species, was seen some years ago in early summer.

235. *CUCULUS CANORUS*.

Passes over in May, and again before the end of June; young not until July and August.

236. *LYNX TORQUILLA*.

Passes over in some numbers in spring and autumn.

237. *ALCEDO ISPIDA*.

A rare and irregular visitor.

238. *MEROPS APIASTER*.

One shot half a century ago.

239. *CORACIAS GARRULA*.

Three shot, one half a century ago, the third in May 1881.

240. *UPUPA EPOPS*.

Very rare from the middle of April to the middle of May, still rarer in autumn.

241. *SYRRHAPTES PARADOXUS*.

Common in 1863; many shot from the 21st May to the

end of the year. A few in 1872 and 1876; and again common in 1888, when many were shot from 25th of April to 20th of July.

242. *PERDIX CINEREA*.

Very rare; only known with certainty to have occurred once.

243. *COTURNIX COMMUNIS*.

Generally one or two during the year.

244. *COLUMBA PALUMBUS*.

In small numbers in March and April, in greater numbers from the middle of September to the middle of November.

245. *COLUMBA LIVIA*.

Very rare; one shot every ten years or so.

246. *COLUMBA OENAS*.

One or two seen every spring and autumn.

247. *TURTUR AURITUS*.

Common from the middle of May to the middle of June, and again in autumn, but in much smaller numbers.

248. *TURTUR RISORIUS*.

Many years ago an example, believed to have belonged to this species, was shot.

249. *OTIS TETRAX*.

Two shot half a century ago, and a third in June 1882.

250. *CURSORIUS GALLICUS*.

One shot about the year 1835.

251. *GRUS CINEREA*.

A bird supposed to have belonged to this species was seen in April 1867.

252. *GRUS VIRGO*.

One shot in May 1837.

253. *CICONIA ALBA*.

Occasionally seen.

254. *CICONIA NIGRA*.

One shot in May 1889; two or three others about thirty years ago.

255. *ARDEA CINEREA*.

Very rare, mostly young in autumn.

256. *ARDEA PURPUREA*.

One shot in June 1847.

257. *BOTAURUS STELLARIS*.

Two examples said to have been killed—one about 1830, and the other in 1847.

258. *BOTAURUS MINUTUS*.

One shot in 1847.

259. *PLEGADIS FALCINELLUS*.

An example, supposed to belong to this species, was shot in the summer of 1824.

260. *NUMENIUS ARQUATA*.

Very numerous in spring and autumn, occasionally in winter. Young always precede adults in autumn.

261. *NUMENIUS PHÆOPUS*.

Passes over in great numbers during the latter half of April and during May. In autumn young arrive the middle of July, adults pass over in August and September.

262. *NUMENIUS TENUIROSTRIS*.

An example, supposed to have belonged to this species, was shot about 1838.

263. *LIMOSA MELANURA*.

Three examples said to have been shot during the last half-century.

264. *LIMOSA RUFÆ*.

Very rare in spring, an occasional young bird in autumn.

265. *CHARADRIUS PLUVIALIS*.

Occasionally seen all the year round; commonest in May and the first half of June, and again in August and September.

266. *CHARADRIUS FULVUS*.

One shot in June 1857, a second in June 1860, and a third in July 1867.

267. *CHARADRIUS VIRGINICUS.*

One shot in December 1847.

268. *CHARADRIUS SQUATAROLA.*

Passes over late in May and early in June. Young arrive early in autumn, and adults late.

269. *VANELLUS CRISTATUS.*

Passes over very early in spring, and again in autumn; young in July, adults later.

270. *ÆDICNEMUS CREPITANS.*

Has not been shot more than half a dozen times during the last half-century.

271. *CHARADRIUS MORINELLUS.*

Passes over from the middle of May to the middle of June, and again in August.

272. *CHARADRIUS CASPIUS.*

One supposed to have been seen in March 1848; one shot in November 1850, a second shot in May 1859, and a third seen in April 1876.

273. *CHARADRIUS HIATICULA.*

Passes through from the middle of March to the middle of April, and again in autumn, the young first, early in July.

274. *CHARADRIUS CANTIANUS.*

One or two adults pass over in most springs, and a few young in autumn.

275. *CHARADRIUS MINOR.*

Two shot in June 1866.

276. *SCOLOPAX RUSTICULA.*

Passes over in great numbers in March and April, and again in October and November.

277. *SCOLOPAX MAJOR.*

Two or three in May, and a few, mostly young, late in August or early in September.

278. *SCOLOPAX GALLINAGO.*

Seen all the year round, except June and July.

279. *SCOLOPAX GALLINULA*.

Passes over in some numbers from the middle of April to the end of May, and again in autumn.

280. *TOTANUS CALIDRIS*.

Passes over in April, and again in autumn; young in July.

281. *TOTANUS FUSCUS*.

Two or three shot, and two or three more seen, during the last half-century, in spring; perhaps half a dozen in autumn.

282. *TOTANUS GLOTTIS*.

A few pass over in spring from the end of April to the middle of May; more in autumn, principally young in August.

283. *TOTANUS STAGNATILIS*.

One shot in May 1862.

284. *TOTANUS OCHROPUS*.

Passes over in April, and again in autumn, the latter mostly young.

285. *TOTANUS GLAREOLA*.

Passes over from the middle of April to the end of May, and again in autumn.

286. *TOTANUS HYPOLEUCUS*.

The commonest Sandpiper on the island.

287. *TOTANUS MACULARIUS*.

Twice supposed to have been seen—once in May 1837 or thereabouts, and the second time in May 1847.

288. *HIMANTOPUS MELANOPTERUS*.

One supposed to have been shot half a century ago, a second seen in June 1879.

289. *RECURVIROSTRA AVOCETTA*.

One shot in June 1871; one said to have been seen previously.

290. *HÆMATOPUS OSTRALEGUS*.

Common in spring and autumn.

291. *TRINGA CANUTUS*.

One or two adults in May, many young in August.

292. *TRINGA MARITIMA.*

Principally a winter visitor.

293. *TRINGA SUBARQUATA.*

Very rare; a few young every autumn.

294. *TRINGA ALPINA.*

Seen all the year round, except in June and July.

295. *TRINGA MINUTA.*

Only once seen in spring, common every autumn, mostly young, from the beginning of August to the middle of September.

296. *TRINGA TEMMINCKI.*

Very rare in spring, commoner in August and September.

297. *TRINGA ARENARIA.*

Passes over in spring and autumn.

298. *STREPSILAS INTERPRES.*

Rare in spring, commoner in autumn.

299. *TRINGA PLATYRHYNCHA.*

Half a dozen shot in May 1855.

300. *TOTANUS PUGNAX.*

Passes over in spring and autumn.

301. *TRINGA RUFESCENS.*

One shot in May 1847.

302. *PHALAROPUS FULICARIUS.*

Very rare, principally in autumn.

303. *PHALAROPUS HYPERBOREUS.*

One shot in November 1837, two during the next quarter of a century, and a fourth in May 1870.

304. *RALLUS AQUATICUS.*

Caught in small numbers every year.

305. *CREX PRATENSIS.*

Not uncommon, principally in May and September.

306. *CREX PORZANA.*

One in May and a couple in August on an average.

307. *CREX PARVA*.

One shot in April 1854.

308. *CREX BAILLONI*.

One caught in May some years ago.

309. *GALLINULA CHLOROPUS*.

Not more than ten examples caught during the last half-century, most of them in the throstle-nets.

310. *FULICA ATRA*.

About half a dozen shot during the last half-century.

311. *PODICEPS CRISTATUS*.

Very rare, by no means met with every year.

312. *PODICEPS RUBRICOLLIS*.

Very rare in spring, commoner in autumn.

313. *PODICEPS CORNUTUS*.

Very rare in spring, but the commonest Grebe in autumn ; often seen in winter.

314. *PODICEPS NIGRICOLLIS*.

Only once shot.

315. *PODICEPS MINOR*.

Rare in April and May, commoner in August and September.

316. *CYGNUS OLOR*.

One shot in February 1881, and one many years before.

317. *CYGNUS MUSICUS*.

A regular winter visitor.

318. *CYGNUS BEWICKI*.

A very rare winter visitor.

319. *ANSER CINEREUS*.

Passes over in spring and autumn.

320. *ANSER SEGETUM*.

The commonest Goose in spring and autumn.

321. *ANSER BRACHYRHYNCHUS*.

Three shot during the last half-century.

322. *ANSER ALBIFRONS.*

Two shot during the last half-century.

323. *ANSER MINUTUS.*

One shot about half a century ago.

324. *ANSER HYPERBOREUS.*

Many white Geese with black quills seen, but none shot.

325. *ANSER BRENTA.*

Regular winter visitor.

326. *ANSER LEUCOPSIS.*

Two shot during the last fifty years, others seen.

327. *ANSER BOSCHAS.*

A few every spring and autumn, and in hard winters.

328. *ANAS ACUTA.*

Half a dozen during the last fifty years.

329. *ANAS STREPERA.*

Once shot during the last half-century.

330. *ANAS PENELOPE.*

Common in hard winters.

331. *ANAS CIRCIA.*

Three shot during the last half-century.

332. *ANAS CRECCA.*

A few in spring and autumn.

333. *ANAS CLYPEATA.*

One shot many years ago.

334. *TADORNA CORNUTA.*

A few in winter and autumn.

335. *FULIGULA NIGRA.*

Common in hard winters.

336. *FULIGULA FUSCA.*

Common in hard winters.

337. *FULIGULA PERSPICILLATA.*

One shot in October 1851.

338. *FULIGULA MARILA*.
Common in hard winters.
339. *FULIGULA CRISTATA*.
In hard winters, but very rare.
340. *FULIGULA FERINA*.
In hard winters, but very rare.
341. *FULIGULA NYROCA*.
One caught about fifty years ago.
342. *FULIGULA CLANGULA*.
Common in hard winters.
343. *FULIGULA GLACIALIS*.
A regular winter visitor.
344. *SOMATERIA MOLLISSIMA*.
A regular winter visitor.
345. *SOMATERIA SPECTABILIS*.
One shot in January 1879.
346. *SOMATERIA STELLERI*.
Four shot during the last half-century.
347. *MERGUS MERGANSER*.
Common in hard winters.
348. *MERGUS SERRATOR*.
Very common in hard winters.
349. *MERGUS ALBELLUS*.
In hard winters, but very rare.
350. *PHALACROCORAX CARBO*.
In small numbers in winter.
351. *PHALACROCORAX GRACULUS*.
In very small numbers in winter.
352. *SULA BASSANA*.
Occasionally met with all the year round.
353. *LARUS GLAUCUS*.
In winter, but very rare.

354. *LARUS LEUCOPTERUS.*

One or two in most winters.

355. *LARUS MARINUS.*

Common from late autumn to early spring.

356. *LARUS FUSCUS.*

Rare; principally met with in autumn.

357. *LARUS AFFINIS.*

One shot in August 1878, and a second in October 1888.

358. *LARUS ARGENTATUS.*

The commonest Gull on the island; used to breed on Sandy Island eighty years ago.

359. *LARUS CANUS.*

Common.

360. *LARUS TRIDACTYLUS.*

Very common in winter.

361. *LARUS ICHTHYAËTUS.*

One shot many years ago.

362. *LARUS RIDIBUNDUS.*

In small numbers, principally in autumn.

363. *LARUS BONAPARTII.*

One shot in the winter of 1845.

364. *LARUS MINUTUS.*

Common in autumn.

365. *LARUS SABINI.*

One shot in October 1847, another in October 1883.

366. *LARUS ROSSI.*

One shot in February 1858.

367. *LARUS EBURNEUS.*

One or two believed to have been seen.

368. *STERNA CANTIACA.*

Very common in spring from the last half of April and in autumn.

369. *STERNA DOUGALLI.*

Two shot during the last half-century.

370. STERNA ARCTICA.

Common in May and August.

371. STERNA HIRUNDO.

Common in spring from the last half of April and in autumn.

372. STERNA MINUTA.

Very rare; none seen for ten years or more.

373. STERNA CASPIA.

One shot in June 1880; occasionally seen passing over.

374. STERNA ANGLICA.

One or two got in spring every five or six years.

375. STERNA NIGRA.

Rare in spring, less so in autumn.

376. STERCORARIUS CATARRHACTES.

Very rare.

377. STERCORARIUS POMATORHINUS.

Rather rare.

378. STERCORARIUS CREPIDATUS.

In some numbers, principally in autumn; not so common as formerly.

379. STERCORARIUS PARASITICUS.

A few in autumn, mostly young; very rare in spring.

380. FULMARUS GLACIALIS.

Irregular winter visitor.

381. PUFFINUS MAJOR.

One shot many years ago; one seen in November 1879.

382. PUFFINUS GRISEUS.

One shot in October 1888.

383. PUFFINUS ANGLORUM.

Frequent fifty years ago, now never seen.

384. OCEANODROMA LEUCORRHOA.

Very rare.

385. PROCELLARIA PELAGICA.

Very rare.

386. *COLYMBUS GLACIALIS.*

Frequent.

387. *COLYMBUS ARCTICUS.*

Frequent in winter.

388. *COLYMBUS SEPTENTRIONALIS.*

Common, except in summer.

389. *URIA TROILE.*

Common. Breeds on the island.

390. *URIA RINGVIA.*

Frequent.

391. *URIA BRUENNICHI.*

One shot many years ago.

392. *URIA GRYLLE.*

Frequent in autumn and winter.

393. *URIA MANDTI.*

An example shot in summer is supposed to belong to this species.

394. *ALCA TORDA.*

Common; a few breed.

395. *MERGULUS ALLE.*

Winter visitor, sometimes in some numbers.

396. *FRATERCULA ARCTICA.*

Occasional visitor; formerly bred on the island.

Herr Gätke's list would thus appear to make the number of species which have occurred on Heligoland rather greater than that of the recognized British birds, but an examination of the details shows that this would be by no means an accurate statement of the case.

Gätke's list includes more than forty species recognized upon evidence which would not entitle them to admission were the list made up on the same lines as the British list. A few birds are admitted on the authority of skins, of which the evidence that they were shot on Heligoland is not conclusive. Others are allowed to stand though the examples

are lost, and have only been identified years afterwards from memory. A considerable number have only been seen, not obtained, and the correctness of the identification of many of these is extremely doubtful. In addition to the forty more or less doubtful occurrences, there are no fewer than seventy-five that have only been once shot on the island, though in a few cases it is supposed that other examples have been seen near enough for identification. There still remain, however, two hundred and eighty species which have been shot more than once upon the island, and a large proportion of which pass over regularly every spring and autumn, some of them occasionally in incredibly large numbers.

Under all circumstances the facts recorded in this most interesting book are of the greatest importance; and it is to be hoped that the English translation will appear without unnecessary delay.

It is noteworthy to remark that most of the wanderers from the east have occurred in autumn, whilst the accidental visitors from the south have generally appeared in spring. This fact has been previously observed and recorded of the rare stragglers to the British Islands (Seebohm, Brit. Birds, ii. p. 318).

II.—*A short Review of the Francolins belonging to the Genera Francolinus and Pternistes.* By W. R. OGILVIE GRANT (Nat. Hist. Mus.).

(Plate I.)

THE following brief review contains a key to all the known species of Francolins. It gives also a short synonymy, which shows, so far as I know, the oldest authority for every combination of generic and specific names ever used for each species, and all references to plates, except in the case of species (such as *Francolinus francolinus*) which have been frequently figured, when the best only are quoted. The geographical range is stated in every case, and a few notes are added.

Francolinus uluensis is described as new, and the name *Francolinus sharpii* is proposed for the bird commonly known as *F. rueppelli*, G. R. Gray; the latter name, as shown in the text, being synonymous with *F. clappertoni*, Childr. *Francolinus buckleyi*, a MS. name given by Captain G. E. Shelley to two female specimens obtained by him at Accra, is provisionally put forward. The specimens differ considerably from the female of *F. coqui*, and most likely represent an allied but distinct West-African species; they may, however, be the females of *F. schlegeli*, known only from a male obtained by Heuglin at Bongo in Equatorial Africa.

The confusion of names, especially among the species of *Pternistes*, has been great, and I trust this paper may prove useful to other ornithologists who study this group of Game Birds.

Key to the Genus *Francolinus*.

- A. Both webs of the primaries with a well-defined row of rufous or buff spots.
 - a. A chestnut nuchal collar.
 - a¹. Throat black *F. francolinus*, ♂.
 - b¹. Throat white *F. francolinus*, ♀.
 - b. No chestnut nuchal collar.
 - c¹. Scapulars chestnut or chestnut and black, with white or buff ocelli. Underparts covered with white ocelli..... *F. chinensis*, ♂.
 - d¹. Scapulars black, edged with brown, with short transverse bars and spots of buff. Underparts buff, barred with black .. *F. chinensis*, ♀.
 - e¹. Scapulars black, edged with buff..... *F. pictus*, ♂ ♀.
- B. Both webs of the primaries without a well-defined row of buff spots.
 - c. With white or buff shaft-streaks on the feathers of the back and scapulars.
 - f¹. Chin and throat black.
 - a². Breast-feathers black, with heart-shaped white centres *F. lathamii*, ♂.
 - b². Breast-feathers black, with heart-shaped white centres, and margined externally with brown *F. lathamii*, ♀.
 - g¹. Chin and throat not black.
 - c². Breast and flanks whitish buff, uniformly barred with black.

- a^3 . With narrow wavy black bars *F. pondicerianus*, ♂ ♀.
 b^3 . With wider regular black bars.
 a^4 . Shoulders, wing-coverts, and the outer web of the secondaries barred with brownish grey.
 a^5 . Chest and back of the neck barred with black and white. *F. coqui*, ♂.
 b^4 . Chest and back of the neck vinaceous grey and dull chestnut, with white shaft-streaks. *F. coqui*, ♀.
 b^4 . Shoulders, wing-coverts, and the outer webs of secondaries uniform light red *F. schlegeli*, ♂.
 d^2 . Breast and flanks not barred.
 e^3 . Feathers surrounding the neck barred alternately with black and white, contrasting strongly with the rest of the plumage *F. streptophorus*, ♂ ♀.
 d^3 . Feathers surrounding the neck dark chestnut, edged on either side with white or buff.
 e^4 . Breast and underparts without chestnut spots.
 e^5 . Size larger; wing ca. 6.5 *F. sephæna*, ♂ ♀.
 d^5 . Size smaller; wing ca. 5.6 *F. granti*, ♂ ♀.
 d^4 . Most of the feathers of the breast and underparts with an oblong dark chestnut spot at the extremity of the shaft.
 e^5 . Size larger; wing 6.5 *F. spilogaster*, ♂.
 f^5 . Size smaller; wing 5.7 *F. kirki*, ♂ ♀.
 e^3 . No collar of feathers contrasting with the rest of the plumage surrounds the neck.
 e^4 . Underparts uniform buff *F. albogularis*, ♂ ♀.
 f^4 . Underparts with various markings.
 g^5 . Throat white, or white more or less spotted with black, and not circumscribed by a marked black line.
 a^6 . Throat equally spotted all over with round black spots. *F. spilolæmus*, ♂ ♀.
 b^6 . Throat spotted on the edges with black; sometimes the

middle feathers are in addition edged with black.

- a*⁷. Middle of breast and belly pale buff, with black shaft-stripes.

*a*⁹. Nape rufous buff *F. gutturalis*, ♂ ♀.

*b*⁸. Nape dusky grey *F. finschi*, ♀.

- b*⁷. Middle of breast and belly pale buff, with irregular arch-shaped black bars, giving it an ocellated appearance.

*c*⁸. Inner webs of the primaries brown, more or less mottled with rufous *F. africanus*, ♂ ♀.

*d*⁸. Inner webs of the primaries mostly chestnut. *F. uluensis*, ♂.

- h*⁶. Throat white, neither spotted with black nor surrounded by a black line; feathers of the upper back chestnut in the middle, variegated with black and margined with grey *F. castaneicollis*, ♀.

- i*³. Throat pure white, circumscribed by a marked black line.

*c*⁶. The black and white superciliary stripes meet at the back of the head, and are confluent on the nape *F. levaillanti*, ♂ ♀.

- d*⁶. The black and white superciliary stripes do not meet at the back of the head, but continue down the sides of the neck.

*c*⁷. Upper back and nape with a large rufous chestnut patch spotted with black. *F. elgonensis*, ♀.

- d*⁷. Upper back like the rest of the upper parts: only nape rufous.

*e*⁸. Lower part of breast and belly rich buff, streaked with chestnut and dotted with black. *F. gariepensis*, ♂ ♀.

- f*^a. Lower breast and belly buff, almost immaculate *F. jugularis*, ♂ ♀.
- g*^a. Lower breast and belly whitish, with black V-shaped bars *F. shelleyi*, ♂.
- k*². Throat bright rufous chestnut; feathers of underparts white, edged on either side with blackish-brown *F. gularis*, ♂ ♀.
- d*. None of the feathers of the upper surface have white shaft-streaks. (In *F. erckeli* a few of the outer scapulars have buff shafts.)
- h*¹. Whole of the underparts narrowly barred with black and white *F. adspersus*, ♂ ♀.
- i*¹. Underparts not barred.
- e*². Inner webs of the primaries pale buff, or brown, barred or freckled with buff.
- f*². Chest mixed with rufous.
- g*⁴. Underparts with rufous shaft-streaks; inner webs of primaries freckled with rufous *F. griseostriatus*, ♂.
- h*⁴. Each feather of the underparts with a black racket-shaped shaft-streak; inner webs of primaries with irregular longitudinal or transverse buff stripes.. *F. bicalcaratus*, ♂ ♀.
- g*³. Chest not mixed with rufous.
- i*⁴. Greater part of the inner webs of the primaries uniform buff; feathers of the chest buff, with a wide brownish-black stripe down the middle of each.
- F*. Top of the head and ground-colour of the upper parts reddish or olive brown, feathers of the mantle widely margined all round with whitish buff *F. clappertoni*, ♂ ♀.
- m*⁵. Top of the head and ground-colour of the rest of the upper parts rich dark brown; feathers of the mantle narrowly margined on the sides with white *F. gedgii*, ♂.

- k*⁴. Inner webs of primaries freckled or dotted with buff; underparts strongly striped with brownish black on a white or buff ground.
- n*⁵. On a white ground. *F. hartlaubi*.
- o*⁵. On a buff ground. *F. icterorhynchus*, ♂ ♀.
- l*⁴. Inner webs of primaries with longitudinal rufous or buff stripes; feathers on the chest dark brown, narrowly margined with buffy white *F. sharpii*, ♂ ♀.
- f*². Inner webs of primaries uniform dark brown, sometimes slightly dotted with buff towards the marginal extremity.
- h*³. Throat spotted with black.
- m*⁴. Lower back and scapulars blackish brown, each feather narrowly margined and vermiculated with white. *F. capensis*, ♂ ♀.
- n*⁴. Lower back and scapulars reddish or olive brown, finely mottled with black.
- p*⁵. Breast and belly white, with V-shaped black marks *F. natalensis*, ♂ ♀.
- q*⁵. Breast and belly white, with a heart-shaped black mark on each feather *F. hildebrandti*, ♂.
- i*³. Throat not spotted with black.
- o*⁴. Underparts bright rust-colour, dotted with buff; flight-feathers without a clear spot at the extremity; tail-feathers and outer webs of the wings brown, vermiculated with rufous buff *F. hildebrandti*, ♀.
- p*⁴. Underparts clear ochre; isolated feathers with white borders, and some of the breast-feathers spotted with black at the tip; flight-feathers with a clear spot at the extremity; tail-feathers and outer webs of the wings rust-red, barred with dark brown. *F. fischeri*, ♀.
- q*⁴. Underparts bright reddish chestnut; (the basal half of the breast-

feathers barred with black in some specimens). Primaries and outer tail-feathers dark brown. Lesser and median wing-coverts with a round black subterminal spot

F. oculus, ♂ ♀.

*r*⁴. Underparts neither rust-coloured nor ochre.

*r*⁵. Feathers of the back of the neck brownish or blackish, edged with white or grey.

*e*⁶. Breast-feathers grey or buff, shading into brown towards the shaft.

*e*⁷. Margins of the feathers of the middle of the breast and belly dull grey *F. schuetti*, ♂.

*f*⁷. Margins of the feathers of the middle of the breast and belly pale buff *F. schuetti*, ♀.

*f*⁸. Breast-feathers whitish buff, with dark shafts *F. squamatus*, ♂ ♀.

*g*⁶. Breast-feathers dark brown, with a wide submarginal band on each side *F. ahantensis*, ♂ ♀.

*s*⁵. Feathers of the back of the neck chestnut, edged with white or grey.

*h*⁶. Bill red; all the feathers of the underparts with wide chestnut stripes down the centre *F. jacksoni*, ♂.

*i*⁶. Bill black; all the feathers of the underparts with an oblong spot at the extremity . *F. erckeli*, ♂ ♀.

1. FRANCOLINUS FRANCOLINUS.

The Francolin, Edw. Glean. Nat. Hist. v. p. 75, pl. 246 (1758).

Tetrao francolinus, Linn. S. N. i. p. 275 (1766).

Perdix francolinus, Temm. Pig. et Gall. iii. pp. 340, 723 (1815).

Attagen francolinus, Keys. & Blas. Wirbelth. Eur. p. 65 (1840).

Chætopus francolinus, Blasius, List B. Europe, p. 16 (1862).

Francolinus vulgaris, Steph. in Shaw's Gen. Zool. xi. p. 319 (1819); Dresser, B. Europe, vii. p. 123, pl. 473 (1876); Hume & Marsh. Game B. Ind. ii. p. 9, pl. (1879).

Perdix hepburnii, Gray, Ill. Ind. Zool. pl. 55. fig. 1 (1830-32).

Perdix hepburnii, var. *pallida*, Gray, Ill. Ind. Zool. pl. 55. fig. 2 (1830-32).

Francolinus vulgaris? v. *brevipes*, Hodgs. in Gray's Zool. Misc. p. 85 (1844).

Francolinus asiæ, Bonap. C. R. xlii. p. 882 (1856).

Francolinus henrici, Bonap. C. R. xlii. p. 882 (1856).

Francolinus tristriatus, Bonap. C. R. xlii. p. 882 (1856).

It is to be remarked that Indian specimens, although absolutely identical in plumage with those from Cyprus, Asia Minor, and Persia, are considerably smaller in size.

Indian specimens: wing 5·7-6·0 inches.

Cyprus, &c., specimens: wing 6·6-6·9 inches.

Hab. From Cyprus, Palestine and Asia Minor, through Persia eastwards to Northern India.

2. FRANCOLINUS CHINENSIS.

La Perdrix de la Chine, Bris. Orn. i. p. 234, pl. 28 A. fig. 1 (1760).

Tetrao chinensis, Osbeck, Voy. en Chine, ii. p. 326 (1771).

Francolinus chinensis, Gray, Hand-l. B. ii. p. 266, no. 9681 (1870); Gray, Fasc. B. China, pl. 7 (1871); Hume & Marsh. Game B. Ind. ii. p. 27, pl. (1879).

Perdix sinensis, Spalowsk. Vög. pt. ii. p. 16, pl. 31 (1791).

Francolinus sinensis, Blyth, Cat. B. Mus. As. Soc. p. 251 (1849).

Francolin de l'Isle de France, Sonnerat, Voy. aux Indes, ii. p. 166, pl. 97 (1782).

Pintado Partridge, Lath. Gen. Syn. ii. p. 761 (1783).

Tetrao pintadeanus, Scop. Del. Flor. et Faun. Ins. pt. ii. p. 93 (1786).

Francolinus pintadeanus, Gray, List Birds, pt. v. Gall. p. 54 (1867).

Francolinus pintadeus, Blyth, Cat. B. Mus. As. Soc. p. 250 (1849).

Tetrao madagascariensis, Gmel. S. N. i. p. 756 (1788).

Francolinus madagascariensis, Newton, Ibis, 1861, p. 274.

La Perdrix perlée, Buff. Hist. Nat. ii. p. 446 (1771).

Pearled Partridge, Lath. Gen. Syn. ii. p. 772 (1783).

Tetrao perlatus, Gmel. S. N. i. p. 758 (1788).

Perdix perlata, Lath. Ind. Orn. ii. p. 648 (1790); Vieill. Gal. Ois. ii. p. 41, pl. 213 (1825).

Francolinus perlatus, Steph. in Shaw's Gen. Zool. xi. p. 325 (1819).

Perdix (Francolinus) maculatus, Gray, Zool. Misc. p. 2 (1831).

Perdix phayrei, Blyth, J. A. S. Beng. xii. p. 1011 (1843).

Francolinus phayrei, Blyth, J. A. S. Beng. xxiv. p. 480 (1855).

Hab. Indo-Chinese subregion; Mauritius (introduced).

3. FRANCOLINUS PICTUS.

Perdix picta, Jard. & Selb. Ill. Orn. pl. 50.

Francolinus pictus, Gray, List Gall. B. iii. p. 36 (1844); Hume & Marsh. Game B. Ind. ii. p. 19, pl. (1879).

Hab. Central and part of Southern India and Ceylon.

3 A. FRANCOLINUS INTERMEDIUS.

Francolinus intermedius, Butler, Str. F. v. p. 211 (1877).

Hybrid between *F. pictus* and *F. vulgaris*, Hume & Marsh. Game B. Ind. ii. p. 25, pl. (1879).

Hab. Deesa; North-western India.

4. FRANCOLINUS LATHAMI.

Francolinus lathami, Hartl. J. f. O. 1854, p. 210.

Peliperdix lathami, Bonap. C. R. xlii. p. 882 (1856).

Perdicideus lathami, Heine, J. f. O. 1860, p. 198.

Francolinus peli, Temm. Bijdr. tot de Dierk. i. p. 50, pl. (1854).

Hab. Loango Coast, Gaboon, Gold Coast, Liberia, Sierra Leone, Casamanze and Senegambia.

5. FRANCOLINUS PONDICERIANUS.

Pondicherry Partridge, Lath. Gen. Syn. ii. p. 774 (1783).

Tetrao pondicerianus, Gmel. Syst. Nat. i. p. 760 (1788).

Perdix pondiceriana, Temm. Pig. et Gall. iii. pp. 332, 722 (1815).

Francolinus pondicerianus, Steph. in Shaw's Gen. Zool. xi. p. 321 (1819).

Ortygornis pondiceriana, Hume, Nests & Eggs, p. 542 (1873).

Perdix ponticeriana, Lath. Ind. Orn. ii. p. 649 (1790); Temm. Pl. Col. v. pl. 32 (1823).

Francolinus ponticerianus, Gray, List Gall. B. iii. p. 35 (1844).

Ortygornis ponticeriana, Jerd. B. Ind. ii. p. 569 (1863); Hume & Marsh. Game B. Ind. ii. p. 51, pl. (1879).

Perdix orientalis, Gray, Ill. Ind. Zool. pl. 56. fig. 2 (1830-32).

Hab. India, Ceylon, Afghanistan and Beluchistan; Mascarennhas Is. (introduced).

6. *FRANCOLINUS COQUI*.

Perdix coqui, Smith, Rep. Exp. Centr. Afr. p. 55 (1836).

Francolinus coqui, Böhm, J. f. O. 1882, p. 194.

Francolinus subtorquatus, Smith, Ill. Zool. S. Afr. pl. 15 (1838).

Chatopus subtorquatus, Bonap. C. R. xlii. p. 882 (1856).

Scleroptera subtorquata, Gurney, in Anderss. B. Damaral. p. 246 (1872).

Francolinus semitorquatus, Ayres, Ibis, 1880, p. 110.

Francolinus schlegeli, Bocage (nec Heugl.) Orn. Angola, p. 407 (1881).

Francolinus stuhlmanni, Reich. J. f. O. 1889, p. 270.

Hab. East, South, and South-west Africa.

7. *FRANCOLINUS SCHLEGELI*.

Francolinus schlegelii, Heugl. J. f. O. 1863, p. 275; Heugl. Orn. N.O.-Afr. ii. p. 898, pl. xxx. (1873).

Hab. Bongo, Equatorial Africa.

In Captain Shelley's collection there are two female specimens, obtained by him at Accra in 1872 and provisionally named *Francolinus buckleyi*, which may possibly belong

to the present species. They differ from the female of *F. coqui* in having the black lines over the eye and round the throat almost obsolete, the greater part of the basal two thirds of the inner primaries and secondaries chestnut, and the general tone of the top of the head and upper parts dull grey, with only narrow bars of rufous buff here and there. Possibly these birds may represent a distinct species, but in the absence of male specimens it is impossible to say.

8. *FRANCOLINUS STREPTOPHORUS*.

Francolinus streptophorus, Grant, Ibis, 1891, p. 126.

Hab. South foot of Mt. Elgon, Central East Africa.

9. *FRANCOLINUS SEPHÆNA*.

Perdix sephæna, Smith, Rep. Exp. Centr. Afr. p. 55 (1836).

Francolinus sephæna, Newton, Ibis, 1868, p. 269.

Francolinus pileatus, Smith, Ill. Zool. S. Afr. pl. 14 (1838).

Chatopus pileatus, Bonap. C. R. xlii. p. 882 (1856).

Scleroptera pileata, Gurney, in Anderss. B. Damaral. p. 247 (1872).

Hab. South Africa: on the east from the Transvaal to the Zambesi, and westwards to the northern part of Damaraland and to the north.

10. *FRANCOLINUS GRANTI*.

Francolinus granti, Hartl. P. Z. S. 1865, p. 665, pl. 39. fig. 1.

Francolinus pileatus, Rüpp. (nec Smith) Vög. N.O.-Afr. p. 106 (1845).

Francolinus roxuma, Gray, List Birds, pt. v. Gall. p. 52 (1867) [part ♂].

Francolinus schoanus, Heugl. Orn. N.O.-Afr. ii. p. 890, pl. 29. fig. 2 (1873).

Francolinus ochrogaster, Hartl. J. f. O. 1882, p. 327.

Hab. East Africa: from about 3° S. to 10° N. lat.

11. *FRANCOLINUS SPILOGASTER*.

Francolinus spilogaster, Salvadori, Ann. Mus. Civ. Genov. vi. p. 541 (1888).

To be distinguished from *F. kirki* only by its greater size.

Hab. North-east Africa: Harar, Shoa.

12. *FRANCOLINUS KIRKI*.

Francolinus kirki, Hartl. P. Z. S. 1867, p. 827; Finsch & Hartl. Ost-Afr. p. 588, pl. x. fig. 1 (1870).

Francolinus rovuma, Gray, List Birds, pt. v., Gall. p. 52 (1867).

Francolinus granti, Nicholson, P. Z. S. 1878, p. 359; Shelley, P. Z. S. 1881, p. 597.

Hab. East Africa: from the Rovuma River to Dar-es-Salaam and Zanzibar Is.

13. *FRANCOLINUS ALBOGULARIS*.

Francolinus albogularis, Gray, List Gall. B. iii. p. 35 (1844).

Chætopus albogularis, Bonap. C. R. xlii. p. 882 (1856).

Hab. West Africa: Gambia and Casamanze.

14. *FRANCOLINUS SPILOLEMUS*.

Francolinus psilolemus, Gray, List Birds, pt. v. Gall. p. 50 (1867).

Hab. Shoa.

15. *FRANCOLINUS GUTTURALIS*.

Perdix gutturalis, Rüpp. N. Wirbelth. p. 13 (1835).

Francolinus gutturalis, Rüpp. N.O.-Afr. p. 103, pl. 40 (1845).

Chætopus gutturalis, Bonap. C. R. xlii. p. 882 (1856).

Scleroptera gutturalis, Speke, Ibis, 1860, p. 248.

Hab. North-east Africa: Bogos, Abyssinia, Somali-land (*fide* Speke).

16. *FRANCOLINUS FINSCHI*.

Francolinus finschi, Bocage, Orn. Angola, p. 406 (1881).

Hab. South-western Africa: Benguela.

17. *FRANCOLINUS AFRICANUS*.

Pearled Partridge, var. A, Lath. Gen. Syn. ii. p. 773 (1783).

Perdix afra, Lath. (nec P. L. S. Müll.) Ind. Orn. ii. p. 648 (1790).

Francolinus afer, Gray, List Gall. B. iii. p. 34 (1844).

?*Pternistes* (*Scleroptila*) *afra*, Blyth, Cat. B. Mus. As. Soc. p. 250 (1849).

Chætopus afer, Bonap. C. R. xlii. p. 882 (1856).

Francolinus africanus, Steph. in Shaw's Gen. Zool. xi. p. 323 (1819).

As the majority of authors consider the *Pternistes*, or Bare-throated Francolins, as merely a subgenus of *Francolinus*, I deem it advisable to adopt the later name *F. africanus*, Steph., for this species, in preference to *Perdix afra*, Lath., as that name (*Tetrao afer*) had already been used by P. L. S. Müller for a species of *Pternistes*.

Hab. South Africa : Transvaal and Cape Colony.

18. *FRANCOLINUS ULUENSIS*, sp. n.

I was at first somewhat doubtful whether two specimens collected by Mr. F. J. Jackson at Machakos, in the Ulu country, should be referred to *F. gutturalis* or not. One would certainly expect to find them distinct from the Abyssinian birds, and on comparing them with typical specimens from Abyssinia the differences, although few, seem sufficient to justify their separation.

Both specimens are males, with fully-developed spurs, and they differ from *F. gutturalis* in the two following points. On the side of the neck, between the continuations of the rufous-buff superciliary and cheek-stripes, and behind the ear-coverts, lies a well-marked triangular patch, an inch or more in length, of white feathers with black tips. There is no trace of this in *F. gutturalis*, but it is equally distinct in *F. afer* from S. Africa. Again, the feathers of the breast and belly, instead of having black shaft-stripes, are covered with irregular arch-shaped black bars, which give these parts an ocellated appearance much as in *F. afer*. The tarsus is longer than in *F. gutturalis*, 1·6 as against 1·4 inches.

Total length 12·0 inches, wing 6·5, tail 2·9, tarsus 1·6.

Hab. East Africa : Ulu country.

19. *FRANCOLINUS CASTANEICOLLIS*.

Francolinus castaneicollis, Salvadori, Ann. Mus. Civ. Genov. vi. p. 542 (1888) ; Grant, Ibis, 1890, p. 350, pl. xi.

Hab. North-east Africa : Lago, Ciar-Ciar, Shoa.

20. FRANCOLINUS LEVAILLANTI.

Perdix levaillantii, Valenc. Dict. Sci. Nat. xxxviii. p. 441 (1825).

Perdix vaillantii, Temm. Pl. Col. v. pl. 33 (1829).

Francolinus levaillanti, Gray, List Gall. B. iii. p. 33 (1844); Smith, Ill. Zool. S. Afr. pl. 85 (1849).

Pternistes (Scleroptila) levaillanti, Blyth, Cat. B. Mus. As. Soc. p. 250 (1849).

Chætopus levaillanti, Bonap. C. R. xlii. p. 882 (1856).

Perdix levaillantoides, Smith, Rep. Exp. Cent. Afr. p. 55 (1836).

No doubt Smith intended the name *P. levaillantoides* to apply to the bird which he afterwards named *F. gariensis*; but from the description it is clear that the specimen described belonged to *F. levaillanti*.

Hab. South Africa: Transvaal, Orange Free State, Natal, Cape Colony.

21. FRANCOLINUS ELGONENSIS.

Francolinus elgonensis, Grant, Ibis, 1891, p. 126.

Hab. Central East Africa: Mount Elgon, 11,000 feet.

22. FRANCOLINUS GARIEPENSIS.

Francolinus gariensis, Smith, Ill. Zool. S. Afr. pls. 83 [♂] & 84 [♀] (1843).

Chætopus gariensis, Bonap. C. R. xlii. p. 882 (1856).

Hab. Eastern South Africa: Transvaal west of the Drakenberg Mountains.

23. FRANCOLINUS JUGULARIS.

Francolinus gariensis, auct. (nec Smith).

Scleroptera gariensis, Gurney, in Anderss. B. Damaral. p. 245 (1872).

Francolinus jugularis, Büttikofer, Notes Leyd. Mus. xi. pp. 76, 77, pl. iv. (1889).

Hab. Western South Africa: from Gt. Namaqualand northwards to Angola.

24. FRANCOLINUS SHELLEYI.

Francolinus gariensis, auct. (nec Smith).

Francolinus shelleyi, Grant, Ibis, 1890, p. 348.

Hab. Eastern South Africa: east of the Drakenberg Mts., Natal, Swaziland, and the Umfuli River. ? East Africa: Zanzibar (*Fischer*).

25. *FRANCOLINUS GULARIS*.

Perdix gularis, Temm. *Pig. et Gall.* iii. pp. 401, 731 (1815); Gray, *Ill. Ind. Zool.* pl. 56. fig. 1 (1830-32).

Francolinus gularis, Gray, *List Gall. B.* iii. p. 34 (1844).

Ortygornis gularis, Jerd. *B. Ind.* ii. p. 573 (1863); Hume & Marshall, *Game B. Ind.* ii. p. 59, pl. (1879).

Perdix monogrammica, Less. *Traité d'Orn.* p. 504 (1831).

Hab. Northern India: Terai region skirting the southern base of the Himalayas from Pilibhit to Sadiya in Eastern Assam, Cachar, and Tipperah.

26. *FRANCOLINUS ADSPERSUS*.

Francolinus adpersus, Waterh. in Alexander's *Exp.* ii. p. 267, pl. [imm.].

Chætopus adpersus, Bonap. *C. R.* xlii. p. 882 (1856).

Scleroptera adpersa, Gurney, in Anderss. *B. Damaral.* p. 247 (1872).

Hab. Western South Africa: from the Orange River to the Cunene, and inland to Lake Ngami.

27. *FRANCOLINUS GRISEOSTRIATUS*.

Francolinus griseostriatus, Grant, *Ibis*, 1890, p. 349, pl. x.

Hab. West Africa: River Quanza*.

28. *FRANCOLINUS BICALCARATUS*.

Tetrao bicalcaratus, Linn. *S. N.* i. p. 277 (1766).

Perdix bicalcarata, Lath. *Ind. Orn.* ii. p. 643 (1790).

Francolinus bicalcaratus, Gray, *List Gall. B.* iii. p. 33 (1844).

Chætopus bicalcaratus, Bonap. *C. R.* xlii. p. 882 (1856).

Senegal Partridge, Lath. *Gen. Syn.* ii. p. 757 (1783).

Perdrix du Sénégal, D'Aubent. *Pl. Enl.* ii. pl. 47 (no. 137).

Francolinus senegalensis, Steph. in Shaw's *Gen. Zool.* xi. p. 330 (1819).

Didymacis senegalensis, Reichenb. *Handb. Gall.* fig. 1768 (1853).

* Given by mistake as "River Congo" in the original description.

Perdix adansoni, Temm. Pig. et Gall. iii. pp. 305 & 717 (1815).

Chætopus adansoni, Swains. West Afr. ii. p. 217 (1837).

Francolinus albiscapus, Reichenb. Handb. Gall. figs. 1753 & 1754 (1853).

Hab. West Africa : from the Niger to the Mogador Coast.

29. *FRANCOLINUS CLAPPERTONI*.

Francolinus clappertoni, Children, Denh. & Clapperton's Trav. App. xxi. p. 198 (1826); Gray, Gen. B. iii. p. 505, pl. 130 (1846).

Perdix clappertoni, Cretzsch. Rüpp. Atl. p. 13, pl. 9 (1826).

Chætopus clappertoni, Bonap. C. R. xlii. p. 882 (1856).

Francolinus rüppelli, Gray, List Gall. B. iii. p. 33 (1844) [synonymy only].

Hab. Kordofan, Darfur, and Bornu.

30. *FRANCOLINUS GEDGII*.

Francolinus gedgii, Grant, Ibis, 1891, p. 124.

Hab. Central East Africa : Elgon Plains.

31. *FRANCOLINUS HARTLAUBI*.

Francolinus hartlaubi, Bocage, J. Sc. Lisb. ii. p. 350 (1869).

Hab. Western South Africa : Benguela.

32. *FRANCOLINUS ICTERORHYNCHUS*.

Francolinus icterorhynchus, Heugl. J. f. O. 1863, p. 275; Heugl. Orn. N.O.-Afr. ii. p. 894, pl. 29. fig. 1 (1873).

Hab. Central Africa : Bongo, Djur, Kosanga, and west of Albert Nyanza.

33. *FRANCOLINUS SHARPII*, sp. n.

Francolinus rüppelli, Gray, List Gall. B. iii. p. 33 (1844) [Abyssinian specimens].

Chætopus rüppellii, Bonap. C. R. xlii. p. 882 (1856).

Francolinus clappertoni, Des Murs in Lefebvre's Voy. en Abyss. p. 146, pl. xii. (1845-50); Antin. e Salvad. Cat. Ucc. p. 134 (1873); Salvad. Ann. Mus. Civ. Genov. xxi. p. 211 (1884).

In 1826 Children described *Francolinus clappertoni* in Denham and Clapperton's 'Travels,' App. xxi. p. 198. The

type was obtained in Bornu (see Denham's 'Narrative,' p. 320), and is preserved in the Natural History Museum. There is a second specimen in the same collection which was obtained by Mr. Petherick in Kordofan.

In 1826 Cretzschmar figured and redescribed the same species in Rüppell's 'Atlas,' p. 13, pl. 9, under the name of *Perdix clappertoni*, from six specimens obtained by Rüppell in Kordofan; who also recorded the bird from Darfur and Bornu. The figure is a good one, and shows the distinctive characters of the species at a glance.

In 1844 Gray published the third part of his 'List of the specimens of Birds in the British Museum,' and, for some inexplicable reason, he imagined that Cretzschmar's figure represented a species distinct from *F. clappertoni*, Children, so he renamed the former *Francolinus rüppelli* (p. 33), and in 1846 figured the latter type as *F. clappertoni*, in the 'Genera of Birds,' iii. p. 505, pl. 130.

Anyone comparing these two figures, Cretzschmar's in 'Rüpp. Atl.' pl. 9, and Gray's in 'Gen. B.' pl. 130, will see at once that they represent the same species.

The name *F. rüppelli* is therefore simply a synonym of *F. clappertoni*, though by some mistake it has been applied by the majority of authors to the Abyssinian bird, which is really a very distinct species, and has never possessed a name, though it is well figured by Des Murs in Lefebvre's 'Voy. en Abyss.' p. 146, pl. xii. (1845-50). I therefore propose the name of *F. sharpii* for the Abyssinian bird, in honour of my colleague, Dr. R. Bowdler Sharpe.

Hab. North-east Africa: Bogosland, Abyssinia, and Shoa.

34. FRANCOLINUS CAPENSIS.

Cape Partridge, Lath. Gen. Syn. ii. p. 756 (1783).

Tetrao capensis, Gmel. Syst. Nat. i. p. 759 (1788); Forst. Desc. Anim. p. 400 (1844), and Icon. ined. pl. 135.

Perdix capensis, Lath. Ind. Orn. ii. p. 643 (1790).

Francolinus capensis, Gray, List Gall. B. iii. p. 34 (1844).

Pternistes (Clamator) capensis, Blyth, Cat. B. Mus. As. Soc. p. 250 (1849).

Chætopus capensis, Bonap. C. R. xlii. p. 882 (1856).

Perdix clamator, Temm. Pig. et Gall. iii. pp. 298, 717 (1815).

Francolinus clamata, Steph. in Shaw's Gen. Zool. xi. p. 327 (1819).

Francolinus clamator, Layard, B. S. Afr. p. 268 (1867).

Perdix (Francolinus) clamosus, Less. Traité d'Orn. p. 504, pl. 87. fig. 2 (1831).

Perdix nudicollis, Temm. Pig. et Gall. iii. pp. 317 & 720 (1815) [part].

Hab. South Africa: Cape Colony, extending to the Orange River, and Robben Island.

35. *FRANCOLINUS NATALENSIS*.

Francolinus natalensis, Smith, S. Afr. Journ. (2) p. 48 (1833); Smith, Ill. Zool. S. Afr. pl. 13 (1838).

Chætopus natalensis, Bonap. C. R. xlii. p. 882 (1856).

Perdix lechoho, Smith, Rep. Exp. Cent. Afr. p. 54 (1836).

Hab. Eastern South Africa: Matabeleland, Transvaal, Swaziland, Natal.

36. *FRANCOLINUS HILDEBRANDTI*.

Francolinus (Scleroptera) hildebrandti, Cabanis, J. f. O. 1878, p. 206, and 1879, p. 243, pl. iv. fig. 2; Grant, Ann. Mag. N. H. ix. p. 144 (1891).

Francolinus altumi, Fischer & Reich. J. f. O. 1884, p. 179, pl. ii.

The last collection sent home by Mr. F. J. Jackson contains an immature specimen changing from the female or "*hildebrandti*" plumage into that of the male or "*altumi*." This specimen in many points agrees well enough with Dr. Reichenow's description of *F. fischeri*, but the wings and tail are brown, mottled with rufous buff, instead of clear rust-red, barred with dark brown as in the latter.

Hab. East Africa: Masai-land, Kilimanjaro and Kikuyu.

37. *FRANCOLINUS FISCHERI*.

Francolinus fischeri, Reich. J. f. O. 1887, p. 51.

Hab. Ussure, Victoria Nyanza.

38. *FRANCOLINUS OCULEUS*.

Perdix oculea, Temm. Pig. et Gall. iii. pp. 408, 733 (1815);
Gray, Ill. Ind. Zool. i. pl. 58 (1830-32).

Galloperdix oculea, Bonap. C. R. xlii. p. 882 (1856).

Caloperdix oculea, Blyth, Ibis, 1867, p. 160.

Rollulus oculeus, Gray, List B. pt. v. Gall. p. 65 (1867).

Caloperdix oculeus, Hume & Marsh, Game B. ii. p. 101,
pl. (1879).

Calloperdix oculeus, Hume, Str. F. viii. p. 69 (1879).

Tetrao ocellatus, Raffl. Trans. Linn. Soc. xiii. p. 322 (1822).

Cryptonyx ocellatus, Vig. Zool. Journ. iv. p. 349 (1829).

Rollulus ocellatus, Gray, List of Gall. iii. p. 43 (1844).

Caloperdix ocellata, Blyth, B. Burm. p. 151 (1875).

Hab. Tenasserim, Malacca, Sumatra, Java, Borneo.

Specimens from Sumatra and Java are, on the whole, less brightly coloured on the underparts than Malaccan birds, and the chest, even in perfectly adult and old specimens, has the basal halves of the feathers irregularly barred with black; the black feathers also of the upper back, instead of being ornamented by a white submarginal line, are irregularly barred with yellowish white. I must, however, add that a female specimen from Malacca obtained by Dr. Maingay represents an intermediate form, the breast and underparts being darker and similar to other Malayan birds, but some of the feathers of the chest are barred with black, while the markings on the upper back, though white, are disposed as transverse bars, instead of following the shape of the feathers. It is for this reason impossible to separate the two forms, which would no doubt be regarded by some as incipient species.

39. *FRANCOLINUS SCHUETTI*.

Francolinus (Scleroptera) schuetti, Cab. J. f. O. 1880,
p. 351, and 1881, pl. ii.

Hab. West Africa: Lunda, Angola. East Africa: Kili-
manjaro dist., 5000 to 6000 feet.

40. *FRANCOLINUS SQUAMATUS*.

Francolinus squamatus, Cassin, P. Ac. Philad. viii. p. 321
(1857).

Ibis. 1892. Pl. I.



NICOLINUS JACKSONI

Mintern Bros. imp.

Francolinus petiti, Bocage, J. Sc. Lisb. vii. p. 68 (1879).

Francolinus modestus, Cab. J. f. O. 1889, p. 89.

I have, without hesitation, added *Francolinus modestus*, Cab., to the synonymy of this species. Some years ago, Dr. Cabanis sent to the Natural-History Museum specimens which he believed to be new, and to which he had given the MS. name of *F. griseimarginatus*. These proved to be *F. squamatus*, Cassin.

So far as I have been able to discover, the name *F. griseimarginatus* was never published, and I have little doubt that the name *F. modestus* has since been given to these specimens, for the description agrees perfectly with the present species and the geographical range is the same.

Hab. West Africa: Loango Coast and Gaboon.

41. FRANCOLINUS AHANTENSIS.

Francolinus ahantensis, Temm. Bijdr. tot de Dierk. l. p. 49, pl. 14 (1854).

Francolinus ashantensis, Gray, List Birds, pt. v. Gall. p. 51 (1867).

Hab. West Africa: Loango Coast, Gold Coast, Liberia.

42. FRANCOLINUS JACKSONI. (Plate I.)

Francolinus jacksoni, Grant, Ibis, 1891, p. 123.

Hab. East Africa: Kikuyu Country.

43. FRANCOLINUS ERCKELI.

Perdix erckelii, Rüpp. N. Wirbelth. p. 12 (1835).

Francolinus erckelii, Des Murs in Lefebvre's Voy. en Abyss. p. 144, pl. 11 (1845-50).

Francolinus erckelii, Gray, List Gall. B. iii. p. 33 (1844).

Chætopus erkeli, Bonap. C. R. xlii. p. 882 (1856).

? *Francolinus icteropus*, Heugl. J. f. O. 1862, p. 412; Hartl. P. Z. S. 1865, p. 666, pl. 39. fig. 2.

Hab. North-east Africa: Bogos; Eastern Abyssinia to Shoa and westwards to Wogara, 2,500 to 11,000 feet.

Key to the Genus Pternistes.

- A. Feathers of the back and scapulars with dark brown shaft-stripes.
- a. Neck-feathers black, with white or pale buff margins.
- a¹. Feathers of the lower breast and belly uniform black, or black or rufous-brown with a white band down the centre, and often a blackish shaft-streak.
- a². Feathers from the gape to the cheek black (freckled with white in the females and young).
- a³. Sides of the feathers of the lower breast and belly black; with spurs. *P. nudicollis*, ♂.
- b³. Sides of the feathers of the lower breast and belly rufous brown; no spurs *P. nudicollis*, ♀.
- b². Feathers from the gape to the cheek white.
- c¹. Feathers of lower breast and belly black *P. humboldti*, ♂.
- d³. Feathers of the lower breast and belly black, with a narrow white stripe down the middle *P. humboldti*, ♀.
- b¹. Feathers of the lower breast and belly white, with a wide central band of black down the middle of each feather.
- c². Upper chest grey, each feather finely dotted towards the extremity with black; with spurs. *P. afer*, ♂.
- d². Chest brownish grey, with black shaft-stripes; no spurs *P. afer*, ♀.
- c¹. Feathers of the lower breast and belly white, finely vermiculated with black, and widely margined with chestnut.
- e². Without black shaft-streaks *P. cranchi*, ♂ ♀.
- f². With black shaft-streaks *P. boehmi*, ♂ ♀.
- d¹. Feathers of the lower breast and belly umber-brown, like those of the back, with dark shaft-streaks; feathers of the middle of the belly mottled on the sides.
- g². Edged with dark chestnut. *P. swainsoni*, ♂.
- h². Not edged with chestnut *P. swainsoni*, ♀.
- b. Neck-feathers white, with black and rufous-brown margins; under surface white, with broad rufous-brown margins and black shaft-stripes *P. rufopictus*.

B. Feathers of the back and scapulars with white shaft-stripes.

c. Feathers of the chest white, edged with brown. *P. leucoscepus*, ♂ ♀.

d. Feathers of the chest brown, shading into chestnut towards the base, and with a narrow white shaft-stripe, forming a triangular white patch, at the extremity *P. infuscatus*, ♂ ♀.

1. PTERNISTES NUDICOLLIS.

Le Gorge-nue, Buff. Hist. Nat. ii. p. 444 (1771).

Bare-necked Partridge, Lath. Gen. Syn. ii. p. 759 (1783).

Tetrao nudicollis, Bodd. Tabl. Pl. Enl. p. 11, no. 180 (1783).

Perdix nudicollis, Lath. Ind. Orn. ii. p. 644 (1790).

Pternistes nudicollis, Gray, List Gall. B. iii. p. 32 (1844).

Francolinus nudicollis, Gray, Gen. B. iii. p. 506 (1846).

Francolinus capensis, Steph. in Shaw's Gen. Zool. xi. p. 333 (1819) [part].

Hab. South Africa: Transvaal, Cape Colony.

2. PTERNISTES HUMBOLDTI.

Francolinus humboldti, Peters, MB. Berl. Akad. Wissensch. 1854, p. 134.

Pternistes humboldti, Bocage, J. f. O. 1876, p. 304; Grant, Ann. Mag. N. H. vii. p. 145 (1891).

Francolinus nudicollis, Fischer & Reich. J. f. O. 1879, p. 339.

Pternistes nudicollis, Fischer, J. f. O. 1885, p. 121; Shelley, P. Z. S. 1881, p. 597.

Francolinus (Pternistes) leucoparæus, Fischer & Reich. J. f. O. 1884, p. 263.

Pternistes leucoparæus, Fischer, J. f. O. 1885, p. 121; Matschie, J. f. O. 1889, p. 340; Reich. J. f. O. 1890, p. 77.

Hab. East Africa: from the Zambesi to the River Tana.

3. PTERNISTES AFER.

La Perdrix d'Afrique, D'Aubent. Pl. Enl. ii. pl. 48 (no. 180).

La Perdrix rouge, Buff. Hist. Nat. ii. p. 44 (1771).

Tetrao afer, Müll. S. N. Suppl. p. 129 (1776).

Red-necked Partridge, Lath. Gen. Syn. ii. p. 771 (1783).

Tetrao rubricollis, Gmel. S. N. i. p. 758 (1788).

Perdix rubricollis, Lath. Ind. Orn. ii. p. 648 (1790).

Francolinus rubricollis, Steph. in Shaw's Gen. Zool. xi. p. 335 (1819).

Pternistes rubricollis, Bocage, J. Sci. Lisb. iii. p. 175 (1871).

Perdix nudicollis, Temm. Pig. et Gall. iii. p. 317, 720 (1815) [part].

Pternistes nudicollis, Gurney in Anderss. B. Damaraland, p. 244 (1872).

Pternistes sclateri, Bocage, J. Sci. Lisb. i. p. 327, pl. vi. (1868).

Hab. Western South Africa: Mossamedes, Benguela, Angola.

4. *PTERNISTES CRANCHI*.

Perdix cranchi, Leach, in Tuckey's Narrat. Explor. River Zaire, App. p. 408 (1818).

Francolinus cranchi, Steph. in Shaw's Gen. Zool. xi. p. 336 (1819).

Pternistes cranchi, Wagl. Isis, 1832, p. 1229; Gray, List Gall. B. iii. p. 32 (1844).

Perdix punctulata, Gray, Ill. Ind. Zool. ii. pl. 43. fig. 3 (1833-4).

Arboricola punctulata, Blyth, Ibis, 1867, p. 160.

Pternistes lucani, Bocage, J. Sci. Lisb. vii. p. 68 (1879).

Hab. West Africa: Congo; Marungu Country, west of Lake Tanganyika.

5. *PTERNISTES BOEHMI*.

Francolinus cranchi, Finsch & Hartl. (*nec* Leach) Ost-Afr. p. 579, pl. ix. (1870).

Pternistes böhmi, Reich. J. f. O. 1885, p. 465.

Francolinus rubricollis, Böhm, J. f. O. 1885, pp. 39, 71.

Hab. Central East Africa: Usui, Victoria Nyanza, Unyamuesi, Unyanyembe, Ugogo.

6. *PTERNISTES SWAINSONI*.

Perdix swainsoni, Smith, Rep. Exp. Cent. Afr. p. 54 (1836).

Francolinus swainsoni, Smith, Ill. Zool. S. Afr. pl. 12 (1838).

Pternistes swainsoni, Gray, List Gall. B. iii. p. 32 (1844).

Hab. South Africa: Matabele, Transvaal, Cape Colony, Damaraland.

7. *PTERNISTES RUFOPICTUS*.

Pternistes rufopictus, Reich. J. f. O. 1887, p. 52.

Hab. Central East Africa: Wembaere, Victoria Nyanza.

8. *PTERNISTES LEUCOSCEPUS*.

* *Perdix rubricollis*, Cretzsch. (*nec* Gmel.) Rüpp. Atl. p. 44, pl. 30 (1826) [figure resembles *P. infuscatus*].

Pternistes rubricollis, Gray, List Gall. B. iii. p. 32 (1844).

Francolinus rubricollis, Gray, Gen. B. iii. p. 506 (1846) [part].

Pternistes asiatica, Licht. Nomencl. Av. p. 84 (1854).

Francolinus leucoscepus, Gray, List Birds, pt. v. Gall. p. 48 (1867).

Lichtenstein's name (*asiaticus*), so far as priority goes, should stand for this species; but as the name is misleading, and there was no description, I have determined to adopt the later name (*leucoscepus*) of G. R. Gray.

Hab. North-east Africa: Massowah, Bogos, Abyssinia, Somali.

9. *PTERNISTES INFUSCATUS*.

Pternistes rubricollis, Rüpp. N.O.-Afr. p. 106 (1845); Reich. J. f. O. 1891, p. 143.

Pternistes infuscatus, Cabanis, J. f. O. 1868, p. 413; Cabanis, v. d. Decken's Reis. iii. p. 44, pl. 14 (1869).

Pternistes clappertoni, Shelley, Ibis, 1888, p. 295.

Hab. East Africa: from Mamboio northwards to Kilimanjaro and Taveta.

III.—*Some further Notes on the Periods occupied by Birds in the Incubation of their Eggs.* By WILLIAM EVANS, F.R.S.E.

SINCE my paper on Incubation appeared in 'The Ibis' for January last (1890, p. 52), some additional information has been collected which it may be well now to bring under the notice of those interested in the subject.

In W. J. Broderip's 'Leaves from the Note-book of a Naturalist,' 1852 (p. 14), the period of incubation in the case

of the Condor (*Sarcorhamphus gryphus*) is stated to be 54 days—an interesting record for the knowledge of which I am indebted to Professor Newton. In the 'Encyclopædia Britannica' (9th ed. vi. p. 253) the period assigned to this bird is seven weeks, which does not differ very materially from that given by Broderip.

The 'Zoologist' for 1881 (p. 106) contains what appears to be a reliable record of the hatching of three eggs of the Common Buzzard (*Buteo vulgaris*) by a tame bird of the same species. Incubation is said to have lasted 31 days.

From Dr. Giglioli's 'Primo Resoconto dei Risultati della Inchiesta Ornitologica in Italia,' to which Messrs. Eagle Clarke and Harvie-Brown have kindly drawn my attention, it appears that the duration of incubation was one of the points upon which the army of observers who make returns to the "Ufficio Ornitologico" were asked to report. This elicited from several of the observers a series of statements which will be found in their reports, as recently published by the Italian Government in the second part of the above-mentioned work. A careful analysis of these statements and a comparison of them with ascertained facts shake my confidence in the accuracy of the bulk of them, and make me doubt whether, as a whole, they are of any real value. What seem to me to be manifest inconsistencies and contradictions present themselves at every turn. For instance, according to the table (p. 13) furnished by one observer, the period is the same, namely 16 to 18 days, for the Siskin, the Tawny Owl, the Stone Curlew, &c. Another observer gives (p. 187) 8 days for the Cirl Bunting and 10 for the Larks; while a third tells us (p. 354) that Larks, Finches, and Buntings incubate 15 to 20 days. At p. 190 the Land Rail's period is set down at 12 days, and on p. 228 at 20–22 days. In the case of several of the Partridges, the Black Grouse, and the Ptarmigan, incubation is said to last from 18 to 20 days, an understatement, as it seems to me, of about 5 days. Again, is it possible that eggs of the Bearded Vulture (*Gypaëtus barbatus*) can be hatched in "about 20 days" (pt. 1, p. 420.)? Many other difficulties might be pointed

out, but I invite those interested in the subject to consult the volumes for themselves and to draw their own conclusions. It is a pity the methods employed to ascertain the duration of incubation are not explained.

The following Table contains the results of some further experiments made by me during the summer of last year on the same lines as in 1889 and 1890.

Species.	Period.	Means employed.	Number of eggs hatched.
<i>Turdus merula</i> (Blackbird.)	15th day.	Incubator.	1
<i>Ruticilla phœnicurus</i> (Redstart.)	14th day. 14 days from laying of last egg.	do. Nest watched.	1
<i>Erithacus rubecula</i> (Redbreast.)	13 to 14 days.	Incubator.	2
<i>Acrocephalus phragmitis</i> .. (Sedge Warbler.)	15th day.	do.	1
<i>Parus major</i> (Great Tit.)	14th day (end of).	do.	1
<i>Motacilla lugubris</i> (Pied Wagtail.)	14th day (middle of).	do.	2
<i>Hirundo rustica</i> (Swallow.)	15th day (2nd half of).	Hedge-Sparrow.	1
<i>Alauda arvensis</i> (Sky-Lark.)	13 to 14 days.	Incubator.	2
<i>Sterna fluviatilis</i> (Common Tern.)	21 days (almost exactly.) 22nd day (1st half of). 21st day (2nd half of).	{ do.	3
<i>Totanus calidris</i> (Redshank.)	23rd day.		
<i>Procellaria pelagica</i> (Storm Petrel.)	36th day (1st half of).	do.	1

In my former paper the opinion was expressed (p. 89) that the period in the case of the Redshank had been understated by previous writers, a view which the above-mentioned incubator-period fully sustains.

Half a dozen eggs of the Storm Petrel, kindly procured for me by Messrs. Harvie-Brown and Eagle Clarke during their cruise among the Hebrides last summer, were placed in the incubator on 5th July, and it was with peculiar interest

that I watched their progress till the 31st, when I had to leave home. Before leaving I tested the eggs at light and in water, and was satisfied that five of them not only contained living embryos, but that they were several days from hatching. In my absence Mr. Eagle Clarke kindly continued the daily observations, and was able to report that early on the 33rd day two of the chicks had chipped their shells. Only one of them, however, lived to hatch out. This took place three days later, or after an incubation of fully 35 days, in a temperature of from 102° to 103° Fahr. Considering the size of the egg, and still more of the bird itself, this is a remarkably long period of incubation, but, though fully a week more than the imperfect observation made for me in Shetland in 1889 led me to expect, I see no reason to suppose that it was abnormally prolonged. The fact that, although only one egg was hatched, two were chipped at *precisely* the same time, is of considerable importance, and practically doubles the weight of the observation. Possibly under purely natural conditions the interval between chipping and hatching may, as a rule, be less than three days, and therefore from 33 to 35 days would perhaps be a very fair general conclusion to draw from these observations regarding the duration of incubation in this small Petrel. Reliable information regarding the period of incubation in allied species, such as the Manx Shearwater and the Fulmar, will now be looked forward to with more interest than ever.

We have yet a great deal to learn before we can dogmatize on this subject, but I think my observations warrant the general conclusions which I indicated at the close of my paper, namely (1) that each well-defined natural group of birds has a characteristic period of incubation; and (2) that within each group the larger the egg the longer the period. Within each group, however, the range of duration is apparently slight, as compared with the differences in the size of the eggs.

IV.—A few Remarks on Mr. Oates's 'Birds of British India.' By W. E. BROOKS.

EVERYONE who has consulted Mr. Oates's volumes on the Birds of British India must be delighted with this excellent and very useful work. There are, however, a few corrections which I should like to make, as the results of my own observations.

Vol. I. p. 17.—The Himalayan Crow, *Corvus intermedius*, Adams, is united with the large Crow of the plains, *C. macrorhynchus*, Wagler, formerly known as *C. culminatus*. This is wrong, for the hill bird has a hoarse Raven-like voice, while that of the plains bird is a clear-toned note: there is quite as much difference in their notes as there is between bass and tenor of the human voice. I found, too, that the tail of the hill species, as a rule, exceeded in length that of the plains bird. Crows do not vary much in size, and not at all in colour when wholly black; but this extreme difference in voice entirely forbids, I think, the union of the two species. And is there no difference in form of bill? I think there is.

Vol. I. pp. 344–345.—The difference between the two Goldcrests consists in the lighter coloration of *Regulus himalayensis* and the grey colour about the neck, which I have not observed in *R. cristatus*. In this respect the Himalayan species is more like the North-American *R. satrapa*. I am inclined to think the Japanese species may prove identical with the Himalayan one, but have not the means for comparison. I would keep *Regulus himalayensis*, Blyth, distinct from *R. cristatus*, with which it does not altogether agree.

Vol. I. p. 393. *Hypolais caligata*.—This bird was confounded in collections with *H. rama*. Looking over my collection, Dr. Jerdon suggested that the smaller birds were distinct; and this led me to procure large series of both species, from which it resulted that when freshly moulted *H. rama* is a sort of pale greyish or mouse-brown, while *H. caligata* is a warm rufous-brown, like *Acrocephalus agricola*. I refer to the upper surface of the birds. In a short time the bright sun changes both birds to much the same

tone. This shows that, where there is close affinity, freshly moulted examples are valuable in determining a species. *H. caligata* has notes, too, that I did not hear from *H. rama*. The habits of the two species differ somewhat; for while *H. rama* will mostly be found in the babool bushes or trees, *H. caligata* prefers a cotton-field; and in the cotton-fields I procured most of my examples.

Vol. I. p. 406. *Phylloscopus neglectus* and *P. sindianus*.—*P. neglectus* can hardly be called a *Phylloscopus* at all; in structure of bill, notes, and habits it is more like *Sylvia* (a Whitethroat), while *P. sindianus* is a typical *Phylloscopus* in every respect. The note is a true "tisyip," as Blyth terms it, and in size and general appearance the only bird with which it is likely to be confounded is *P. tristis*; but it wants the green and the yellow of *P. tristis*. The call-notes are also quite different—shrill, faint, and sibilant in *P. tristis*, and loud, clear, and Willow-Wren-like in *P. sindianus*; only the call of the latter is very much louder than that of the English Willow Wren, and no small bird can be heard a greater distance than *P. sindianus*. Its loud clear call is simply astonishing. It being winter-time when I procured it, I never heard its song. It and *P. tristis* were both quite common in the tamarisk bushes near Sukur, and so was *P. neglectus*; so that I had ample opportunities of comparing the three.

Vol. I. p. 425. *Cryptolopha xanthoschista*.—I would separate the North-west bird as *C. albosuperciliaris*, Blyth. These two are of the same size, but the fine dark blue tone of the Eastern bird forbids its identification with the North-west pale ashy-brown bird. The two species are very correctly shown in the plate (xx.) of 'Lahore to Yarkand.'

Vol. II. p. 61. *Pratincola maura*.—I cannot believe that the small *P. indica*, which breeds plentifully in the Himalayas, is identical with the much larger bird, more resembling in coloration *P. rubicola* of Europe.

In the North-west Himalayas, I met only with the small species. I believe there are two species at least. As well as I remember, the larger bird is more eastern. Placing a typical specimen of the small species (*P. indica*) alongside

one of the large examples on which Canon Tristram founded his *P. robusta*, identity is quite out of the question; not only have we an immense difference in size, but the style of coloration is quite different.

Vol. II. p. 312. *Anthus spinoletta*.—I would keep *A. blakistoni*, Swinhoe, distinct. It is smaller, and in winter plumage has well-defined small breast-spots, as opposed to the larger and more cloudy ones of the European bird. A difference of '3 in the length of wing precludes identity.

Vol. II. p. 324. *Alauda arvensis*.—The large Lark of the Punjab is certainly not *A. arvensis*, and *A. dulcivox*, Hodgs., should be kept distinct. My intermediate-sized Lark, *A. guttata* of the Cashmere valley, is distinct from both—a smaller bird, though much larger than *A. gulgula*; and it has one peculiarity—when newly moulted, the reddish parts of the plumage are a *dull purple-brown*, as opposed to the bright rufous of *A. gulgula*. Towards winter-time, and in spring, the Larks weather to the one sandy light tone, and comparisons as to supposed identity should be made just after the moult: at this time only can safe work be done. Unlike other genera, the voice in true *Alauda* is much the same in every species that I have met with (let me here observe I have never seen the Wood-Lark in life), so that the voice is no help in separating them. Clearly there are several species of *Alauda*, and the points of difference are not yet determined, perhaps never will be, for there is not such a difficult group to be found anywhere. Some of the Eastern Himalayan birds are intensely red, and quite different from the Mountain Sky-Larks of the North-west. Carefully collected examples of all the Indian Sky-Larks, just after the autumnal moult and properly sexed and measured, with soft parts accurately noted, would throw some light on the subject; and the same is the case with regard to the Sky-Larks of China and other parts of Asia.

Vol. II. p. 326. *Alauda gulgula*.—To the synonyms should be added *A. cœlivox*, Swinhoe, but from them must be deducted my *A. australis*. The type of the latter is in the Calcutta Museum, and it is quite impossible to unite that

fine Lark with the little *A. gulgula*. This southern Lark must be kept distinct for the present at least. As well as I can remember, the type was procured in the Nilghiri Hills.

The bill and feet of *A. dulcivox* differ from those of *A. arvensis*. The former has also the longest wing. Swinhoe's *A. pekinensis* appeared to me to be much more like true *A. arvensis*.

V.—*Description of a new Species of Wren from North-east India, together with an Account of its Nest and Eggs.* By E. C. STEWART BAKER, District Superintendent of Police, North Cachar.

(Plate II.)

I HAVE recently obtained in Northern Cachar an example of a Wren which I believe to be new to science, and propose to characterize as

ELACHURA HAPLONOTA, sp. n. (Plate II.)

Similis *E. punctatæ*, sed supra concolor, minimè albo-punctata, dorsi punctis albis nullis, et remigibus caudaque unicoloribus nec nigro transfasciatis distinguenda.

Description.—Whole upper plumage and wing-coverts dark umber-brown, rather lighter on the rump and tail-coverts, the feathers obsoletely edged with rather pale sienna-brown; wings dark cinnamon-brown on the exposed parts, and dark-brown where unexposed (in the closed wing); tail brown, tinged with cinnamon-red, but not so strongly as are the wing-quills; lores fulvous-brown, dusky next the axis; chin and throat white, tinged with fulvous, and the feathers, except in the centre, tipped with dusky; breast and sides of neck fulvous-brown, the feathers tipped with brown and subtipped with white, the white being most prominent in the centre of the breast; centre of abdomen and belly white; flanks and under tail-coverts fulvous-brown, some of the feathers of the former tipped with white; thighs greyish brown, the feathers with the shafts slightly paler; under wing-coverts grey; axillaries dark fulvous-brown.



J. G. Keulemans del et lith.

Minuart Bros. imp.

1. ELACHURA HAPLONOTA.
2. ELACHURA PUNCTATA.

Bill dark horny, slightly paler at the commissure and tip, gape black, mouth bluish fleshy; irides light red; legs sanguineous fleshy; claws very pale.

Length—measured in the flesh, immediately after death—4.15 inches, wing 1.95, tail 1.58, bill at front .41, and from gape .52, tarsus barely .6, first primary .72, second 1.02, third 1.25, fourth to secondaries 1.3, length of hind claw nearly .28.

Besides the differences pointed out above, the measurements of the new species appear to be quite different. Oates ('Fauna of British India,' vol. i. p. 340) gives the following dimensions of *E. punctata*—length about 4.5 inches, tail 1.2, wing 1.8; so that *E. punctata* would appear to be a bigger bird, with a shorter tail and wing. The specimen of *Elachura haplonota* above described was obtained on the Hungrum Peak in the North Cachar Hills. It was trapped on its nest under the following circumstances:—

On the 11th May, 1891, I was engaged in visiting numerous nests which had been previously marked down for me by some Naga boys. On being shown a nest built under a big log, which had fallen so as to rest on two rocks, and was thus slightly raised from the ground, I at once saw that it was new to me, so that, instead of taking the eggs, I sat down a short distance away from it to watch for a chance of shooting the parent bird. I sat thus about half an hour, but no bird visited the nest, though two small brown birds kept scuttling backwards and forwards over the log, now hidden in the moss, now perched for a moment on one of the bunches of orchids which grew all over it. In their actions they closely resembled *Pnoepyga pusilla*, and as that bird is very common about Hungrum, I thought they were of that species.

The Naga who was with me set some "mithua hair nooses" on the nest before leaving it, and that same evening we found one of the birds caught in them. The nooses were again set in the hopes that the mate might also be caught. On the morning of the 12th, on visiting the nest, we found that the other bird had not returned; though I waited about a long time in

the hope of obtaining a shot at it, it did not appear, so we took the nest and the eggs, of which there were only three. The nest was placed on a pile of dead leaves, broken twigs and branches, which filled up the hollow below the fallen tree, and was supported on either side by a broken branch. The greater part of the materials consisted of skeleton leaves, bound together with dark coarse fern-roots, a few bents, and also one or two fine elastic twigs; the outermost part of the nest was of dead leaves of all kinds, very loosely bound together, and contrasting with the inner part, which was very compactly lined with skeleton leaves alone. In shape the nest is a deep cup, with the back wall much prolonged, though not enough so to in any way form a roof or porch. The measurements of the nest are as follows:—Outside, not including the loose leaves and twigs, the broadest part is 3·3 inches, the length of the back wall 5·4, of the front wall 2·44, depth of the interior from edge of front wall 1·4, diameter 2·0.

The eggs, as I have already said, were three in number. They are very large in proportion to the size of the bird, measuring $\cdot 67 \times \cdot 50$ inch, $\cdot 65 \times \cdot 51$, and $\cdot 66 \times \cdot 50$. One egg appears to be pure white, unless very carefully examined, when a few excessively minute pale reddish marks may be discovered about the larger end. Another egg has these marks quite distinct, though still very minute. The third egg has the marks much larger, and, in fact, almost blotches. These marks are of the same pale reddish brown as in the other eggs; they form an indistinct ring towards the larger extremity, some dozen freckles being scattered over the rest of the egg. The surface of the eggs is close, hard, and rather glossy, and the shell is decidedly stout. In shape the eggs are rather broad ovals, considerably depressed and pointed towards the smaller end; they were perfectly fresh when taken.

Gunjong, Cachar Hills,
August 22, 1891.

VI.—*On the Indian Museum and its Collection of Birds.*

By W. L. SCLATER, M.A., F.Z.S., Deputy Superintendent.

THE history of the Indian Museum is connected very closely with that of the Asiatic Society of Bengal, the nucleus of the Museum having been formed of the large collection contained in the Museum of the Asiatic Society, which was made over to the Indian Government under a special Act (No. XVII. of 1866). It will therefore be necessary, in giving some account of the Indian Museum and its collections, to begin with a short history of its predecessor—the Museum of the Asiatic Society.

The Asiatic Society was founded in the year 1784, chiefly through the exertions of Sir William Jones, who came out to India in 1783 as a Puisne Judge of the late Supreme Court. Sir William Jones, who was a most enthusiastic Sanscrit scholar and Orientalist, was the first President of the Society, and Warren Hastings, the then Governor-General, was the first patron.

At first the efforts and aims of the newly constituted Society were almost entirely directed towards philological and classical studies, and it was not until 1796 that the idea of a museum was conceived. Nothing practical, however, was done until eighteen years later, when, in 1814, Dr. Nathaniel Wallich wrote a letter to the Society strongly advocating the formation of a museum, and at the same time offering the duplicates of his own rich collection as a base to start on. Dr. Wallich proposed that the Museum should contain antiquities, coins, implements of anthropological interest, animals, plants, and minerals, and offered the Society his services as Honorary Superintendent. Dr. Wallich's offer was accepted by the Society, and the Museum was accordingly started, and increased rapidly for several years.

After Dr. Wallich's resignation of the honorary superintendentship in 1817, difficulties began to arise. No one

could be found who was willing and competent to undertake the onerous duties of honorary curator, and it became necessary to appoint a paid officer, although the Society were able to afford only 50 rupees per mensem for his salary. This arrangement went on for some time, but was not very satisfactory, as it was impossible for so small a sum to get any one competent to undertake scientific work. Eventually, in 1836, a financial crisis in the affairs of the Society made it impossible to continue even the small grant of 50 rupees per mensem for the curator's salary.

An appeal was therefore made to the Government of India for a grant of 200 rupees per mensem as the salary of a properly qualified officer to look after the Museum, and after considerable negotiation with the Governor-General's Council in India and the Court of Directors in England, a monthly grant of 300 rupees was sanctioned for this purpose.

Dr. Pearson and subsequently Dr. McClelland were successively appointed curators under this arrangement, but it was afterwards decided to get out from Europe a properly qualified person, who would devote the whole of his time to the Museum. The late Edward Blyth was accordingly appointed, and came out and took up his office in 1841.

A new era now began for the Museum. Blyth devoted himself enthusiastically to the work of forming a really complete collection of Indian Vertebrates. The new curator was soon in correspondence with various people interested in natural history throughout India, and was quickly supplied with specimens, which he described in numerous reports and papers published in the Asiatic Society's Journal. Among his various correspondents may be mentioned Col. S. R. Tickell, Capt. Hutton, Mr. Brian H. Hodgson, Major Berdmore, Sir Walter Elliot, Mr. Layard, and Dr. Kelaart.

The information acquired by Blyth on Indian Birds was mostly collected into the 'Catalogue of the Birds of the Asiatic Society's Museum,' published in 1849, which is the basis of all subsequent work on Indian Ornithology. After twenty-one years' incessant toil, Blyth was compelled

by broken health to retire in 1862, and died in England in 1873. (See '*Ibis*,' 1874, p. 465.)

As early as 1856 the Council of the Asiatic Society entered into communication with the Government on the subject of the foundation at Calcutta of an Imperial Museum, to which the whole of the Society's Collections were to be transferred. But the mutiny in that year put a stop to anything being done, and it was not until 1862 that negotiations on this subject were really commenced. These were protracted until the middle of 1865, when the terms of the settlements were finally made and embodied in a law (Act XVII. of 1866). By this Act the Society made over all its zoological, geological, and archæological collections to a public museum, to be established and maintained by the Indian Government and to be controlled by a board of trustees. It was agreed also that the Government should provide accommodation for the Society in the Museum to be built, of which accommodation it should have exclusive control, and that the Society were to have the right to nominate one-third of the members of the board of trustees.

Dr. John Anderson was appointed curator of the new Imperial Museum in 1865, prior to the complete incorporation of the trustees under Act XVII. of 1866, and took charge of the collections of the Asiatic Society, although there was no formal handing over of these collections till many years afterwards. The trustees held their first meeting in 1866, and have continued their regular monthly meetings ever since.

In December 1867, Dr. Anderson went out with the first Yunnan expedition as surgeon-naturalist, and Dr. Collis officiated in his place. Dr. Collis was succeeded by Messrs. Stoliczka and Ball, of the Geological Survey, and by them two copies of a list of the collections of the Asiatic Society were made, one of which was kept by the trustees and the other by the Asiatic Society.

Mr. Wood-Mason was then appointed deputy-curator, and took up his appointment in Calcutta in April 1869.

In 1875 the new Museum was completed, and the

trustees took over formal charge of the collections from the Asiatic Society. In the following year a fresh arrangement was entered into with the Society, which was embodied in Act XXII. of 1876. By this the Society gave up all claim to accommodation in the new Museum, and in return the Government presented them with the freehold of their house in Park Street.

The Bird Gallery and the Archæological Gallery were opened to the public in April 1878, and the Mammal Gallery a year later.

In the winter of 1883-4, the Calcutta International Exhibition was held in the premises and buildings of the Museum, and, of course, caused great interruption to the work of arranging the Museum. A considerable quantity of the materials illustrative of the Art and Economic Products of India which had been collected together for the Exhibition was formed into the nucleus of a new section of the Museum, devoted to the same object. These collections have remained until now in the old temporary sheds and buildings erected for the Exhibition, but the Government of Bengal have this year completed a very large new wing of the Museum, to which they will shortly be transferred.

The specimens in the Collection of Birds formed by Blyth for the Asiatic Society were, as was the custom in those days, all stuffed and exhibited to the public. They remained in this condition till 1872, when Dr. Anderson went carefully through them, and removed from the general collection all the types and typical specimens described by Blyth in his various reports. These types were carefully dismounted, ticketed, placed in brown paper covers, and put away in a cabinet. It was found that many of these valuable specimens were in a precarious condition from exposure to light and insects, and it was thought that this was the best way of preserving them from further deterioration.

The remainder of the collection forms the nucleus of the present collection of stuffed birds, to which, however, a great many specimens have since been added.

In 1877 Major Godwin-Austen catalogued the collection

of stuffed birds, and arranged them in the cases of the gallery, which was opened to the public on the 1st of April, 1878. But by far the greater part of the Collection of Birds is now kept in skins. These skins are arranged in a series of large cabinets, placed on two long balconies built on the top of the exhibition cases, which run the length of the Bird Gallery on both sides of the Museum.

This skin-collection was commenced by Dr. Anderson when he was first appointed curator in 1865, but has increased enormously since that time, so that there are now in it at least 10,000 skins of Indian birds alone. It will be perhaps interesting to mention the principal sources from which this series of skins has been derived.

One of the most important contributors to the collection of birds'-skins was Mr. W. T. Blanford, whose principal collections were as follows:—

(1) That from the Central Provinces and the neighbourhood of Chanda in 1867, of which an account will be found in the 'Journal' of the Asiatic Society (vol. xxxviii. p. 164).

(2) The large collection of African Birds made during the Abyssinian Expedition of 1867–68, and described by him in his book on the 'Geology and Zoology of Abyssinia.'

(3) The Persian collection made by Mr. Blanford and Capt. (afterwards Sir) Oliver Beauchamp St. John in Persia and Baluchistan during the years 1870–73. These were described by Mr. Blanford in his book on 'Eastern Persia' (vol. ii., Zoology and Geology).

(4) Considerable collections of birds from Sind and the Mekran Coast, made by Mr. Blanford and received in exchange from him in the year 1877–78.

Dr. John Anderson, the first Superintendent of the Museum, has also contributed a large number of collections, besides numerous individual specimens obtained from time to time by him in the neighbourhood of Calcutta and Darjeeling. The following more important collections were made by him:—

(1) The collections of birds made during the two expeditions to Yunnan, which Dr. Anderson accompanied as

surgeon-naturalist. The first of these, in 1869, reached Momien in Yunnan; the second, but less successful one, in 1874, only got as far as the Kakhyen hills, and had then to return after the murder of Mr. Margery. The results of this expedition were published in a large quarto work entitled 'Anatomical and Zoological Researches.'

(2) The Mergui collection, made by Dr. Anderson in the Mergui archipelago.

This expedition was undertaken chiefly with the object of collecting marine Invertebrates, but a small collection of birds was made, an account of which will be found, along with the other results of the expedition, in the twenty-first volume of the Linnean Society's 'Journal,' which was specially devoted to this purpose.

Lieut.-Col. Godwin-Austen, F.R.S., has contributed considerable collections of birds to the Museum at different times: (1) from the Cachar Hills in 1868 (*cf.* J. A. S. B. xxxix. pp. 91, 204); (2) from the Duffla Hills, made during the Duffla Expedition in 1874-75, and described in the Asiatic Society's 'Journal' for 1876 (xlv. pt. 2, p. 64).

Messrs. Chennel and Bellety have also sent collections from the Naga and Garo Hills respectively.

From the Agra district of the North-West Provinces there is a considerable collection, formerly made for the Agra Museum by Mr. A. C. Carlyle.

Dr. G. E. Dobson, Dr. Armstrong, and Mr. V. Ball have also contributed extensive collections of birds from the Andamans, the Malabar Coast, and Chota Nagpur respectively.

The collections formed during the expedition of the Afghan Boundary Commission under the naturalist who accompanied it, Dr. Aitchison, were all sent to the British Museum, but a first set of the duplicates has been transferred to the Indian Museum. Subsequently, however, to the departure of Dr. Aitchison, Major C. E. Yate, an officer of the same expedition, made a large collection of birds, which he presented to the Indian Museum. These were named and described in a paper communicated by Dr. J. Scully to the 'Journal' of the Asiatic Society of Bengal (lvi. pt. 2, p. 77).

In 1888 Dr. Scully handed over his very large collection of Indian birds'-skins to the Indian Museum: they consisted mainly of three separate collections, all made by the donor himself, as follows:—

(1) In Eastern Turkestan and Ladak in 1874, of which the results were published in the fourth volume of '*Stray Feathers*.'

(2) In Nepal in 1877, of which the results were also published in the eighth volume of '*Stray Feathers*.'

(3) In Gilgit in 1879, of which the results were published in '*The Ibis*' for 1881.

During the last two or three years a native collector has been employed with great advantage to increase the collection of birds'-skins. He has been sent to Perak, in the Malay Peninsula; to the Shevaroy Hills; to the South Arcot district and Bangalore, in the Madras Presidency; and to the Gya district, in Bengal.

These, of course, are only a very few of the more important collections of birds that have been contributed to the Museum, and besides these very large numbers of small collections and individual specimens have been procured from all parts of India and Burma.

Some months ago I made a rough list of the birds of India, founded on that published by Mr. Hume in the eighth volume of '*Stray Feathers*.' To Mr. Hume's list were added all the species since described from the Indian Empire properly speaking, all the species represented in the Persian and the Central Asian collections in the Museum, and also all the birds found in the Malayan Peninsula which have not hitherto been recorded from the Indian Empire.

The Table on p. 72 gives a summary of the number of species recorded in this list, and of the number of species represented and specimens contained in the Indian Museum.

From this Table it will be observed that there are examples of 488 Indian species still wanting to make our collection complete. It has been my endeavour, since I have been in charge of the bird-collection, to reduce this number as much as

possible, and I hope that before long it may be made much more perfect.

	Passeres.	Non-Passeres.	Total.
Total number of Species in the List	1085	803	1888
Total number of Species represented in the Museum by skins	811	589	1400
Total number of skins	6250	4521	10771

The most valuable part, however, of our collection is undoubtedly the type specimens of the very numerous species described by Mr. Blyth, chiefly in his numerous reports published in the Asiatic Society's 'Journal.'

These have all been carefully and critically examined, and the following list of them (pp. 73-87), together with the types of species since described by Messrs. Blanford and Anderson, has been drawn up, together with a record of the localities and the donors.

I much regret to say, however, that there are no less than thirty-nine species described by Blyth of which I have been unable to find the types, and I fear that these are irretrievably lost. The following are the thirty-nine species in question:—

Types Missing.

- Parus aplonotus*, Blyth, J. A. S. B. xvi. p. 444. (Central India.)
Suthora poliotis, Blyth, J. A. S. B. xx. p. 522. (Chérra Punji.)
Geocichla innotata, Blyth, J. A. S. B. xv. p. 370. (Nicobar Islands.)
Euspiza stewarti, Blyth, J. A. S. B. xxiii. p. 215. (N. India.)
Garrulax jerdoni, Blyth, J. A. S. B. xx. p. 522. (Chérra Punji.)
Garrulax cinereifrons, Blyth, J. A. S. B. xx. p. 176. (Ceylon.)
Pomatorhinus olivaceus, Blyth, J. A. S. B. xvi. p. 451. (Tenasserim.)
Malacocercus? albogularis, Blyth, J. A. S. B. xvi. p. 453. (S. India.)
Rimotor malacoptilus, Blyth, J. A. S. B. xvi. p. 155. (Darjeeling.)
Brachypteryx? palliseri, Blyth, J. A. S. B. xx. p. 178. (Ceylon.)
Lioptila annectans, Blyth, J. A. S. B. xvi. p. 450. (Darjeeling.)
Pycnonotus bengalensis, Blyth, J. A. S. B. xiv. p. 566. (Bengal.)
Troglodytes punctatus, Blyth, J. A. S. B. xiv. p. 589. (Darjeeling.)
Tesia caudata, Blyth, J. A. S. B. xiv. p. 588. (Darjeeling.)
Dasyornis locustelloides, Blyth, J. A. S. B. xi. p. 602. (Calcutta.)

- Abroornis maculipennis*, Blyth, Ibis, 1867, p. 27. (Nepal?)
- Phylloscopus magnirostris*, Blyth, J. A. S. B. xii. p. 966. (Calcutta.)
- Culicipeta polioyensis*, Blyth, J. A. S. B. xvi. p. 441. (Darjeeling.)
- Muscicapula sapphira*, Blyth, J. A. S. B. xii. p. 939. (Darjeeling.)
- Cyornis magnirostris*, Blyth, J. A. S. B. xviii. p. 814. (Darjeeling.)
- Saxicola fusca*, Blyth, J. A. S. B. xx. p. 523. (Muttra.)
- Ianthia hyperythra*, Blyth, J. A. S. B. xvi. p. 132. (Darjeeling.)
- Emberiza buehanani*, Blyth, J. A. S. B. xiii. p. 957. (Indian Peninsula.)
- Hirundo fluvicola*, Blyth, J. A. S. B. xxiv. p. 471. (Bundelkund.)
- Anthus striolatus*, Blyth, J. A. S. B. xvi. p. 435. (Darjeeling.)
- Mirafra phœnicuroides*, Blyth, J. A. S. B. xxii. p. 583. (Kashmir.)
- Arachnothera aurata*, Blyth, J. A. S. B. xxiv. p. 478. (Pegu.)
- Cypselus acuticauda*, Blyth, Ibis, 1865, p. 45. (Nepal.)
- Caprimulgus kelaarti*, Blyth, J. A. S. B. xx. p. 175. (Ceylon.)
- Alcedo grandis*, Blyth, J. A. S. B. xiv. p. 190. (Darjeeling.)
- Bucco franklinii*, Blyth, J. A. S. B. xi. p. 167. (Darjeeling.)
- Bucco cyanotis*, Blyth, J. A. S. B. xvi. p. 465. (Arakan.)
- Ephialtes spilocephalus*, Blyth, J. A. S. B. xv. p. 8. (Darjeeling.)
- Hæmatornis spilogaster*, Blyth, J. A. S. B. xxi. p. 351. (Ceylon.)
- Ardea fusca*, Blyth, Ann. & Mag. N. H. xiii. p. 176 (1844). (Arakan.)
- Carpophaga insularis*, Blyth, J. A. S. B. xv. p. 371. (Nicobar Islands.)
- Anthocincla phayrei*, Blyth, J. A. S. B. xxxi. p. 343. (Toungchoo.)
- Arboricola atrogularis*, Blyth, J. A. S. B. xviii. p. 819. (Assam, Sylhet, and Arakan.)
- Sarcogramma atronuchalis*, Blyth, J. A. S. B. xxxi. p. 345. (Malay Peninsula.)

*List of the Type Specimens of Birds in the Indian
Museum, Calcutta.*

		Localities.	Donors.
	Fam. CORVIDÆ.		
2	UROCISSA OCCIPITALIS <i>Psilorhinus occipitalis</i> , Blyth, J. A. S. B. xv. p. 27.	N.W. Himalayas.	Messrs. Frith and Hutton.
2	UROCISSA FLAVIROSTRIS <i>Psilorhinus flavirostris</i> , Blyth, J. A. S. B. xv. p. 28.	Darjeeling.	Mr. Webb.
2	DENDROCITTA BAYLEYI <i>Dendrocitta bayleyi</i> , Tytler, J. A. S. B. xxxii. p. 88.	Andaman Isles.	Col. R. C. Tytler.
1	GARRULUS HYRCANUS <i>Garrulus hyrcanus</i> , Blanf. Ibis, 1873, p. 225.	Elburz Mts.	Sir O. B. C. St. John.

		Localities.	Donors.
1	PARUS PERSICUS..... <i>Parus (Cyanistes) persicus</i> , Blanf. Zool. E. Persia, p. 230.	Shiráz.	Sir O. B. C. St. John.
1	PARUS PHÆNOTUS <i>Parus phænotus</i> , Blanf. Ibis, 1873, p. 88.	Shiráz.	Sir O. B. C. St. John.
1	MACHOLOPHUS SPILONOTUS.. <i>Parus spilonotus</i> , Blyth, Cat. p. 103.	Darjeeling.	C. S. Bonnavie.
2	LOPHOPHANES RUBIDIVENTRIS <i>Parus rubidiventris</i> , Blyth, J. A. S. B. xvi. p. 445.	Nepal.	B. H. Hodgson.
1	LOPHOPHANES RUFINUCHALIS <i>Parus rufonuchalis</i> , Blyth, J. A. S. B. xviii. p. 810.	N. of Simla.	T. Hutton.
1	LOPHOPHANES BEAVANI <i>Lophophanes beavani</i> , Jerd. B. of India, ii. p. 275.	Tonglo, Sikkim.	R. C. Beavan.
1	LOPHOPHANES DICHROUS <i>Lophophanes dichrous</i> , Blyth, J. A. S. B. xiii. p. 943.	Nepal.	B. H. Hodgson.
1	SUTHORA RUFICEPS <i>Chleuasicus ruficeps</i> , Blyth, J. A. S. B. xiv. p. 578.	Darjeeling.	Mr. Webb.
2	SUTHORA BRUNNEA <i>Suthora brunnea</i> , Anders. Yunnan Exped. p. 638.	Momien, Yunnan.	J. Anderson.
2	SCÆORHYNCHUS RUFICEPS .. <i>Paradoxornis ruficeps</i> , Blyth, J. A. S. B. xi. p. 177.	Arakan.	Sir A. Phayre.
Fam. CRATEROPODIDÆ.			
1	GARRULAX STREPITANS..... <i>Garrulax strepitans</i> , Blyth, J. A. S. B. xxiv. p. 268.	Tenasserim Hills.	S. R. Tickell.
2	TROCHALOPTERUM MELANO- STIGMA. <i>Garrulax melanostigma</i> , Blyth, J. A. S. B. xxiv. p. 268.	Mouleyit, Tenas- serim.	S. R. Tickell.
1	TROCHALOPTERUM FAIRBANKI. <i>Trochalopteron fairbanki</i> , Blanf. J. A. S. B. xxxvii. pt. 2, p. 175.	Pulney Hills.	Rev. S. Fairbank.
1	TROCHALOPTERUM MERIDIO- NALE. <i>Trochalopteron meridionale</i> , Blanf. J. A. S. B. xlix. p. 142.	Mynall, Travan- core.	W. T. Blanford.

		Localities.	Donors.
1	TROCHALOPTERUM IMBRICATUM. <i>Garrulax imbricatus</i> , Blyth, J. A. S. B. xii. p. 951.	Bhootan.	Major Pemberton.
2	STACTOCICHLA MERULINA.... <i>Garrulax merulinus</i> , Blyth, J. A. S. B. xx. p. 521.	Chérra Punji, Assam.	R. W. Frith.
3	ARGYA EARLII..... <i>Malacocercus earlii</i> , Blyth, J. A. S. B. xiii. p. 369.	Bengal.	E. Blyth.
2	ARGYA GULARIS..... <i>Chatarrhea gularis</i> , Blyth, J. A. S. B. xxiv. p. 478.	Pegu.	Sir A. Phayre.
2	CRATEROPUS RUFESCENS.... <i>Malacocercus rufescens</i> , Blyth, J. A. S. B. xvi. p. 453.	Ceylon.	R. Templeton.
2	POMATORHINUS MELANURUS.. <i>Pomatorhinus melanurus</i> , Blyth, J. A. S. B. xvi. p. 451.	Ceylon.	R. Templeton.
2	POMATORHINUS FERRUGINOSUS <i>Pomatorhinus ferruginosus</i> , Blyth, J. A. S. B. xiv. p. 597.	Sikkim.	Mr. Webb.
1	POMATORHINUS ALBIGULARIS. <i>Pomatorhinus albogularis</i> , Blyth, J. A. S. B. xxiv. p. 274.	Mouleyit, Tenas- serim.	S. R. Tickell.
2	POMATORHINUS PHAYRII.... <i>Pomatorhinus phayrii</i> , Blyth, J. A. S. B. xvi. p. 452.	Arakan.	Sir A. Phayre.
2	POMATORHINUS HYPOLEUCUS. <i>Orthorhinus hypoleucus</i> , Blyth, J. A. S. B. xiii. p. 371.	Arakan.	Sir A. Phayre.
1	POMATORHINUS TICKELLI.... <i>Orthorhinus tickelli</i> , Hume, S. F. v. p. 32.	Mouleyit, Tenas- serim.	S. R. Tickell.
2	XIPHORHAMPUS SUPERCILIARIS. <i>Xiphirhynchus superciliaris</i> , Blyth, J. A. S. B. xi. p. 175.	Sikkim.	Purchased.
2	GAMPSORHYNCHUS RUFULUS. <i>Gampsorhynchus rufulus</i> , Blyth, J. A. S. B. xiii. p. 371.	Arakan.	Sir A. Phayre.
2	PELLORNEUM FUSCICAPILLUM. <i>Drymocataphus fuscicapillus</i> , Blyth, J. A. S. B. xviii. p. 815.	Ceylon.	E. L. Layard.

		Localities.	Donors.
2	DRYMOCATAPHUS TICKELLI .. <i>Pellorneum tickelli</i> , Blyth, J. A. S. B. xxviii. p. 414.	Amherst, Tenas- serim.	S. R. Tickell.
2	CORYTHOCICHLA BREVICAU- DATA. <i>Turdinus brevicaudatus</i> , Blyth, J. A. S. B. xxiv. p. 272.	Mouleyit, Tenas- serim.	S. R. Tickell.
4	GYPHOPHILA CRISPIFRONS.... <i>Turdinus crispifrons</i> , Blyth, J. A. S. B. xxiv. p. 269.	Mouleyit, Tenas- serim.	S. R. Tickell.
1	MALACOPTERUM AFFINE <i>Trichastoma affine</i> , Blyth, J. A. S. B. xi. p. 795.	Malay Peninsula.	J. Mackey.
1	MALACOPTERUM ALBOGULARE <i>Setaria albogularis</i> , Blyth, J. A. S. B. xiii. p. 385.	Singapore.	M. de Storr.
1	TRICHOSTOMA ROSTRATUM .. <i>Trichastoma rostratum</i> , Blyth, J. A. S. B. xi. p. 795.	Malay Peninsula.	J. Mackey.
2	KENOPIA STRIATA <i>Timalia striata</i> , Blyth, J. A. S. B. xi. p. 793.	Singapore.	M. de Storr.
3	TURDINUS ABBOTTI <i>Malacocincla abbotti</i> , Blyth, J. A. S. B. xiv. p. 601.	Arakan.	Messrs. Abbott and Phayre.
1	THRINGORHINA GUTTATA <i>Turdinus guttatus</i> , Blyth, J. A. S. B. xxviii. p. 414.	Tenasserim.	S. R. Tickell.
1	ALCIPPE PHAYRI <i>Alcippe phayrei</i> , Blyth, J. A. S. B. xiv. p. 601.	Arakan.	Sir A. Phayre.
1	RHOPOCICHLA NIGRIFRONS .. <i>Alcippe nigrifrons</i> , Blyth, J. A. S. B. xviii. p. 815.	Ceylon.	E. L. Layard.
2	STACHYRHIDOPSIS RUFICEPS . <i>Stachyris ruficeps</i> , Blyth, J. A. S. B. xvi. p. 452.	Darjeeling.	Mr. Webb.
2	CYANODERMA ERYTHRO- PTERUM. <i>Timalia erythroptera</i> , Blyth, J. A. S. B. xi. p. 794.	Malay Peninsula.	Messrs. Storr and Lindstedt.
1	LIOPARUS CHRYSÆUS..... <i>Proparus chrysotis</i> , Blyth, J. A. S. B. xiii. p. 938.	Sikkim.	C. S. Bonnavie.
1	BRACHYPTERYX ALBIVENTRIS <i>Callene albiventris</i> , Blanf. P. Z. S. 1867, p. 833.	Pulney Hills.	Rev. S. Fairbank.
2	DRYMOCHARIS CRURALIS <i>Calliope cruralis</i> , Blyth, J. A. S. B. xii. p. 933.	Sikkim.	Purchased.

		Localities.	Donors.
1	<i>LIOPTILA MELANOLEUCA</i> <i>Sibia melanoleuca</i> , Blyth, J. A. S. B. xxviii. p. 413.	Tenasserim.	S. R. Tickell.
1	<i>STAPHIDIA STRIATA</i> <i>Ixulus striatus</i> , Blyth, J. A. S. B. xxviii. p. 413.	Mouleyit, Tenas- serim.	S. R. Tickell.
2	<i>IXULUS OCCIPITALIS</i> <i>Siva occipitalis</i> , Blyth, J. A. S. B. xiii. p. 937.	Sikkim.	Messrs. Bonnavie and Webb.
3	<i>HILAROCICHLA RUFIVENTRIS</i> <i>Pteruthius rufiventer</i> , Blyth, J. A. S. B. xi. p. 183.	Darjeeling.	Messrs. Bonnavie and Webb.
1	<i>HYPSPIPETES CONCOLOR</i> <i>Hypsipetes concolor</i> , Blyth, J. A. S. B. xviii. p. 816.	Moulmein.	Major Berdmore.
3	<i>HEMIXUS TICKELLI</i> <i>Hypsipetes tickelli</i> , Blyth, J. A. S. B. xxiv. p. 275.	Tenasserim.	S. R. Tickell.
3	<i>ALCURUS STRIATUS</i> <i>Trichophorus striatus</i> , Blyth, J. A. S. B. xi. p. 184.	Darjeeling.	Messrs. Saxon and Webb.
2	<i>MOLPASTES NIGRIPILEUS</i> <i>Pycnonotus nigropileus</i> , Blyth, J. A. S. B. xvi. p. 472.	Amherst, Tenas- serim.	E. O'Ryley.
2	<i>XANTHIXUS FLAVESCENS</i> <i>Pycnonotus flavescens</i> , Blyth, J. A. S. B. xiv. p. 568.	Arakan.	Sir A. Phayre.
2	<i>IOLE MALACCENSIS</i> <i>Hypsipetes malaccensis</i> , Blyth, J. A. S. B. xiv. p. 574.	Malacca.	Rev. F. W. Lindstedt.
2	<i>IOLE VIRESCENS</i> <i>Iole virescens</i> , Blyth, J. A. S. B. xiv. p. 573.	Arakan.	Sir A. Phayre.
2	<i>IOLE OLIVACEA</i> <i>Iole olivacea</i> , Blyth, J. A. S. B. xiii. p. 386.	Malacca and Java.	M. de Storr and Bata- vian Soc.
2	<i>IOLE NICOBARIENSIS</i> <i>Ixocincla virescens</i> , Blyth, J. A. S. B. xiv. p. 575.	Nicobars.	Rev. J. Barbe.
1	<i>PYCNONOTUS XANTHORRHUS</i> <i>Pycnonotus xanthorrhous</i> , Ands. Proc. A. S. B. 1869, p. 265.	Manwyne, Yun- nan.	J. Anderson.
2	<i>PYCNONOTUS CYANIVENTRIS</i> . . <i>Pycnonotus cyaniventris</i> , Blyth, J. A. S. B. xi. p. 792.	Singapore.	Messrs. Mackey and Lindstedt.
2	<i>PYCNONOTUS PLUMOSUS</i> <i>Pycnonotus plumosus</i> , Blyth, J. A. S. B. xiv. p. 567.	Singapore and Malacca.	Messrs. Boar and Frith.

		Localities.	Donors.
1	MICROPUS CINEREIVENTRIS .. <i>Brachypodius cinereiventris</i> , Blyth, J. A. S. B. xiv. p. 576.	Tipperah.	M. F. Courjon.
1	KELAARTIA PENICILLATA.... <i>Pycnonotus penicillatus</i> , Blyth, J. A. S. B. xx. p. 178.	Ceylon Hills.	E. F. Kelaart.
Fam. SITTIDÆ.			
1	SITTA CINNAMOMEIVENTRIS .. <i>Sitta cinnamomeiventris</i> , Blyth, J. A. S. B. xi. p. 459.	Noloo.	Old Collection.
1	SITTA FORMOSA <i>Sitta formosa</i> , Blyth, J. A. S. B. xii. p. 938.	Sikkim.	Mrs. Oakes.
Fam. DICRURIDÆ.			
3	DICRURUS LEUCOGENYS..... <i>Dicrurus intermedius</i> , Blyth, J. A. S. B. xv. p. 298.	Ceylon.	E. L. Layard.
Fam. CERTHIIDÆ.			
2	CERTHIA DISCOLOR <i>Certhia discolor</i> , Blyth, J. A. S. B. xiv. p. 580.	Darjeeling.	Mr. Webb.
2	ANORTHURA NEPALENSIS <i>Troglodytes nipalensis</i> , Blyth, J. A. S. B. xiv. p. 589.	Nepal.	B. H. Hodgson.
Fam. SYLVIIDÆ.			
4	ACROCEPHALUS DUMETORUM . <i>Acrocephalus dumetorum</i> , Blyth, J. A. S. B. xviii. p. 815.	Calcutta (2). Ceylon (2).	E. Blyth. E. L. Layard.
1	TRIBURA THORACICA..... <i>Dumeticola thoracica</i> , Blyth, J. A. S. B. xiv. p. 584.	Nepal.	B. H. Hodgson.
1	ORTHOTOMUS CINERACEUS .. <i>Orthotomus cineraceus</i> , Blyth, J. A. S. B. xiv. p. 589.	Malay Peninsula.	Rev. F. W. Lindstedt.
1	CISTICOLA ERYTHROCEPHALA . <i>Cisticola erythrocephala</i> , Blyth, J. A. S. B. xx. p. 523.	Nilgiris.	T. C. Jerdon.

		Localities.	Donors.
1	CISTICOLA TYTLERI <i>Cisticola tytleri</i> , Jerd. B. of India, ii. p. 176.	Dacca.	Col. R. C. Tytler.
2	FRANKLINIA RUFESCENS <i>Prinia rufescens</i> , Blyth, J. A. S. B. xvi. p. 456.	Arakan.	Sir A. Phayre.
1	FRANKLINIA BUCHANANI <i>Prinia buchanani</i> , Blyth, J. A. S. B. xiii. p. 376.	South India.	T. C. Jerdon.
1	LATICELLA BURNESI <i>Eurycercus burnesii</i> , Blyth, J. A. S. B. xiii. p. 374.	Sind.	Sir A. Burnes.
2	GRAMINICOLA BENGALENSIS . <i>Graminicola bengalensis</i> , Jerd. B. of Ind. ii. p. 177.	Cachar.	T. C. Jerdon.
3	SYLVIA JERDONI <i>Curruca jerdoni</i> , Blyth, J. A. S. B. xvi. p. 439.	South India.	T. C. Jerdon.
2	SYLVIA AFFINIS <i>Curruca affinis</i> , Blyth, J. A. S. B. xiv. p. 564.	South India.	T. C. Jerdon.
2	PHYLLOSCOPUS TRISTIS <i>Phylloscopus tristis</i> , Blyth, J. A. S. B. xii. p. 966.	Near Calcutta.	E. Blyth.
2	PHYLLOSCOPUS FUSCATUS <i>Phylloscopus fuscatus</i> , Blyth, J. A. S. B. xi. p. 113.	Near Calcutta.	E. Blyth.
1	ACANTHOPNEUSTE NITIDA .. <i>Phylloscopus nitidus</i> , Blyth, J. A. S. B. xii. p. 965.	Near Calcutta.	E. Blyth.
2	ACANTHOPNEUSTE VIRIDANS . <i>Phylloscopus viridans</i> , Blyth, J. A. S. B. xii. p. 967.	Near Calcutta.	E. Blyth.
2	ACANTHOPNEUSTE LUGUBRIS . <i>Phylloscopus lugubris</i> , Blyth, A. M. N. H. xii. p. 98 (1843)	Near Calcutta.	E. Blyth.
1	ACANTHOPNEUSTE OCCIPITA- LIS. <i>Phylloscopus occipitalis</i> , Blyth, J. A. S. B. xiv. p. 593.	South India.	T. C. Jerdon.
1	CRYPTOLOPHA TEPHROCEPHA- LA. <i>Culicipeta tephrocephala</i> , An- ders. P. Z. S. 1871, p. 213.	Bhamo.	J. Anderson.
3	NEORNIS FLAVOLIVACEUS <i>Neornis flavolivaceus</i> , Blyth, J. A. S. B. xiv. p. 590.	Nepal.	B. H. Hodgson.
1	SUYA SUPERCILIARIS <i>Suya superciliaris</i> , Anders. Zool. Yunnan Exped. p. 642.	Momien, Yun- nan.	J. Anderson.

		Localities.	Donors.
4	PRINIA LEPIDA <i>Prinia lepida</i> , Blyth, J. A. S. B. xiii. p. 376.	Banks of Hoogly (3); Sind (1).	E. Blyth and Sir A. Burnes.
1	PRINIA JERDONI <i>Drymoica jerdoni</i> , Blyth, J. A. S. B. xvi. p. 459.	South India.	T. C. Jerdon.
	Fam. LANIIDÆ.		
1	PERICROCOTUS IGNEUS..... <i>Pericrocotus igneus</i> , Blyth, J. A. S. B. xv. p. 309.	Malacca.	C. Hufnagle.
2	PERICROCOTUS SOLARIS..... <i>Pericrocotus solaris</i> , Blyth, J. A. S. B. xv. p. 310.	Darjeeling and Old Collection.	Webb: unknown.
2	GRAUCALUS DOBSONI <i>Graucalus dobsoni</i> , Ball, J. A. S. B. xli. pt. ii. p. 281.	Andamans.	V. Ball.
	Fam. ORIOLIDÆ.		
1	ORIOLOUS TENUIROSTRIS <i>Oriolus tenuirostris</i> , Blyth, J. A. S. B. xv. p. 48.	Unknown.	Unknown.
2	ORIOLOUS MACRURUS <i>Oriolus macrourus</i> , Blyth, J. A. S. B. xv. pp. 46, 370.	Nicobars.	Capt. Lewis and Rev. J. Barbe.
	Fam. EULABETIDÆ.		
1	EULABES PTILOGENYS <i>Gracula ptilogenys</i> , Blyth, J. A. S. B. xv. p. 285.	Ceylon.	E. L. Layard.
	Fam. STURNIDÆ.		
2	STURNIA ERYTHROPYGIA <i>Sturnia erythropygia</i> , Blyth, J. A. S. B. xi. pp. 34, 369.	Nicobars.	Capt. Lewis.
2	AMPELICEPS CORONATUS <i>Ampeliceps coronatus</i> , Blyth, J. A. S. B. xi. p. 194.	Yé, Tenasserim.	Rev. J. Barbe.
2	STURNOPASTOR SUPERCILIARIS <i>Sturnopastor superciliaris</i> , Blyth, J. A. S. B. xxxii. p. 77.	Burma.	W. T. Blanford.
	Fam. MUSCICAPIDÆ.		
1	CYORNIS HYPERYTHRUS <i>Muscicapa hyperythra</i> , Blyth, J. A. S. B. xi. p. 885.	Darjeeling.	S. R. Tickell.

		Localities.	Donors.
1	CYORNIS TICKELLI <i>Cyornis tickelliæ</i> , Blyth, J. A. S. B. xii. p. 941.	Central India.	C. Fraser.
1	MUSCITREA GRISOLA <i>Tephrodornis grisola</i> , Blyth, J. A. S. B. xii. p. 180.	Botanic Gardens, Calcutta.	E. Blyth.
2	NILTAVA GRANDIS <i>Chaitaris grandis</i> , Blyth, J. A. S. B. xi. p. 189.	Sikkim.	Mr. Webb.
2	CHELIDORHYNX HYPOXAN- THA. <i>Rhipidura hypoxantha</i> , Blyth, J. A. S. B. xii. p. 935.	Darjeeling.	Purchased.
Fam. TURDIDÆ.			
1	PRATINCOLA LEUCURA <i>Pratincola leucura</i> , Blyth, J. A. S. B. xvi. p. 474.	Bhamo.	Sir A. Burnes.
2	SAXICOLA PICATA <i>Saxicola picata</i> , Blyth, J. A. S. B. xvi. p. 131.	N.W. India.	Capt. Boys.
1	HYDROCICHLA FRONTALIS .. <i>Enicurus frontalis</i> , Blyth, J. A. S. B. xvi. p. 156.	Malacca.	E. Lindstedt.
1	ERITHACUS HYRCANUS <i>Erythacus hyrcanus</i> , Blanf. Ibis, 1874, p. 79.	Resht, Persia.	
2	CALLENE FRONTALIS <i>Cinclidium frontale</i> , Blyth, J. A. S. B. xi. p. 181.	Darjeeling.	Mrs. Oakes.
3	CITTOCINCLA ALBIVENTRIS .. <i>Kittacincincla albiventris</i> , Blyth, J. A. S. B. xxvii. p. 269.	Andamans.	Capt. Hodge.
1	MERULA KINNISI <i>Merula kinnisii</i> , Blyth, J. A. S. B. xx. p. 177.	Nuwera Elia, Ceylon.	F. E. Kelaart.
2	GEOCICHLA ALBIGULARIS <i>Geocichla albogularis</i> , Blyth, J. A. S. B. xvi. p. 146.	Nicobars.	Messrs. Lewis and Barbe.
2	OREOCINCLA NILGIRIENSIS .. <i>Oreocincla nilgiriensis</i> , Blyth, J. A. S. B. xvi. p. 141.	Nilgiris.	T. C. Jerdon.
2	OREOCINCLA MOLLISSIMA <i>Turdus mollissimus</i> , Blyth, J. A. S. B. xi. p. 188.	Nepal.	B. H. Hodgson.
2	OREOCINCLA SPILOPTERA <i>Oreocincla spiloptera</i> , Blyth, J. A. S. B. xvi. p. 142.	Ceylon.	E. L. Layard.
2	ZOOTHERA MARGINATA <i>Zoothera marginata</i> , Blyth, J. A. S. B. xvi. p. 141.	Arakan.	Sir A. Phayre.

		Localities.	Donors.
3	ACCENTOR NEPALENSIS..... <i>Accentor nepalensis</i> , Blyth, J. A. S. B. xii. p. 958.	Nepal.	B. H. Hodgson.
1	ACCENTOR HIMALAYANUS.... <i>Accentor himalayanus</i> , Blyth, J. A. S. B. xi. p. 187.	Sikkim.	J. T. Pearson.
	Fam. PLOCEIDÆ.		
2	PLOCEUS BAYA* <i>Ploceus baya</i> , Blyth, J. A. S. B. xiii. p. 945.	Near Calcutta.	E. Blyth.
3	UROLONCHA LEUCOGASTRA .. <i>Amadina leucogastra</i> , Blyth, J. A. S. B. xv. p. 286.	Malacca.	W. G. Frith.
1	UROLONCHA KELAARTI <i>Munia kelaarti</i> , Jerd. B. of Ind. ii. p. 356.	Ceylon Hills.	F. E. Kelaart.
	Fam. FRINGILLIDÆ.		
3	PYCNORHAMPHUS AFFINIS .. <i>Hesperiphona affinis</i> , Blyth, J. A. S. B. xxiv. p. 179.	Punjab, Hima- layas.	Blagrave.
1	PROPASSER GRANDIS† <i>Carpodacus grandis</i> , Blyth, J. A. S. B. xviii. p. 810.	North of Simla.	T. Hutton.
1	PASSER PYRRHONOTUS <i>Passer pyrrhonotus</i> , Blyth, J. A. S. B. xiii. p. 946.	Sind.	Sir A. Burnes.
3	PASSER FLAVEOLUS <i>Passer flaveolus</i> , Blyth, J. A. S. B. xiii. p. 946.	Arakan.	Sir A. Phayre.
1	MONTIFRINGILLA RUFICOLLIS. <i>Montifringilla ruficollis</i> , Blyth, J. A. S. B. xli. pt. 2, p. 66.	Kangra Lama Pass, Sikkim.	W. T. Blanford.
	Fam. HIRUNDINIDÆ.		
2	HIRUNDO TYTLERI..... <i>Hirundo tytleri</i> , Jerd. B. of Ind. iii. App. p. 870.	Dacca.	Col. R. C. Tytler.

* Specimens D and E of Blyth's Catalogue: D with yellow head and breast, E in non-breeding plumage.

† Blyth has also described a *Propasser murrayi* supposed to have been obtained by Lieut. W. G. Murray in Gwalior (see J. A. S. B. xxxii. p. 458, 1863). This is apparently not an Indian bird, and the type, having been forwarded to the British Museum, has been determined by Dr. R. Bowdler Sharpe to be a young example of *Polioptila gularis* from S.E. Africa (Sharpe, Cat. B. xii. p. 343).

		Localities.	Donors.
2	HIRUNDO HYPERYTHRA <i>Hirundo hyperythra</i> , Blyth, J. A. S. B. xviii. p. 814. Fam. ALAUDIDÆ.	Ceylon.	E. L. Layard.
2	MIRAFRA CANTILLANS <i>Mirafra cantillans</i> , Blyth, J. A. S. B. xiii. p. 960. Fam. NECTARINIIDÆ.	Near Calcutta.	E. Blyth.
2	ÆTHOPYGA HORSFIELDI <i>Cinnyris horsfieldi</i> , Blyth, J. A. S. B. xi. p. 107.	N.W. Himalayas.	Messrs. Frith and Hutton.
1	ARACHNECHTHRA EDENI <i>Arachnechthra edeni</i> , Anders. Yunnan Exp. p. 661.	Bhamo.	Dr. J. Anderson.
3	ARACHNECHTHRA FLAMMAXILLARIS. <i>Nectarinia flammaxillaris</i> , Blyth, J. A. S. B. xiv. p. 557. Fam. PITTIDÆ.	Arakan.	Capt. T. R. Abbott.
1	ANTHOCINCLA PHAYRII <i>Anthocincla phayrii</i> , Blyth, J. A. S. B. xxxi. p. 343.	Tonghoo, Burma.	Sir A. Phayre.
2	PITTA CYANEA <i>Pitta cyanea</i> , Blyth, J. A. S. B. xii. p. 1008.	Arakan.	Sir A. Phayre.
* Order EURYLÆMI.			
3	CYMBORHYNCHUS AFFINIS .. <i>Cymborhynchus affinis</i> , Blyth, J. A. S. B. xv. p. 312.	Arakan.	Sir A. Phayre.
Order MACROCHIRES.			
2	CYPSELUS SUBFURCATUS <i>Cypselus subfurcatus</i> , Blyth, J. A. S. B. xviii. p. 807.	Malay Peninsula.	Col. Low.
1	CYPSELUS LEUCONYX <i>Cypselus leuconyx</i> , Blyth, J. A. S. B. xiv. p. 212.	Near Calcutta.	Willis Earle.
1	RHAPHIDURA LEUCOPYGIALIS. <i>Acanthylis leucopygialis</i> , Blyth, J. A. S. B. xviii. p. 809.	Penang.	J. Prosser.
1	BATRACHOSTOMUS AFFINIS .. <i>Batrachostomus affinis</i> , Blyth, J. A. S. B. xvi. p. 1180.	Malay Peninsula.	R. W. Frith.

		Localities.	Donors.
Order PICI.			
3	<i>GECINUS STRIOLATUS</i> <i>Picus striolatus</i> , Blyth, J. A. S. B. xii. p. 1000.	Mussoorie (2); C. India (1).	Capt. T. Hutton and C. Fraser.
1	<i>GECINULUS VIRIDIS</i> <i>Gecinulus viridis</i> , Blyth, J. A. S. B. xxxi. p. 341.	Tonghoo, Burma.	Sir A. Phayre.
4	<i>DENDROCOPUS DARJELLENSIS</i> <i>Picus darjellensis</i> , Blyth, J. A. S. B. xiv. p. 196.	Darjeeling (3); Nepal (1).	Mr. Webb, Mrs. Oakes, H. B. Hodgson.
1	<i>DENDROCOPUS ATRATUS</i> <i>Picus atratus</i> , Blyth, J. A. S. B. xviii. p. 803.	Tenasserim.	Major Berdmore.
1	<i>DENDROCOPUS ANDAMANENSIS</i> <i>Picus andamanensis</i> , Blyth, J. A. S. B. xxviii. p. 412.	Andamans.	Capt. Hodge.
1	<i>DENDROCOPTES SANCTI- JOHANNIS</i> <i>Picus sancti-johannis</i> , Blanf. Ibis, 1873, p. 226.	Near Shiráz.	W. T. Blanford.
3	<i>IYNGIPICUS CANICAPILLUS</i> .. <i>Picus canicapillus</i> , Blyth, J. A. S. B. xiv. p. 197.	Arakan.	Sir A. Phayre, Messrs. MacDonald and Abbott.
1	<i>IYNGIPICUS GYMNOPTHALMUS</i> . <i>Picus gymnophthalmos</i> , Blyth, J. A. S. B. xviii. p. 804.	Ceylon.	E. L. Layard.
3	<i>MIGLYPTES JUGULARIS</i> <i>Picus (Meiglyptes) jugularis</i> , Blyth, J. A. S. B. xiv. p. 195.	Tenasserim (2); Arakan (1).	Rev. J. Barbe and Sir A. Phayre.
3	<i>MICROPTERNUS PHAIOCEPS</i> .. <i>Picus (Micropternus) phai- iceps</i> , Blyth, J. A. S. B. xiv. p. 195.	Calcutta (2); Tippera (1).	E. Blyth and M. Courjon.
2	<i>MULLERIPICUS HODGEI</i> <i>Mulleripicus hodgei</i> , Blyth, J. A. S. B. xxix. p. 105.	Andamans.	Capt. Hodge.
1	<i>THRIPONAX FEDDENI</i> <i>Mulleripicus feddeni</i> , Blanf. J. A. S. B. xxxii. p. 75.	Burma.	W. T. Blanford.
Order COCCYGES.			
2	<i>ANORRHINUS TICKELLI</i> <i>Buceros tickelli</i> , Blyth, J. A. S. B. xxiv. p. 266.	N. Tenasserim.	S. R. Tickell.
1	<i>PHYTIDOCEROS SUBRUFICOLLIS</i> <i>Buceros subruficollis</i> , Blyth, J. A. S. B. xii. p. 177.	Tenasserim.	Dr. Helfer.

		Localities.	Donors.
2	HALCYON OCCIPITALIS <i>Todiramphus occipitalis</i> , Blyth, J. A. S. B. xv. p. 23.	Nicobars.	Capt. Lewis.
1	HIEROCOCCYX NISICOLOR <i>Cuculus nasicolor</i> , Blyth, J. A. S. B. xii. p. 943.	Nepal.	B. H. Hodgson.
1	CENTROCOCCYX ANDAMANENSIS <i>Centropus andamanensis</i> , Tytler, Beavan, Ibis, 1867, p. 321.	Andamans.	Col. R. C. Tytler.
1	CENTROCOCCYX CHLORORHYN- CHUS. <i>Centropus chlororhynchos</i> , Blyth, J. A. S. B. xviii. p. 805.	Ceylon.	E. L. Layard.
1	XANTHOLÆMA MALABARICA.. <i>Bucco malabaricus</i> , Blyth, J. A. S. B. xvi. p. 465.	Malabar.	T. C. Jerdon.
1	INDICATOR XANTHONOTUS. <i>Indicator xanthonotus</i> , Blyth, J. A. S. B. xi. p. 166.	Sikkim.	J. T. Pearson.
Order PSITTACI.			
3	PALÆORNIS CALTHROPÆ <i>Palæornis calthrapæ</i> , Blyth, J. A. S. B. xviii. p. 800.	Ceylon.	E. F. Kelaart.
1	PALÆORNIS CANICEPS <i>Palæornis caniceps</i> , Blyth, J. A. S. B. xv. p. 23.	Nicobars.	Capt. Lewis.
2	PALÆORNIS ERYTHROGENYS .. <i>Palæornis erythrogenys</i> , Blyth, J. A. S. B. xv. p. 23.	Nicobars.	Capt. Lewis and Mr. Halfhyde.
Order STRIGES.			
2	GLAUCIDIUM CASTANONOTUM . <i>Athene castanotus</i> , Blyth, J. A. S. B. xix. p. 511.	Ceylon.	R. Templeton.
2	GLAUCIDIUM MALABARICUM.. <i>Athene malabaricus</i> , Blyth, J. A. S. B. xv. p. 280.	Malabar.	T. C. Jerdon.
1	SYRNIUM BIDDULPHI <i>Syrnium biddulphi</i> , Scully, Ibis, 1881, p. 423.	Gilgit.	Dr. J. Scully.
Order ACCIPITRES.			
1	SPIZÆTUS ALBONIGER <i>Nisaetus alboniger</i> , Blyth, J. A. S. B. xiv. p. 173.	Malacca.	Rev. F. W. Lindstedt.

		Localities.	Donors.
1	MICROHIERAX MELANOLEUCUS <i>Hierax melanoleucus</i> , Blyth, J. A. S. B. xii. p. 179.	Assam.	J. McClelland.
	Order COLUMBÆ.		
3	MACROPYGIA RUFIPENNIS .. <i>Macropygia rufipennis</i> , Blyth, J. A. S. B. xv. p. 371.	Nicobars.	Capt. Lewis and Rev. J. Barbe.
1	CROCOPUS CHLORIGASTER .. <i>Treron chlorigaster</i> , Blyth, J. A. S. B. xii. p. 167.	Near Calcutta.	E. Blyth.
2	CROCOPUS VIRIDIFRONS <i>Treron viridifrons</i> , Blyth, J. A. S. B. xiv. p. 849.	Mergui.	Rev. J. Barbe.
4	OSMOTRERON CHLOROPTERA . <i>Treron chloroptera</i> , Blyth, J. A. S. B. xiv. p. 852.	Nicobars.	Capt. Lewis and Rev. J. Barbe.
	Order GALLINÆ.		
4	PHASIANUS SLADENI <i>Phasianus sladeni</i> , Anders. MS., Elliot, P. Z. S. 1870, pp. 404, 408.	Momien, Yunnan.	J. Anderson.
1	EUPLOCAMUS ANDERSONI <i>Euplocamus andersoni</i> , Elliot, P. Z. S. 1874, p. 137.	Kakhyen Hills.	J. Anderson.
3	EUPLOCAMUS MELANOTUS <i>Euplocamus melanotus</i> , Blyth, J. A. S. B. xvii. pt. 2, p. 694.	Darjeeling.	Mr. Webb.
1	ARBORICOLA BRUNNEIPECTUS <i>Arboricola brunneipectus</i> , Blyth, J. A. S. B. xxiv. p. 276.	Tenasserim.	S. R. Tickell.
1	ARBORICOLA RUFOGULARIS .. <i>Arboricola rufogularis</i> , Blyth, J. A. S. B. xviii. p. 819.	Darjeeling.	Mr. Webb and Mrs. Oakes.
1	ARBORICOLA CHLOROPUS <i>Tropicoperdix chloropus</i> , Blyth, J. A. S. B. xxviii. p. 415.	Tenasserim.	S. R. Tickell.
1	ARBORICOLA INTERMEDIA .. <i>Arboricola intermedia</i> , Blyth, J. A. S. B. xxiv. p. 277.	Arakan.	S. R. Tickell.
1	BAMBUSICOLA FYTCHI <i>Bambusicola fytchii</i> , Anders. P. Z. S. 1871, p. 214.	Ponsee, Kakhyen Hills.	J. Anderson.
1	MEGAPODIUS NICOBARIENSIS . <i>Megapodius nicobariensis</i> , Blyth, J. A. S. B. xv. p. 52.	Nicobars.	Rev. J. Barbe.

		Localities.	Donors.
2	TURNIX BLANFORDI <i>Turnix blanfordi</i> , Blyth, J. A. S. B. xxxii. p. 80. Order GERANOMORPHÆ.	Pegu.	W. T. Blanford.
2	RALLUS INDICUS..... <i>Rallus indicus</i> , Blyth, J. A. S. B. xviii. p. 820. Order LIMICOLÆ.	Calcutta Bazaar.	E. Blyth.
2	LOBIVANELLUS CINEREUS.... <i>Pluvianus cinereus</i> , Blyth, J. A. S. B. xi. p. 587.	Calcutta Bazaar.	E. Blyth.

VII.—On the Birds of Tsu-sima, Japan.

By HENRY SEEBOHM.

THE following notes form a contribution towards the avifauna of Tsu-sima (or Twin Islands), a pair of islands, separated from each other by a very narrow channel, situated in the Corean Straits, about halfway between the peninsula of Corea and Kiu-siu, the most southerly of the three large islands of Japan. They are principally based upon a small collection made by Mr. Holst.

The birds of Tsu-sima, so far as they are yet known, are more nearly allied to those of Japan than to those of Corea. The greater number of the species are common to all three localities, although there are at least eight or nine species which are found in Tsu-sima and Japan, but have not been recorded from Corea. These are—*Emberiza sulphurata*, *Zosterops japonica*, *Emberiza ciopsis*, *Garrulus japonicus*, *Lanius superciliosus*, *Cettia cantans*, *Xanthopygia narcissina*, *Terpsiphone princeps*, and probably *Acridula trivirgata*. On the other hand there are only three species recorded from Tsu-sima which are not known to occur in Japan: *Pitta nympha*, of

which the distribution in China requires further investigation; *Picus richardsi*, only known from Tsu-sima, but very closely related to a Corean species; and *Phasianus torquatus*, the Common Ringed Pheasant of China.

It is possible that these conclusions may have to be modified when the birds of Tsu-sima, especially those of the northern island, are better known.

The numbers placed before each name in the following list are those used in my 'Birds of the Japanese Empire.'

5. *MERULA FUSCATA*.

The Dusky Ouzel is a winter visitor to Tsu-sima. There are two examples in the collection—a male shot on the 22nd of January, and a female on the 15th of April.

Mr. Holst describes the irides as dark brown, the bill as greyish black, shading into pale yellow towards the base of the under mandible and on the edges of both mandibles, the inside of the mouth as rich yellow, and the legs and feet as brownish grey, paler at the back of the tarsus.

6. *MERULA NAUMANNI*.

The Red-tailed Ouzel is a winter visitor to Tsu-sima. There is a female in the collection, shot on the 20th of January.

7. *MERULA PALLIDA*.

The Pale Ouzel is a winter visitor to Tsu-sima. There is a female in the collection, shot on the 22nd of April.

Mr. Holst describes the irides as light brown; the bill as dusky brown, shading into light yellow towards the base of the under mandible and on the edges of both mandibles; the angle of the gape rich yellow, and the legs and feet pale yellow.

8. *MERULA CHRYSOLAUS*.

The Brown Japanese Ouzel was seen on migration late in April in a small flock of Pale Ouzels.

Mr. Holst describes the colours of the soft parts as similar to those of the preceding species, except that the yellow on the bill and feet is brighter.

16. *MONTICOLA CYANUS SOLITARIUS*.

Mr. Holst obtained a male on the 19th of February, the only example he saw.

20. *PRATINCOLA MAURA*.

The Siberian Stonechat appeared in Tsu-sima on the 21st of April.

21. *RUTICILLA AUROREA*.

There are four examples of the Daurian Redstart in the collection, which were shot on the 7th and 25th of January, the 3rd of February, and the 18th of March. Mr. Holst describes it as common during winter.

The irides are described as brown, the bill as black, the angle of gape and inside of mouth as light yellow, and the legs and feet as black.

23. *NILTAVA CYANOMELÆNA*.

A solitary male of the Japanese Blue Flycatcher was shot on the 23rd of April. It was sitting on the branch of a bush, and was not at all shy. This was the only example seen.

The irides are described as dull brown, the bill as jet-black, and the legs and feet as dusky brown.

M. Kalinowski obtained a female of this species in Corea (Taczanowski, Proc. Zool. Soc. 1887, p. 605).

25. *XANTHOPYGIA NARCISSINA*.

Two males of this species, one shot on the 12th and the other on the 21st of May, agree with Japanese examples in having the eyebrow yellow. The Narcissus Flycatcher breeds in South China as well as in Japan, but in Corea it appears to be represented by the Tricoloured Flycatcher (*Xanthopygia tricolor*), which has a white eyebrow. The latter species is not known to have occurred in Japan, but was obtained in Corea by M. Kalinowski (Taczanowski, Proc. Zool. Soc. 1887, p. 605), and a few years later by Mr. Campbell.

Mr. Holst describes the irides as dark brown, the bill as black on the upper and bluish grey on the under mandible, and the feet as bluish grey, darker on the tarsus.

26. *MUSCICAPA SIBIRICA*.

The Siberian Flycatcher is a summer visitor to Tsu-sima. There are two examples in the collection, both procured on the 16th of May.

Mr. Holst describes the irides as dull brown, the bill as black on the upper mandible, and brownish black, shading into yellow towards the base, on the lower mandible, the angle of the gape as yellow, and the legs and feet as brownish black.

27. *MUSCICAPA LATIROSTRIS*.

The Brown Flycatcher is a summer visitor to Tsu-sima. A male in the collection is dated 9th of April.

Mr. Holst describes the bill as black, shading into greyish yellow towards the base of the lower mandible, and the legs as nearly black.

28. *TERPSIPHONE PRINCEPS*.

The Japanese Paradise Flycatcher is a rare summer visitor to Tsu-sima. There are two males in the collection, one dated the 20th and the other the 31st of May. Although this species passes along the coasts of South China on migration, it is unknown in Corea and in every other part of North China.

29. *HYPSSIPETES AMAUROTIS*.

Four examples of this species were shot in January, two on the 7th of May, and one on the 14th of that month, so that we may infer that it is a resident in Tsu-sima. It has only been recorded from Corea as a winter visitor.

32. *ZOSTEROPS JAPONICA*.

This is another instance in which the birds of Tsu-sima agree with those of the Japanese islands, and differ from those of the mainland. No species of this genus has been recorded from Corea.

Mr. Holst describes the irides as light brown, the bill as black, paler at the base of the lower mandible, and the legs as greyish blue.

44. *CETTIA CANTANS*.

There are three examples in the collection dated 14th March, 7th of April, and 31st of May. They agree in colour and dimensions with Japanese examples, and differ from an example from Corea in being much more olive, both on the upper and under parts, and in having the tail longer than the wing.

Mr. Holst describes the irides as light brown, the bill as dusky brown, paler towards the base of the under mandible, and the legs and feet as light brownish grey.

49. *REGULUS CRISTATUS ORIENTALIS*.

Four examples, all shot in April, belong to the Eastern race, having the nape and upper back more or less suffused with slaty brown.

51. *PARUS ATER PEKINENSIS*.

A male Cole Tit, shot on the 2nd of April, has a decided crest.

52. *PARUS ATRICEPS MINOR*.

Four examples, shot from January to May, belong to the Manchurian race of the Indian Great Tit, having much green on the mantle.

53. *PARUS VARIUS*.

This species is a resident on Tsu-sima, but is not known to have occurred on the mainland of China, except in Corea (Taczanowski, Proc. Zool. Soc. 1887, p. 604) in winter. Four examples vary in length of wing from 2.9 to 3.05 inches.

Mr. Holst describes the irides as dark brown, the bill as dusky, shading into light bluish grey at the edges of both mandibles and at the base of the under mandible, and the legs as light greyish blue.

55. *ACREDULA TRIVIRGATA*.

A male Long-tailed Tit shot on the 7th of April, and a female shot on the 15th, agree with typical examples of the Japanese *A. trivirgata*. This species has once been recorded from Corea (Taczanowski, Proc. Zool. Soc. 1887, p. 604), but

all Mr. Campbell's skins of *Acredula* from that peninsula, including a pair from the locality given by M. Kalinowski, are typical examples of *A. caudata*, with pure white head and neck.

Mr. Holst describes the irides as brown, and the bill, legs, and feet as black, except the tarsus of the female, which is dusky brown.

57. *TROGLODYTES FUMIGATUS*.

A Wren in the collection does not differ from Japanese examples.

62. *CORVUS CORONE*.

There is one example of the Carrion Crow in the collection.

65. *CORVUS PASTINATOR*.

There is an example of the Eastern Rook in the collection.

69. *GARRULUS JAPONICUS*.

There are several examples of this species in the collection, but it is described as not common. It is not known to have occurred in Yezzo, nor in Corea, nor in any other part of the mainland of China.

74. *LANIUS SUPERCILIOSUS*.

A typical example of this species, shot on the 21st of May, agrees with Japanese specimens. In Corea and other parts of North China *Lanius lucionensis* occurs, a perfectly distinct species with a grey instead of a chestnut crown.

76. *LANIUS BUCEPHALUS*.

There are four examples in the collection dated January, February, March, and April.

77. *PERICROCOTUS CINEREUS*.

A pair of Siberian Minivets were shot among the larger trees during migration on the 23rd of April.

83. *MOTACILLA LUGENS*.

A young female in first winter plumage was shot on the 11th of January.

85. *MOTACILLA BOARULA*.

The Grey Wagtail arrived in Tsu-sima in the last week of

April. The tail of a male obtained there measures 3·6 inches, and that of a female 3·5 inches.

87. *ANTHUS MACULATUS*.

An example was shot on the 8th of February.

88. *ANTHUS SPINOLETTA JAPONICUS*.

A male shot on the 30th of March is described as having light brownish-grey legs. Flocks of about a dozen were seen on the rocks. There is no white on the outer web of the penultimate tail-feather.

102. *FRINGILLA MONTIFRINGILLA*.

A female Brambling was shot on the 3rd of February.

103. *FRINGILLA SINICA*.

Common in summer.

108. *PASSER MONTANUS*.

There are three examples in the collection.

110. *EMBERIZA CIOPSIS*.

Bonaparte's Japanese Bunting is common on Tsu-sima and appears to be a resident, as examples were procured in January, March, April, and May. It is represented in Corea by *Emberiza cioides*, with chestnut-brown instead of nearly black ear-coverts. Examples of the latter species were obtained in Corea during the cruise of the 'Vettor Pisani' (Giglioli and Salvadori, Proc. Zool. Soc. 1877, p. 582), by M. Kalinowski (Taczanowski, Proc. Zool. Soc. 1887, p. 606), and by Mr. Campbell.

Mr. Holst describes the irides as brown, the bill as greyish black on the upper and greyish blue on the under mandible, in both cases shading to greyish white on the edges; legs greyish flesh-colour, feet darker.

113. *EMBERIZA RUSTICA*.

A male Rustic Bunting was shot on the 18th of January.

115. *EMBERIZA SULPHURATA*.

A male shot on the 14th of April is interesting as an example of a Japanese species which is not known to have occurred in Corea, nor in any other part of North China.

Mr. Holst describes the irides as light brown, the bill as dark grey on the upper and light blue on the lower mandible, tinged with yellow towards the base, in both cases paler at the edges, and the legs and feet as greyish flesh-colour.

118. *EMBERIZA ELEGANS*.

A male was shot on the 18th of March.

Mr. Holst describes the irides as brown, the bill as dusky grey shading into greyish yellow towards the base of the under mandible, and the feet as reddish yellow.

121. *EMBERIZA VARIABILIS*.

A female was shot on the 7th of January.

Mr. Holst describes the irides as brown, the bill as greyish black, shading into light grey on the ridge between the nostrils, at the angle of the gape, on the edges of both mandibles, and towards the base of the under mandible, and the legs and feet as pale greyish brown.

PITTA NYMPHA.

Specimens of this species are said to have been obtained at Tsu-sima by Mr. Jouy (Proc. Biol. Soc. Washington, iv. p. xvii). It is not known that any species of *Pitta* has occurred in Japan, but Mr. Sclater regards the Tsu-sima birds as identical with those found on Formosa (Sclater, Cat. Birds Brit. Mus. xiv. p. 425).

132. *PICUS RICHARDSI*.

Tristram's Woodpecker is the only species known to be peculiar to Tsu-sima. The type (described by Canon Tristram, P. Z. S. 1879, p. 386) is a female with a black crown; but Dr. Isao Ijima, of the Science College of the Imperial University at Tokyo, informs me that Mr. Namiye has recently visited Tsu-sima, where he obtained three examples of this species, one of them a male with brilliant crown and malar stripe.

This fine species has no very near ally in Japan, but is represented in Corea by a closely allied species, *Thriponax kalinowskii*, of which a male example has recently been pre-

sented to the British Museum by Mr. Campbell. The Corean species differs from its ally on Tsu-sima in having white tips to the 2nd, 3rd, 4th, 5th, and 6th primaries.

138. *IYNGIPICUS KISUKI SEEBOHMI*.

This little Woodpecker is not uncommon in the forests. Four examples vary in length of wing from 3.25 to 3.35 inches.

Mr. Holst describes the irides as rich dark red, the bill as dusky grey, paler towards the base of the under mandible, and the legs and feet as greenish grey.

This is another instance in which the birds of Tsu-sima agree with those of Japan and differ from those of Corea. In the peninsula a race of *Iyngipicus scintilliceps* occurs, to which all the examples collected by Mr. Campbell must be referred, and all but one of those collected by M. Kalinowski. This exceptional skin has been recorded as *Iyngipicus seebohmi* (Taczanowski, Proc. Zool. Soc. 1887, p. 609).

142. *TURTUR ORIENTALIS*.

The Eastern Turtle-Dove is occasionally seen on Tsu-sima during the winter.

156. *ALCEDO ISPIDA BENGALENSIS*.

There are two examples of the Eastern race of the Common Kingfisher in the collection.

177. *PANDION HALIAETUS*.

The Osprey is rather common on Tsu-sima.

180. *MILVUS ATER MELANOTIS*.

The Siberian race of the Black Kite is very common on Tsu-sima.

187. *BUTEO VULGARIS PLUMIPES*.

The Eastern race of the Common Buzzard is plentiful on Tsu-sima.

206. *ARDEA JUGULARIS*.

The grey phase of the Eastern Reef-Heron is represented by an example in the collection.

235. *ANAS ZONORHYNCHA.*

There is a male, shot on the 14th of February, in the collection.

Mr. Holst describes the irides as yellowish brown, the bill as jet-black, broadly tipped with light yellow, shading into dusky on the nail, and the feet as pink.

236. *ANAS CRECCA.*

There is a male Teal in the collection.

237. *ANAS FORMOSA.*

In cold weather hundreds of Spectacled Teal frequent the rice-fields.

242. *ANAS GALERICULATA.*

The Mandarin Duck was not common.

Mr. Holst describes the irides as dark brown, the bill as light blue, darkest towards the nail, which is light grey, ridge between the nostrils brownish yellow, and the legs and feet as greenish yellow with dark webs.

271. *ALCA ANTIQUA.*

Bering's Guillemot was common near the shore in March.

Mr. Holst describes the irides as dark brown, the bill as pale grey with a black ridge and brown base, the legs as pale blue in front and black behind, and the feet as pale blue shading into black in the middle of the webs.

277. *FRATERCULA MONOCERATA.*

A male example of the Horn-billed Puffin was shot on the 19th of March.

Mr. Holst describes the irides as amber, the bill as orange shading into light where the horny projection has been cast, the legs as pale yellow in front and black behind, and the feet as pale yellow with dusky webs.

288. *LARUS CACHINNANS.*

A male was shot on the 15th of February.

290. *LARUS CRASSIROSTRIS.*

Two examples are in the collection.

Mr. Holst describes the irides as light yellow, the orbits

as bright red, the bill as greenish towards the base, shading into orange on the ridge, followed by a broad black subterminal band which shades into the bright red tip, the angle of gape as bright red, and the legs and feet as greenish yellow.

329. *TOTANUS HYPOLEUCUS*.

There are three examples of the Common Sandpiper in the collection, dated April and May.

Very few ornithologists realize how very closely this species is allied to its American representative, the Spotted Sandpiper, *Totanus macularius*: they differ only in colour, and it would be impossible to determine to which species an albino of either of them belonged. There is scarcely any difference in the markings of the upper parts, but adults in summer plumage differ widely from each other in the spots on the under surface. The New-World species has the underparts as boldly spotted as those of a Song Thrush; but the Old-World species has no marks on the underparts except on the lower throat and upper breast, and these markings are narrow brown shaft-streaks, very different from the large round spots of the Nearctic bird.

In both species, so far as is known (we have unfortunately very little information respecting the winter plumage of the Spotted Sandpiper), these markings more or less disappear at the autumn moult. The young in first plumage of the Spotted Sandpiper has no spots or streaks on the underparts, and it is supposed that this is also the case with the adult in winter plumage. The young in first plumage of the Common Sandpiper is as much streaked on the throat and breast as the adult in summer plumage; but these streaks are very narrow and obscure in the winter plumage, and sometimes (possibly in very old birds) are quite obsolete, so that this character will not always serve to distinguish the two species in winter plumage.

Another character which generally serves to distinguish the two species at all seasons is the amount of white on the secondaries. In the Common Sandpiper the inner secondaries, especially the 8th and 9th, have much more white

upon them than the others have, whereas in the Spotted Sandpiper there is little or no difference in this respect. This character holds good in a series of twenty examples of the Nearctic species, and may prove to be constant; but in a series of forty examples of the Palearctic species I have found two exceptions, one an immature bird shot by Mr. Swaysland near Brighton, and the other a young male shot by Mr. Dixon near Torquay on the 15th of August. The latter example curiously enough, is also remarkable in having 14 tail-feathers. The normal number in both species is 12, four on each side with very conspicuous white tips, and four in the middle with little or no white on them. The outer tail-feathers are white, barred, chiefly on the inner web, with brown; on each succeeding feather there is less white and more brown, until the centre pair have nearly lost all traces of bars and have become nearly uniform brown. The Nearctic species has on an average a slightly smaller bill than its Palearctic ally, the former varying from 1 inch to 1.85 from the frontal feathers, and the latter from 1 inch to 1.95.

It is possible that a constant character by which the two species may be diagnosed at all ages, in both seasons and of both sexes, is to be found in the colour of the legs and feet, and that of the basal half of the bill. These colours are slate-grey in the Common Sandpiper and ochraceous grey in the Spotted Sandpiper, and this difference between the two species is generally quite distinguishable even in old dried skins.

373. *PODICEPS CORNUTUS.*

There are two examples of the Slavonian Grebe in the collection, one in winter plumage shot on the 14th of February, and the other in summer plumage shot on the 22nd of March. In both the bill is slightly decurved, and in both there is some white on the inner primaries. The latter character therefore breaks down as a distinction between the Slavonian and the Black-necked Grebes in winter plumage. In addition to the fact that the line of the com-

missure is slightly recurved in the latter species and slightly decurved in the former, there seems to be some difference in the comparative lengths of the wing from the carpal joint. This measurement varies in *Podiceps nigricollis* from 5.0 to 5.3 inches, and in *Podiceps cornutus* from 5.4 to 6.0 inches.

375. PHASIANUS TORQUATUS.

The Chinese Ring-necked Pheasant is common on Tsu-sima, and is one of the very few Chinese species which occur on Tsu-sima and not in Japan.

VIII.—*Descriptions of some new Species of Birds from the Eastern Coast of the Malayan Peninsula.* By W. R. DAVISON, F.Z.S., Raffles Museum, Singapore.

1. CAMPOPHAGA MINOR, sp. nov.

Dimensions, taken from the dry skin—Length 6.85 inches, wing 3.7, tail 3.5, tarsus 0.62, bill from gape 0.8.

Head, nape, and upper back very dark sooty grey, almost black, gradually paling to the upper tail-coverts, which are a clear but still dark grey. Chin, throat, and upper breast about the same colour as the middle of the back, gradually paling to a clear but somewhat paler grey than the upper tail-coverts; the under tail-coverts narrowly fringed with a paler shade. Lores and ear-coverts a darker shade than the top of the head. Wings, including all the coverts, glossy black; lower surface of wings tinged with grey; lower wing-coverts and axillaries the same shade of grey as the breast. Tail-feathers glossy black, like the wings, the central pair and the next pair entirely so, the others narrowly tipped with grey of the same tint as the under tail-coverts.

2. GERYGONE PECTORALIS, sp. nov.

Similar to *G. flaveola*, Cab. (cf. Sharpe, Brit. Mus. Cat. Birds, vol. iv. p. 214, pl. v. fig. 2), but differs from that species in having the sides of the breast olive-grey, forming a broad pectoral band, interrupted only in the centre of the breast;

flanks strongly tinged with the same colour. Upper surface darker ashy than in *G. flaveola* and tinged with yellowish olive. Ear-coverts slightly darker than the upper surface, and without any trace of yellow or olive. Measurements, taken from the dried skin—Length 3·8 inches, wing 1·75, tail 1·7, tarsus 0·55. Legs, feet, claws, and bill black; irides hazel-nut brown.

Only one specimen, a male, was obtained on the 2nd of September last. It was shot near the mouth of the Pahang river. Its pretty little song, as it flitted among the branches of a *Casuarina* tree, drew my attention to it. Its note much resembles that of many of the *Phylloscopi*, and, in fact, I at first took it for a *Phylloscopus*. The following is a more detailed description:—

Upper surface dark ashy and tinged with yellowish olive. Quills hair-brown, with margins paler, especially so on the tertiaries; the inner webs of the tertiaries slightly darker than the outer. Tail-feathers like the back, with a subterminal dark band; all the feathers, except the central ones, with a white irregular spot on the inner webs near the tip, the spotting being minute on the feathers next the central pair, but gradually increasing in size to the outermost; the upper tail-coverts more decidedly tinged with olive than the rest of the upper surface. Chin, throat, and upper breast clear sulphur-yellow, the colour passing along the base of the lower mandible, immediately below the ear-coverts; and on to the sides of the neck; the centre of the breast, abdomen, and flanks a somewhat duller yellow. A large patch on each side of the breast, forming a broad pectoral band, interrupted only in the centre of the breast, olive-grey, the same colour tinging the sides and flanks. Wing-linings, axillaries, and lower tail-coverts white, slightly tinged with yellow, the white of the wing-lining passing over the edge and forming a conspicuous spot at the base of the first primary.

3. *PTILOICICHLA LEUCOGASTRA*, sp. nov.

The sexes do not perceptibly differ in size or colouring. The following are the dimensions from the dried skins of two males and two females:—

Males. Length 5, 5·7 inches; wing 2·7; tail 2·2, 2·3; tarsus 0·95; bill from gape 0·71.

Females. Length 4·9, 5·2 inches; wing 2·55, 2·7; tail 2, 2·2; tarsus 0·91, 0·94; bill from gape 0·7, 0·71.

The upper mandible dark brown, lower yellow tipped dusky; irides red-brown; legs, feet, and claws yellowish fleshy, claws shaded with dusky.

Lores whitish; forehead, crown, and occiput brown, slightly suffused on the forehead with rusty; rest of the upper parts brown, strongly suffused with rusty, more pronounced on the lower back and upper tail-coverts. Tail-feathers rufous on the outer webs, rusty brown on the inner. The dorsal plumes, which are soft, fluffy, and moderately long, are white on the basal two thirds; this is succeeded by a faint dusky line, the remaining portion being rusty brown; the white is lanceolate in shape, and does not show unless the feathers are lifted. Primaries, secondaries, and all but the last two tertiaries (which are entirely rusty brown like the back) rusty brown on the outer webs, and hair-brown (without a rusty tinge) on the inner webs. All the wing-coverts coloured like the back. Cheeks and ear-coverts pale brown, feathers of ear-coverts with paler shafts. Lower parts white, tinged on the sides and flanks with ashy. Axillaries, wing-linings, and thighs pale rufous.

All the four specimens exhibit a buffy-grey line separating the throat from the chest.

4. *MALACOPTERUM MELANOCEPHALUM*, sp. nov.

Only one specimen, a female, of this species was obtained; it was shot at the mouth of the Temeling river.

It appears to be most closely allied to *M. albigulare*, Blyth (*cf.* Sharpe, Brit. Mus. Cat. Birds, vol. vii. p. 568), but differs from that species in many particulars.

Dimensions, taken from the dried skin—Length 6·45 inches, wing 3·0, tail 3·1, tarsus 0·9, bill from gape 0·8.

Upper mandible as far as the nostrils and along the ridge of the culmen blackish, rest of upper and lower mandibles, legs, feet, and claws plumbeous, claws darker; irides red-brown.

Lores dirty white. Forehead, top of head, and nape dull black; cheeks and ear-coverts grey, ear-coverts pale-shafted. Back, rump, and upper tail-coverts olivaceous brown, suffused, most strongly so on upper tail-coverts, with rusty; tail-feathers brown, like the upper back, margined with a rusty tinge on the outer webs, none of the tail-feathers with any trace of white or pale tipping. Quills hair-brown, suffused on the outer webs with a rusty tinge; primary and secondary coverts greyish, with rusty edgings to the feathers. Lower surface white, the feathers of the breast suffused with grey, forming a pectoral band, the grey continuing down the flanks. Wing-linings and axillaries white, untinged with grey. Under surface of quills grey-brown, margined on the inner web, especially so towards their bases, with whitish. Under surface of tail also grey-brown, shafts of feathers white.

5. *ACRIDOTHERES TORQUATUS*, sp. nov.

I cannot recognize this Myna as being nearly similar in colouring to any of the known species. The only specimen obtained is, unfortunately, moulting, so that the bird is not in the best state to describe. I hope, however, before long to obtain other and better-plumaged specimens, and shall then be able to supplement, if necessary, the present description.

The chin, throat, and sides of the neck are salmon-buff, this colour also tipping some of the feathers of the back of the neck, and thus forming, as in *A. albocinctus*, a half-collar. Across the upper breast a broad slate-coloured band, most of the feathers of which are faintly edged with buff; rest of lower parts, except thighs, flanks, and lower tail-coverts, of the same salmon-buff as the chin and throat; flanks dusky; thighs slate-coloured, like the pectoral band. Lower tail-coverts white, without any traces of spotting or of a darker colour. Head, with crest and ear-coverts, glossy black, some of the feathers of the ear-coverts tipped with buff. Hind neck dusky black, many of the feathers tipped with buff. Rest of upper surface dusky, with a grey tinge, most conspicuous on the rump and upper tail-coverts. Central tail-feathers dusky black, not tipped with white; all the other tail-feathers glossy black and narrowly tipped, chiefly on their inner webs,

with white. Primaries black, with a broad basal white patch. Secondaries on their outer webs, and so much of their inner webs as is exposed, bronzy, with a narrow basal white patch, the remaining portion being dull black; tertiaries bronzy, narrowly edged with blackish. Primary greater coverts white; lesser coverts dusky; secondary and tertiary coverts bronzy, suffused with dusky. Wing-linings and axillaries white, the axillaries freckled on their inner webs with greyish; rest of under surface of wing, where not white, black, with a slight gloss. Legs, feet, and claws yellow, claws tinged with dusky. Bill orange-yellow, greenish blue at base. Irides pearly grey. Length (from dried skin) about 8·5 inches, wing 4·7, tarsus 1·4, bill from gape 1·2.

The specimen was obtained at Paulu Tawer, on the Pahang river, 6th August, 1891. The crest is not very full; but, as most of the feathers are only partially grown, it is impossible to say what the crest would be like in a fully-plumaged bird.

IX.—*On the Birds of Madagascar, and their Connection with Native Folk-lore, Proverbs, and Superstitions.* By the Rev. JAMES SIBREE, Jr., F.R.G.S.*—Part IV.

[Continued from 'The Ibis,' 1891, p. 565.]

VI.—THE WADING BIRDS.

THE Order of the Grallæ, or Wading Birds, with its six or seven families and numerous subdivisions, is represented in Madagascar by about thirty species of birds belonging to the Jacanas, Rails, Water-hens, Coots, Curlews, Sandpipers, Snipes, Plovers, and Turnstones, as well as by a family (Mesitidæ) which is quite peculiar to the island.

As might be expected, many of these water-loving birds are very numerous in this country, as well as those of the two following Orders, the Herons and the Wild-fowl; for

* Reprinted from the 'Antananarivo Annual,' 1891, with additions and corrections by the Author.

although a large portion of Madagascar is, geologically speaking, very ancient land, and is therefore rather deficient in lakes, as compared with more recently formed countries, its plentiful marshes, its numerous rivers, and its large extent of sea-coast, with the numberless bays and inlets of the north-western portion, provide abundant nutriment and suitable feeding-grounds for this large class of birds.

The first family, that of the Jacanas, is represented here by two species, the first of which, the White-necked Jacana, appears to be peculiar to Madagascar and the neighbouring islands. With its extremely long toes it walks easily upon the large leaves of aquatic plants, searching for the water-insects which form its food. It dives with great ease, and is therefore very difficult to shoot; in its habits and flight it resembles the European Water-hen. It is a somewhat rare bird.

The other species of this family, the African Jacana, is identical with that found all over Southern Africa from the tropics to the Cape: it frequents the same localities as the White-necked species, being often found together with its cousin. The native names of this bird, as well as one of those by which the other Jacana is known, are long and rather obscure. Possibly they contain the root *tèty*, "passed through," "walked on," and, if so, would then refer to the habits of these birds in stepping from leaf to leaf of the water-plants. The White-necked Jacana is also called *Vò-rontsàranidny*, "Handsome-bird-of-the-river," and *Tolòho-ràno*, "Water-Cuckoo."

The family of the Rails comprises ten birds, of which the *Rallus gularis* has been best observed. According to M. Pollen's account, this Rail is regarded with great respect by the north-western Sàkalàva, as they believe it brings them rain in very dry weather, so they will not kill it. It frequents the marshy parts of forests, and in habits resembles the European species. It is very shy, retiring into the bushes on the least alarm, and its loud whistling and tremulous cry is chiefly heard towards evening. These birds are said to be so careful of their eggs and young that, when sitting, they may easily

be taken by the hand from the nest : so also, when they are surprised in places where there is no cover, they prefer to be captured rather than to resort to flight. M. Pollen says, "I once saw a hen bird who would not quit the space near her nest, but kept walking around it, ruffling her feathers and dragging her wings on the ground, in the same way as our domestic hen does when defending her young." This Rail's nest is made of rushes; it is about 6 inches in diameter, and is fixed on water-plants about 3 feet above the ground. The eggs are three in number, yellowish white in colour, blotched with dark brown, and as large as those of a Rook.

The Grey-faced Rail is much rarer than the bird just described, and inhabits the forest exclusively, often at some distance from water-courses.

Several of the names of these Rails are significant; thus the *Rallus gularis* is called, besides its names of *Tsikòza* and *Tsíka* (probably imitative of its creaking note), *Angòly*, doubtless identical with the same word which means "artifice, deceit, snare," and so refers to its tricks to escape capture. The same idea again comes in in one of the names of the Grey-faced Rail, *Otrika*, which means "an ambush," no doubt from its rapidly taking to cover when hunted. The Madagascar Rail is also called *Hèrikèry*, probably from a root meaning "to look around," "to look back." *Mènamàso*, "Red-eye," *Akòholàhindràno*, "Water-cock," *Vòron-ampòmbò*, "Bran- (or Chaff-) bird," and *Fangàlatróvy*, "Yam-thief," are all noticeable native names of the birds of this family.

The two Purple Water-hens (*Porphyrio*) found in Madagascar, inland waters are among the most beautiful of the birds inhabiting the island. Some of their native names, as *Hosètrika*, *Hoètrika*, &c., appear to contain a root meaning "to dip," "to plunge," and so refer to their constantly diving in the waters they frequent. (Or, possibly, these names may be from another root, meaning "to wander about.") Mr. W. Wilson says: "The Blue Water-hen has a very powerful beak, with which it can, with apparently very little trouble, root up the *Hèrana* rush, as it grows on the edge of Lake Itasy in

water a foot and a half or more deep. It does this for the sake of the tender rootlets which are thus exposed, perhaps also for insects. If caught in a snare of stout string prepared from the fibre of one of the nettle-plants (*Agy*), it very speedily frees itself by breaking the snare."

The Crested Coot has for one of its native names that of *Otrika* (like that of the Grey-faced Rail just mentioned), doubtless from its immediately diving when alarmed.

Proceeding to the Scolopacidae, or Snipe family, we find two species of Curlew in the island; one of them is the same as the Whimbrel of Europe, the other (if distinct from the European Curlew, which is sometimes doubted) is peculiar to Madagascar and rare. It lives almost always isolated among the other shore-birds, and frequents the sand-banks along the coasts. Its cry is very loud and quite distinct from that of the other and smaller species, and it is only rarely found in company with it.

The native names of these Curlews are obscure in meaning; one or two, however, as *Kèha* and *Kèkakèka*, are probably imitative of their plaintive cry. (The latter is also a name of one of the Snipes.)

The Cape Painted Snipe is common in the marshes, but is rarely seen, on account of its hiding in the long grass and aquatic vegetation, so that it is difficult to obtain without dogs. The flight of these birds is very rapid and in a zigzag fashion, but it alights every few moments*. They specially like to frequent, in little companies of from four to six birds, the places where cattle resort, for they find abundant food in the deep footprints made by the oxen in the muddy soil of the marshes where they pasture. The other Madagascar Snipe (Bernier's) is a peculiar species.

* Mr. Cory remarks on this statement (of M. Pollen's): "When shooting I have never found this bird's flight difficult or fast, not so difficult even as the large Malagasy Snipe, which is reckoned an easy shot by most men. In proof of this I may state that I have only seen four, and three I killed; the fourth I fired at when very tired and on a day when I had been shooting badly. I should say that for a Snipe it is particularly slow and even on the wing."

The Curlew Sandpiper is found in considerable numbers on the coast; but M. Pollen says that he has never observed it before October, or later than that month, so that he believes that this bird is not a permanent resident in Madagascar, but only rests here a few weeks in migrating to and from other regions.

The Sandpiper found in Madagascar appears to differ in no respect at all from the species spread so widely over the Old World, and is one of the most common shore-birds. It is almost always met with either singly or in couples, and is very easily recognized by the piercing cry which it constantly utters, moving its tail up and down, and running quickly along the shore in search of aquatic insects. The cock bird, in courting the female, has the habit of marching round and round her, trailing his wings on the ground, and bobbing his head up and down, while the hen bird remains motionless, observing the antics of her mate. Bishop Kestell-Cornish remarks: "It is curious to observe how these various [shore] birds seem to preserve their habits unchanged in whatever part of the globe they may be found. The Sandpiper is just the same confiding little creature in Madagascar as in England, differing from the birds that haunt our shores and the banks of our rivers only in greater variety of species. And the Curlew retains the same wild cry, and the same objection to finding himself within gun-range, as in England."

The Stilt-Plover found in Madagascar appears to resemble the European species. Its native names of *Tapàla* and *Tàkapàla* probably refer to its straddling and awkward gait.

Some other of the native names for this family may be here noticed. Thus, that of *Tòitòy*, given both to the Curlew and Common Sandpiper, is said to be an imitative one. The latter bird's habits, both on land and water, are noticed in its other names of *Fandiafásika*, "Sand-stepper," and *Saosao-dràno*, "Water-skimmer;" and it is also called *Manàboan-dràno*, "That-which-celebrates-the-day." It is known by still another name, viz. *Kìborànto*, probably meaning the "Far-running-Quail." The Curlew Sandpiper is also called *Kìboandràno*, "Water-Quail." The name of *Ràvaràva* given

to both the Snipes probably refers to their handsome markings; and perhaps *Féjo* (or *Féja*), a name of the Painted Snipe, has a similar meaning; while that of *Salàly* may come either from a root *làdy* (= *làly*), meaning "quick of hearing," or from an exactly similar one meaning "creeping," "skulking." Another name of Bernier's Snipe, *Vóronkàhaky*, is doubtless (at least the latter part of it) imitative of its cry, like *Kèka-kèka*, just noticed. I will not venture upon an explanation of *Kitànotàno*, the Hova name of both the Madagascar Snipes*.

Seven species of the Plover family complete (excepting the peculiar *Mesitidæ*) the number of wading and shore-loving birds found in Madagascar. Four of the Plovers belong to one genus, *Egialitis*, or Shore-Plover.

The Turnstone is very common on the shores, and is often seen in companies of from twelve to thirty individuals. Like the Curlews, it immediately warns all the other birds of any approaching danger; and probably its name of *Kitòry*, i. e. "Proclaimer" or "Accuser," refers to this habit.

Of Geoffroy's Plover, M. Pollen says that these birds come together in the evening, just at dusk, in considerable numbers to seek for food. They run excessively quickly, from which habit comes one of their names, *Kìborànto*, "Far-running Quail," and they fly along the surface of the water one after another. All four species of these birds are called *Vìkivìky*, no doubt from a root identical in form, and meaning "to run," "to leap." Probably *Vèkovèko*, a name of the Pratincole, is of similar origin. Other names of these Plovers, as *Vòrombàto*, "Stone-bird," *Hitsikìtsidràno*, "Water Kestrel," *Vòrondrìaka*, "Ocean-bird," and *Vòronjà*, "Shore-bird" (or possibly "Roving-bird"), are all plain enough in their meaning and origin.

The last birds to be noticed in this Order are two species which, so far, can only be spoken of by their scientific name of *Mesite* (*Mesites*). These birds are considered by M. Grandidier to be sufficiently distinct from all the other Waders

* Is it from *tànotànona*, or an allied word, meaning "sitting unemployed," "resting idly"?

to be formed into a special family, Mesitidæ: he terms them "very curious and specialized birds, taking their place between the Rails and the Herons." He says further that, "according to the native accounts, when the nests of these Mesites, which are mostly placed in a low situation, are flooded, the parent birds drag them to where they will be free from injury by the water. If anyone takes their young they follow them into the village, and on account of this love for their offspring they are considered sacred (*fàdy*) by the Bètsimisàraka, because, say the natives, they are in this respect like human beings." There are two species of this bird, the Variegated and the Uniform; the former of which is known by the odd name of *Ròatèlo*, lit. "Two-three," the reason for which is not at all clear.

VII.—THE HERONS.

The four families into which the Order of Herodiones or Herons is divided are all represented in Madagascar, and include three-and-twenty species belonging to the True Herons, the Storks, the Spoonbills and Ibises, and the Flamingoes. Of these birds more than half the number belong to one genus, the Herons (*Ardea*), which is thus the most numerously represented genus in the island, as will be seen by the tabulated List.

(1) As M. Grandidier observes, the coasts of Madagascar are particularly favourable for such birds as the Herons, especially the north-west and some other localities, where numerous estuaries are surrounded by trees. Some of the species, being regarded as sacred by the natives, are less shy than these birds are in Europe; while others, again, are very wary and most difficult to approach. In habits and feeding these Madagascar Herons are much like the European and African species, mostly living on fishes, mollusks, and crustacea, the larger ones devouring reptiles and small birds and mammals, while the smaller kinds are insectivorous. They are often found in companies, including several different species, settled on the trees overhanging or near water, and remaining perfectly motionless for a long time. Some of the

Hérons appear to be very abundant, such as the Common, the Black-necked, the Purple, the White-winged, the Little Egret, and some other species, especially the Buff-backed Heron. Others, on the contrary, as the Dwarf Heron, the Night-Heron, and Ida's Egret, seem very rare.

The most common of the Herons, as well as perhaps the most noticeable bird one sees when travelling in any part of Madagascar, is the Buff-backed Heron (*Vòrompòtsy*, i. e. "White-bird"). Wherever herds of cattle are feeding, there it will be seen in numbers proportionate to those of the oxen. "These animals it follows to feed upon the larvæ of insects which infest their skin and torment them unceasingly. One may often see these Egrets perched on the back of the oxen, and thus clearing them from their tormentors, which sometimes become as large as a plum, and even occasionally produce such exhaustion that the animals die from the effects. For the natives, with their usual inertness, would never think of taking any trouble themselves to free their cattle from these pests. It is, therefore, not surprising that such useful birds as the *Vòrompòtsy* are highly valued by the Malagasy, and are almost venerated as agents of their god *Zanahàry*; so that they cannot see one of them shot by foreigners without much displeasure, and they would think it a kind of sacrilege were they themselves to chase or injure them *. These Egrets are very fearless of man, allowing any one to approach them pretty near, and only leaving the cattle towards evening, when they repair to any piece of water near them to bathe. At sunset they roost in the trees of the neighbouring woods, leaving these again at daybreak

* Mr. Cory, commenting on M. Pollen's description here quoted, says: "Some tribes eat these birds, and always desire one to shoot them for them." And Mr. W. Wilson remarks: "I hardly think that the Egrets can be 'highly valued' as tick destroyers, since what they do is a mere nothing. They remove the white tick, which is harmless and not feared at all by the natives; but no animal will stand even for its own care-taker to remove the flat tick, let alone the Egret with its very sharply-pointed beak." M. Pollen's account is, however, so circumstantial that possibly the birds of the N.W. coast find different insect food from that which these Egrets live upon in the interior.

to return to the herds. One may often see flocks of five hundred of these birds gathering together at evening before settling on the trees in the outskirts of the forests."

When living close to the "Thursday" market at Ambòhimànga some years ago, we frequently noticed that a large flock of these Egrets, to the number of three to four hundred, used to gather together at sunset on a spacious *tanèty* or large open space opposite our house. After a few minutes' rest one of the birds rose, apparently giving the signal, and was immediately followed by the whole flock, which then flew away northward, with rather a slow heavy flight, and settled for the night on the trees on the north-west side of the Ambòhimànga hill, where they would be sheltered from the cold south-east wind. In this position they were very conspicuous for a considerable distance, forming a large white mass on the trees. The birds appeared to come from the marshes about Anòsinandriàna to the west, where they probably found aquatic food, and so do not always attend on the cattle. It was only during the winter months that they came to Ambòhimànga; in the warm season they remained in the open country.

Besides its very widely-spread name of Vòrompòtsy, this Egret has a number of provincial names, some of which refer to its cattle-loving habits, as *Vòronaomby*, "Ox-bird," and *Langòroaomby*, "Ox-Heron"; others to its colour, as *Vòronkòtsy*, and perhaps *Sikòtry*, variations of the Hova form; one is *Kitàndry*, "the Watchman"; and another, *Kiriàka*, probably meaning "to go after something in a crowd."

As its name implies, this Egret is of an extremely pure white colour, but the small plume at the back of the head is tinged with pale yellow. This crest, as well as the long feathers, are often used as ornaments by the Malagasy. Their purity of plumage is referred to in one of the proverbs: "Clean clothing, like the Vòrompòtsy, but he gets his living by picking up scraps." Its mounting on the back of the oxen is referred to in another proverb: "Don't seek to be 'number one,' like a Vòrompòtsy." And again, its sharp-eyed vigilance is noticed in another, which says: "A Vòrom-

pòtsy perched on a crooked branch : I spy him, but he keeps his eye on me."

As for the native names of the other Herons, almost all are known by the generic name of *Vàno*, either in its simple form or compounded with other words. This word *Vàno* seems to be from a Malayan and Javan word, *bango*, a heron, but what is its original meaning is unknown. Another widely-spread provincial name for these birds is *Langòro* or *Dangòro*, also often found in a compound form. Thus we have *Vàndanitra*, "Sky-Heron"; *Vànobè* and *Langòrobè*, "Great-Heron"; *Vànomainity* and *Dangòromainty*, "Black-Heron"; and *Vànofòtsy* and *Langòrofòtsy*, "White-Heron." And so again : *Langòrovalàfa*, "Palm-Heron"; *Dangòrovoàna*, "Insect-Heron"; and *Fòtsièlatra*, "White-wings." The bird known by this last name has also the queer name of *Fangàlimòtivòay*, which may be translated 'Crocodiles' eye-cleaner;" so that this bird probably is one of those that do the same kind offices for the crocodiles that the *Vòrompòtsy* does for the oxen. Again, the Squacco Heron is called *Fiàndrivòditàtatra*, i.e. "Waiter-at-the-foot-of-the-furrows"; while another is called *Vòrompàtsa*, "Shrimp-bird;" and another, *Vóronòsy*, "Marsh-bird" or Goat-bird."

(2) The family of the Storks contains in Madagascar three species, one of them peculiar to the island. The most well-known bird of this family is the *Tàkatra* or Tufted Umbre, a brown long-legged Stork, frequently seen in the marshes and rice-fields of Imèrina, as well as in other parts of the country. This bird builds an extraordinarily large nest, which is visible at a considerable distance. It is placed either on the fork of a large tree, or, perhaps more frequently, on the very edge of overhanging rocks, and is composed of sticks and plastered inside with a thick lining of mud. It is from 4½ to 6 feet in diameter, dome-shaped, with a lateral entrance, and is divided into three chambers, in one of which its two large eggs are laid. The entrance is by a narrow tunnel on a level with the bottom, and is always placed in such a position as to be difficult of access, though the nest itself may be quite easy to approach. Probably

from this conspicuous nest, as well as from the grave and sedate way in which the Tàkatra marches about seeking for its food, many native superstitions have gathered about the bird, one of which is that those who destroy its nest will become lepers. And while the Hova and central tribes were still idolaters it was believed that it was very unlucky should a Tàkatra fly across the path along which the idols were being carried; in such case they were immediately taken back to their dwelling-house. Another native superstition is, that if the Tàkatra takes the hair of any person from whose head it has just been cut, and uses it as material in building its nest, such person becomes at once bald.

A considerable number of native proverbs refer to the Tàkatra, some of which may be here translated. Thus, the plume or crest at the back of its head is mentioned in these: "Stooping down and showing the crest, like a Tàkatra stalking after a frog;" "Hair in a large knot, like the Tàkatra's plume." Its habits are noticed in the following: "Going along the stream, like the Tàkatra;" and, "A Tàkatra by the waterside: not sleeping, but in deep thought;" and its nest in these: "The Tàkatra finished a nest, so the Owl gave himself airs;" and, "A Tàkatra's nest entered by an Owl; the stingy one is injured by the evil one." There is a pun, or at least a play of words, in these two: "*Izay tàkatry ny aina, hoy ilay namahan-Tàkatra*," i. e. "Doing one's utmost (*tàkatra*); said the one who was entertained by a Tàkatra;" and, "*Toy ny alahelon-Tàkatra: raha faly, miara-MITOKAKA; raha ory, miara-MITOKIKY*," i. e. "Like the Tàkatra's sympathy: when you are glad, he laughs with you; when you are sorrowful, he shrinks back with you;" that is, I suppose, that it is all the same to him whatever befalls you, for his note never alters.

Besides the Tàkatra, there is the Open-billed Stork (*Anastomus madagascariensis*), which, according to M. Pollen, is almost always found together with some of the Ibises and other shore-birds. They live in companies of from six to twelve individuals, at river-mouths, feeding on crustacea and mollusks, from which habit comes their name of *Famàkiakóra*,

Tabular List of Madagascar Birds.

(TABLE V.)

English Name.	Scientific Name.	Hova or General Name.	Provincial Malagasy Names.
Order VI. GRALLÆ. (WADING BIRDS.)			
Family PARDIDÆ. (JACANAS.)			
White-necked Jacana	<i>Parra albinucha</i> *.		Vorontsamiñy (T., N.B.), Simadékitatana (N.S.), To- lohoro (Tanosy). Tsimàva-titimàva (N.B., Antk.).
African Jacana	<i>Parra africana</i> .		
Family RALLIDÆ. (RAILS.)			
African Rail	<i>Rallus gularis</i> .	Tsika.	Tsikôza (in all the dialects). Angôly (S.Co.).
Madagascar Rail	<i>Rallus madagascariensis</i> .		Herihery (T., Tm.), Tsikôza (N.S., N.B.), Kitânôtano (Sik.).
Grey-faced Rail	<i>Canirallus griseifrons</i> .	Otrika.	Akôholàlindrano (Bs., T.).
Dwarf Crane	<i>Porzana pygmaea</i> .	Ménamiso (Bs., N.B.).	Mangànanahitra (Bs.), Voron- ampômbô (T.), Kisa (N.B.).
Waters' Crane	<i>Porzana watersi</i> .		
Island Crane	<i>Porzana insularis</i> .	Fangalatrôvy.	Biry (Ba.).
Madagascar Water-hen	<i>Gallinula chloropus</i> PYRHO- RHOA.		Hoitiky, Hoétrika (N.B.), Arêta (N.S.).
Blue-backed Porphyrion	<i>Porphyrion smaragdinus</i> .	Taléva, and so in all the dia- lects.	Vatry (S.).
Allen's Porphyrion	<i>Porphyrion alleni</i> .		Hosétrika, Talévakely (N.B.).
Crested Coot	<i>Fulica cristata</i> .	Vantsiona.	Otrika (T.), Tsolia (S.).

(TABLE V., continued.)

English Name.	Scientific Name.	Hova or General Name.	Provincial Malagasy Names.
Order VII. HERODIONES. (HERONS.)			
Family ARDEIDÆ. (TRUE HERONS.)			
Common Heron	<i>Ardea cinerea</i> .		Vandanitra (Ba.).
Black-necked Heron	<i>Ardea atricollis</i> .		Langororoanga (Bs.), Dan-
Humboldt's Heron	<i>Ardea humboldti</i> .		goro (Ba.), Langoro (T.),
Purple Heron	<i>Ardea purpurea</i> .		Langorovalafa.
Giant Heron	<i>Ardea goliath</i> .	Vanobè.	Langorobè (N.S.).
Great White Heron	<i>Ardea alba</i> .	Vanofotsy.	Langorofotsy.
Little Egret	<i>Ardea garzetta</i> .	Vàno.	Dangorofotsy, in most dialects.
White-winged Heron	<i>Ardea gularis</i> .	Fotsielatra.	Dangoromainty (Bs., T.), Fan-
Slaty Heron	<i>Ardea ardesiaca</i> .	Fiandrivoditlatra.	gàimotivôay (N.S.).
Squacco Heron	<i>Ardea ralloides</i> .	Vorompôtsy (Bs., T.).	Sikôtry (Ba.), Kiriaka (T.),
Buff-backed Heron	<i>Ardea bubulcus</i> .		Langoraoanby (N.S.), Vâ-
Ida's Egret	<i>Ardea idæ</i> .		ronôsy, Voronaomby (N.B.),
Dwarf Heron	<i>Ardea podiceps</i> .		Voronkôtsy (Tn.), Voron-
			gôntsy, Kitândry (Proc.).
			Tinomaritô, Gôadrano (N.S.),
			Andêvoronkôsy (Tend.).
			Voromâina.

Black-capped Heron	<i>Butorides atricapillus</i> .		Vangamainty (N.S.), Vangamainty, Gódránokely (S.), Tambákorátsy, Vórompátsa (Bm.). Gódráno (Prov.).
European Night-Heron	<i>Nycticorax griseus</i> .		
Family CICONIIDÆ. (STORKS.)			
Tufted Umbre	<i>Scopus umbretta</i> .	Takatra, and so in all the dialects.	Takahiaka (So.).
Madagascar Open-billed Stork ..	<i>Anastomus MADAGASCARIENSIS</i>		Falamákváva (I.), Famákiakora, Mizóa (N.S.).
African Tantalus	<i>Pseudotantalus ibis</i> .		Méfo.
Family PLATALEIDÆ. (SPOONBILLS AND IBISES.)			
Slender-billed Spoonbill	<i>Platalea tenuirostris</i> .	Sótrováva (Ba.).	Sótrosény (So.), Fangádiambáva (Bm.), Vórondioko (S.B.).
Glossy Ibis	<i>Plegadis falcinellus</i> .	Manarana (Tm.).	Kóbabéo (S.), Manarandý (S. W. Co.), Fitosivy (Bm.).
Bernier's Ibis	<i>Ibis BERNIERI</i> .		Fitilibény (N.S.), Vóronósy (S.S.), Manarasoifotsy (Tanósy).
Crested Ibis	<i>LOPHOTIBIS CRISTATA</i> .	Akóhonála, and so also in almost all the dialects.	Akóholahimála (Ba.), Akóhohitse, Tsikoko, Lampiro (N.B.).
Family PHENICOPTERIDÆ. (FLAMINGOES.)			
Scarlet Flamingo	<i>Phenicopterus erythreus</i> .	Sámabé.	Saimby, Sámaka (Prov.).

or "Shell-breaker." This Stork is not confined to the sea-shores, but is also found in the neighbourhood of the inland lake of Alaotra in Antsihánaka. The peculiar bill of these Storks is also referred to in another of their names, *Falàmù-kavàva*. As for the meaning of the name of the Takatra, it is probably identical with the root *takatra*, "reached," "attained to," and so refers to its stretching out its neck and legs in searching for food.

(3) One species of Spoonbill is included in the Malagasy list. Its native names of *Sòtrovava* and *Sòtrosòny* have the same meaning as its English name; while another name, *Fangadiambava*, means "Spade-mouthed."

Three species of Ibis are among the shore-birds of this island, one of them of a peculiar genus, *Lophotibis*, of which M. Grandidier says that its very different proportions separate it most distinctly from the very homogeneous group of the true Ibises." This bird is chestnut-brown in colour; the Glossy Ibis is dark brown; the Bernier's Ibis is white, with black head and points of wings and tail. Of the first of these birds, M. Pollen says that it generally goes in couples, runs exceedingly fast, flies very rapidly, and perches at evening on the trees, where it utters during the night loud cries resembling those of the Owls. Immediately this Ibis perceives any danger it begins to run, raising at every instant its crest in the same fashion as do our Lapwings, so that it is very difficult to kill it. It is often kept by the natives in their compounds together with their poultry.

The native names of these birds must be briefly noticed. In several of them words meaning "goat" appear, as *Manà-rànsy*, "Goat-Ibis," *Fitilibèngy*, "Goat-watchman," and *Vòronòsy*, "Goat-bird." The Glossy Ibis has the odd name of *Fitosívy*, lit. "Seven-nine"; and the Crested Ibis is called *Akóholàhindála*, "Forest-cock," and *Akòhovòhitse*, "Village-fowl." Other names, as *Lampiro*, *Mèfo*, and *Kòbabèò*, are obscure. The word *Manàrana* seems to be used as a generic name for these Ibises; but whether it is the same word as the verb *manàrana*, meaning "to indulge," "to gratify,"

"to satiate," &c., I cannot say. This word is also used in a general way for the Cormorants as well.

(4) The last bird to be noticed in this Order of Herons is a species of Flamingo. This bird, according to M. Grandidier, is not very rare on the west coast, although it is so more to the north and the east. Mr. Cory also says: "This bird is found in Imèrina, particularly at Lake Itàsy, where I have often seen it. The flesh is extremely good eating. I have never tasted any meat—fish, flesh, or fowl—to equal it." Its native name of *Sàmaka* is particularly appropriate and descriptive, for it means "disunited," "split," referring to its immensely long legs. Its other name of *Sàma*, or *Sàmabè*, means "Large-mouthed."

Mr. W. Wilson remarks as to the Flamingo: "The *Sàmabè* or *Anjòmbona* (so called from its trumpeting cry, *anjòmbona* being the native name for a large species of *Triton*-shell used as a trumpet) is, as seen in Màndridràno, an exceedingly handsome bird; it has a white body with a most delicate pink tinge pervading the whole of the underpart of the wings. In the adult male bird there is a row of small feathers on the wings of a distinct magenta colour. The neck towards the head has a similar but paler colouring.

"An adult male bird I had in my possession stood quite 4 feet high, and even then was not by any means stretched to its full height. They are much larger than any Heron I have seen. When on the defensive, these birds make quite a loud noise by sharply closing and opening their beaks, which are long and powerful. A blow from them would inflict a terrible wound. I have never seen more than nine birds together at or near Itàsy. When on the wing they fly exceedingly high."

[To be continued.]

X.—*On the Avifauna of the Lower Pilcomayo.* By J. GRAHAM KERR, Naturalist to the Pilcomayo Expedition. *With Notes by the EDITOR.*

(Plate III.)

I. *Introduction.*

THE Rio Pilcomayo, as is well known, is one of the chief affluents of the Rio Paraguay from the western side. Rising in the Andes of Bolivia, its course to the south-eastward lies through the heart of "El Gran Chaco," an extensive region which has resisted with unusual success most of the numerous attempts at its exploration. As well from its geographical position as from the high-flown fictions which have been written of it by various South-American authors, great hopes were entertained of its turning out a very paradise to the zoologist and botanist. In the beginning of 1889 an opportunity presented itself for the investigation of its biological features: a large expedition was fitting out for the exploration of the Pilcomayo, and the leader of this, Capt. Juan Page of the Argentine Navy, was good enough to intimate to Mr. Sclater his willingness to allow a naturalist to accompany him. Hence it was that I became naturalist to this expedition. The readers of 'The Ibis' have been kept well informed of the progress of the expedition from time to time, and it will not therefore be necessary to say more than a few words regarding it here.

Upon January 1st, 1890, the expedition left Buenos Ayres on board the specially-built steamer 'Bolivia.' After a tedious journey up the Paraná, and a further stoppage at Puerto Juarez Celman, opposite the city of Corrientes, the mouth of the Pilcomayo was reached early on March 12th, and the same afternoon the 'Bolivia' entered the river. Eleven days of comparatively uninterrupted navigation along its narrow and extremely tortuous waters brought the expedition to "Las Juntas," the point at which the two branches, of which the Pilcomayo is said to consist for a great part of its course, unite. The 'Bolivia' now entered the northern branch of the river, and immediately its progress became very

slow. After nearly three months of great labour only a few miles' further advance was made, and then, on June 13th, the expedition came to a full stop at the point which was afterwards named "Fortin Page." The 'Bolivia' was now hard and fast aground; the dry season had set in; and the river had fallen greatly. Advance and retreat were alike impossible. Provisions gave out, the military part of the expedition left in a body, and other parties which were sent down the river for supplies never returned. Then the leader and the doctor both succumbed, and the small remainder, some nine men all told, were left with the 'Bolivia.' This small remnant remained at Fortin Page undergoing various hardships and under the constant *espionnage* of the Indians, until they were reached on October 4th by a military relief expedition sent out to search for them. After the arrival of the rescuers, several months longer were spent at and in the neighbourhood of Fortin Page, and it was not until March of this year (1891) that I was forced to leave the 'Bolivia,' and to come away on muleback, bringing with me such portions of my collections as it was possible under the circumstances to convey.

This paper, then, refers more especially to the neighbourhood of Fortin Page, a district which I regard as fairly typical of a very large area of the "Gran Chaco," and on the physical characteristics of which I may be allowed to say a word or two. For many miles around the country is flat and low-lying—an almost dead-level plain, covered with long grass, dotted with Carandai palms, and liable to periodic inundations. The open expanse of this "*palmar*" is broken by occasional isolated patches of dicotyledonous forest, composed of small and scrubby trees, and never of any great extent. These form what is called by the Argentines "*monte duro*." Along the banks of the river there runs a zone of open woodland, or in places brushwood. By far the greater part of the district is occupied by the open *palmar*, and the region is essentially one of llanos or campos, and not of forest. On the lower portions of the Pilcomayo—from about "Las Juntas" the

banks are higher and less exposed to inundation—the palmar disappears and the dicotyledonous forests increase greatly in luxuriance and extent. The borders of the Chaco both on the west and east appear to possess a very much richer fauna and flora than its interior.

The list which follows may, I think, be taken as giving a fairly good idea of the general facies of the avifauna of the interior of the Chaco, but by no means of the richly forest-clad regions upon its borders.

In concluding these remarks, I must record my great indebtedness to Mr. Sclater for his invaluable advice and assistance.

II. *List of Birds collected upon the Lower Pilcomayo.*

The numbers enclosed in parentheses refer to skins which I have brought home, and of which I have been able to confirm the identification by comparison with marked specimens in the British Museum.

The following are the principal localities mentioned:—

“*Estancia Gil*,” situated upon the left bank of the Pilcomayo, close to its mouth.

“*Las Juntas*,” lat. $24^{\circ} 56'$ S., long. $58^{\circ} 15'$ W. (*Storm.*)

“*Fortin Nueve*,” lat. $24^{\circ} 53'$ S., long. $58^{\circ} 30'$ W. (*Page.*)

“*Fortin Donovan*,” lat. $24^{\circ} 52'$ S., long. $58^{\circ} 40'$ W. (*Page.*)

“*Fortin Page*,” lat. $24^{\circ} 47'$ S., long. $58^{\circ} 45'$ W. (*Page.*)

These positions can only be regarded as approximate.

The nomenclature and arrangement are those of Sclater and Hudson's ‘*Argentine Ornithology*,’ to which work a reference is given after the name of every species that is mentioned in it.

1. *TURDUS LEUCOMELAS.* (*Op. cit.* i. p. 1.)

(No. 116, ♀.) Near Fortin Page. May 26th, 1890.

Observed only once. The specimen was feeding on low open ground near the river in company with *T. rufiventris*.

2. *TURDUS RUFIVENTRIS.* (*Op. cit.* i. p. 3.)

(No. 89, ♂.) Fortin Donovan. May 3rd, 1890.

Abundant on the Pilcomayo, where it frequents the open woods and brush. Its favourite feeding-grounds are the

open spaces near the river and liable to occasional flooding from it. On one occasion I observed this species fishing in a shallow pool, pursuing the small fishes and shrimps by hopping after them from one end of the pool to the other.

3. *POLIOPTILA DUMICOLA*. (*Op. cit.* i. p. 12.)

(No. 156, ♂; 157, ♀.) Fortin Page. July 7th, 1890.

Very common in all the open woods along the banks of the Pilcomayo, where it is seen actively hopping about the terminal branches of the trees after the manner of a Titmouse, and occasionally uttering a succession of notes:—*whe, whe-whe-whe-pe-wee*.

4. *TROGLODYTES FURVUS*. (*Op. cit.* i. p. 13.)

Very common.

5. *PARULA PITIAYUMI*. (*Op. cit.* i. p. 20.)

(No. 41, ♂.) Near Fortin Nueve. April 5th, 1890.

Common in situations similar to and along with *Poliophtila dumicola*.

6. *GEOTHLYPIS VELATA*. (*Op. cit.* i. p. 20.)

(No. 183, ♂; 115, ♀.) Fortin Page. August 30th, 1890.
Occasional: amongst scrub and coarse grass.

7. *BASILEUTERUS AURICAPILLUS*. (*Op. cit.* i. p. 21.)

Rio Pilcomayo. May 3rd, 1890.

Rare.

8. *VIREOSYLVA CHIVI*. (*Op. cit.* i. p. 22.)

(No. 4, ♂.)

Obtained at Fortin Nueve, also at Fortin Page.

9. *CYCLORHIS OCHROCEPHALA*. (*Op. cit.* i. p. 23.)

Fortin Page. May 31st, 1890.

10. *PROGNE CHALYBEA*. (*Op. cit.* i. p. 25.)

(No. 158, ♂.) Fortin Page. July 27th, 1890.

11. *HIRUNDO ERYTHROGASTRA* (Bodd.).

(No. 12, ♂; 12*, ♀.) Puerto Juarez Celman. February 22nd, 1890.

Immense numbers of this Swallow were observed at Puerto Juarez Celman on the Rio Paraná, opposite Corrientes.

[This Swallow was not included in our work, but must be now added to the Argentine avifauna.—P. L. S.]

12. *TACHYGINETA LEUCORRHOEA*. (*Op. cit.* i. p. 30.)
(No. 186, ♂.) Fortin Page. September 2nd, 1890.

13. *EUPHONIA CHLOROTICA*. (*Op. cit.* i. p. 37.)
(No. 18, ♂.) Puerto Bermejo. February 28th, 1891.
In the forests bordering the Rio Paraguay.

14. *TANAGRA SAYACA*. (*Op. cit.* p. 39.)
(No. 74, ♂; 106, ♀.) Fortin Nueve. April 24th, 1890.
Common during the winter months; generally feeding in company with other Tanagers and Finches among the terminal twigs of the larger trees, and also amongst the bushes. About the beginning of September it began to decrease greatly in numbers, and a little later almost entirely disappeared.

[The specimens brought home appear to belong to *T. cyanoptera* rather than to *T. sayaca*. But after what Mr. Allen says about the series collected by H. H. Smith in Matto Grosso (Bull. Am. Mus. N. H. iii. p. 354), I can hardly maintain the supposed distinctness of these two forms.—P. L. S.]

15. *TANAGRA BONARIENSIS*. (*Op. cit.* i. p. 39.)
(No. 124, ♂.) Fortin Page. June 27th, 1890.
Rather frequent during July and August, feeding and associating with *T. sayaca*.

16. *PYRANGA AZARÆ*. (*Op. cit.* i. p. 40.)
(No. 130, ♂.) Fortin Page. July 11th, 1890.
Rare: a few individuals seen about the middle of July.

17. *TACHYPHONUS MELALEUCUS* (Sparrm.); Selater, Cat. Birds Brit. Mus. xi. p. 207.
(No. 169, ♀.) Fortin Page. August 10th, 1890.

Fairly common about the date mentioned.

[This is a new addition to the Argentine avifauna, but might well have been expected to occur here. Natterer obtained specimens of it on the Upper Rio Paraná (Pelzeln, Orn. Bras. p. 212).—P. L. S.]

18. ARREMON POLIONOTUS, Bp.: Sel. Cat. Birds, xi. p. 278. (No. 71, ♂.) Near Fortin Donovan. April 24th, 1890. Frequent in the patches of thick forest on the Pilcomayo. [This is a South-Brazilian species which might well be expected to occur here. Natterer obtained it in Cuyaba. It must be now added to the Argentine list.—P. L. S.]

19. SALTATOR SIMILIS. (*Op. cit.* i. p. 41.)
Rio Pilcomayo. April 18th, 1890.
Common amongst the brush, but less numerous than *S. cærulescens*.

20. SALTATOR CÆRULESCENS. (*Op. cit.* i. p. 42.)
(No. 105, ♂.) Near Fortin Page. May 21st, 1890.
Very abundant amongst the bushes.

21. SALTATOR AURANTIIROSTRIS. (*Op. cit.* i. p. 42.)
(No. 120, ♂; 114, ♀.) Near Fortin Page. May 26th, 1890.

Frequent in similar localities and along with *S. similis* and *S. cærulescens*, but not abundant. Utters a series of chirping notes of small range.

22. GUIRACA CYANEA. (*Op. cit.* i. p. 43.)
(No. 146, ♂.) Fortin Page. July 22nd, 1890.
Along with other Finches in the brush by the river margin. Not common.

23. SPERMOPHILA MELANOCEPHALA. (*Op. cit.* i. p. 45.)
(Nos. 1, 167, 168, ♂.) Fortin Page. August 9th, 1890.
Abundant: in small flocks wherever there is tall coarse grass, amongst which they feed.

24. SPERMOPHILA CÆRULESCENS. (*Op. cit.* i. p. 46.)
Fortin Page. July 22nd, 1890.
Frequent in flocks amongst brush and tall grass along with *S. melanocephala*.

25. PAROARIA CUCULLATA. (*Op. cit.* i. p. 47.)
(No. 64, ♀.) Near Fortin Donovan. April 20th, 1890.
Very abundant in trees and bushes by river-banks. Generally in company with *P. capitata*. On one occasion I counted thirty *P. cucullata* in one small tree.

26. *PAROARIA CAPITATA*. (*Op. cit.* i. p. 48.)

(No. 111, ♂.) Fortin Donovan. May 3rd, 1890.

Equally or even rather more abundant than *P. cucullata*. Especially conspicuous among the bushes upon the river's banks.

27. *CORYPHOSPINGUS CRISTATUS*. (*Op. cit.* i. p. 48.)

Fortin Nueve; Fortin Page.

Not common.

28. *POOSPIZA MELANOLEUCA*. (*Op. cit.* i. p. 52.)

(No. 63, ♂.) Near Fortin Donovan. April 19th, 1890.

Very abundant amongst the terminal twigs of the trees by the river, in company with *Polioptila dumicola* and *Parula pitiaiyumi*.

29. *ZONOTRICHIA PILEATA*. (*Op. cit.* i. p. 58.)

Very abundant everywhere.

30. *EMBERNAGRA-PLATENSIS*. (*Op. cit.* i. p. 62.)

(No. 5, ♀.) Frequently met with in the open palmar with scattered bushes.

31. *CHRYSOMITRIS ICTERICA*. (*Op. cit.* i. p. 64.)

Occasional flocks appeared during the winter, but not common.

32. *AMBLYCERCUS SOLITARIUS*. (*Op. cit.* i. p. 72.)

(No. 55, ♂; 122, ♀.) Fortin Nueve. April 13th, 1890.

A very common and characteristic inhabitant of the Chaco, frequenting especially the brush and belt of open wood which usually borders the rivers. Its nest, of the usual elongated flask-shape, and built of coarse brown fibres, depends from the tip of a branch, frequently overhanging the water. Its "song" is very sweet, though extremely short, consisting only of three notes—*whee-hon-ah*!—clear and metallic, and remarkably rich in tone. It also frequently utters a peculiar *miau-w*-like sound, either alone or followed by a couple of abrupt, deep, and peculiarly liquid notes—*miau-w-cū-cū*.

33. *CASSICUS ALBIROSTRIS* (Vicill.); *Scl. Cat. Birds*, xi. p. 323.

Exceedingly common and characteristic. Frequently seen

in large numbers in the tops of the Carandai palms. It feeds chiefly in the open; but its real home is in the recesses of the thick and dense "monte duro," where its deep rich notes strike upon the ear; and its elongated flask-shaped nest may be seen suspended from the trees. The nest is much smaller and more delicate than that of *Amblycercus solitarius*; and the root-fibres of which it is composed are much less coarse, and are black in colour, resembling horsehair.

[This Cassique was originally discovered by Azara in Paraguay, and also occurs in the South-Brazilian province of Rio Grande. It must now be added to the Argentine avifauna.—P. L. S.]

34. *MOLOTHRUS BONARIENSIS*. (*Op. cit.* i. p. 72.)

(Nos. 103 & 104, ♀.) Fortin Donovan. May 18th, 1890.
Occasional flocks during winter.

35. *MOLOTHRUS RUFOAXILLARIS*. (*Op. cit.* i. p. 86.)

(Nos. 136 & 137, ♀.) Fortin Page. July 12th, 1890.
Very common.

36. *MOLOTHRUS BADIUS*. (*Op. cit.* i. p. 95.)

(No. 2, ♀.) Opposite Goya.

Very abundant all along the banks of the Pilcomayo.

37. *AGELEUS RUFICAPILLUS*. (*Op. cit.* i. p. 99.)

(Nos. 99 & 101, ♂.) Near Fortin Donovan. May 13th, 1890.

Occasionally met with in flocks feeding amongst the tall grass, &c., by the edges of marshes.

38. *AGELEUS CYANOPUS* (Vieill.): *Sci. Cat. Birds*, xi. p. 344.

(No. 176, ♂; 160, ♀.) Fortin Page. August 1890.

Seen occasionally in pairs during August and September, feeding amongst bushes near freshwater marshes.

[Mr. Kerr brought home examples of both sexes of this curious species, of which the male is of a uniform black. It was originally discovered by Azara in Paraguay, and Natterer got specimens on the Upper Paraná. It must now be added to the Argentine avifauna.—P. L. S.]

39. *AMBLYRHAMPHUS HOLOSERICEUS*. (*Op. cit.* i. p. 101.)
Occasional amongst the tall bulrushes of the marshes.

40. *ICTERUS PYRRHOPTERUS*. (*Op. cit.* i. p. 107.)
Very common.

41. *APHOBUS CHOPI*. (*Op. cit.* i. p. 108.)
(No. 134, ♀.) Fortin Page. July 13th, 1890.
Many seen during July in the open palmar.

42. *CYANOCORAX CHRYSOPS*. (*Op. cit.* i. p. 110.)
(No. 8, ♂.) Puerto Juarez Celman. Feb. 15th, 1890.
Abundant in the hardwood forests, in company with *C. ceruleus*.

43. *CYANOCORAX CÆRULEUS*. (*Op. cit.* i. p. 110.)
(No. 191, ♀.) Fortin Page. September 10th, 1890.

Very common in the hardwood forests, and occasionally straying out into the open. It has been described as being extremely shy, but I found this to be the case only with the scattered individuals one sees outside the limits of the forest. Within the forest, where it is usually found in company with *C. chrysops*, it even exceeds its companion in boldness and curiosity. It is always the first to catch sight of a stranger within the forest, hopping about in the branches all round him, peering at him curiously, and all the while raising an alarm with harsh cries—*caa-caa-caa*. The natural boldness of the bird was well shown by the behaviour of one shot in the wing by Col. Racedo and given to me. The wing was shattered at the carpal joint, so I snipped off the entire manus and dusted iodoform over the wound to stop the bleeding. The bird remained for several hours very weak from shock and loss of blood, but next morning was again quite lively. It hopped about with the utmost confidence, ate and drank out of my hand, and finally had the presumption to jump up on my knee and begin to tear pieces of flesh out of a bird which I was dissecting at the time.

When out in the open, on the other hand, this species is exceedingly wary and difficult of approach.

The flight of *C. ceruleus* is very weak and undulating, and

its voice is restricted to a harsh scream, not possessing the variety of that of *C. chrysops*.

44. *TENIOPTERA NENGETA*. (*Op. cit.* i. p. 114.)

(No. 66, ♂.) Near Fortin Donovan. April 21st, 1890.

Frequent. Generally to be seen perched on the summits of dead palm-stems, in the low open grounds bordering lagunas, whence it makes sallies after insects. This is one of the species which always collect in large numbers round the great camp-fires, to capture the insects frightened up out of the grass.

45. *TENIOPTERA DOMINICANA*. (*Op. cit.* i. p. 117.)

Fortin Page. August 2nd, 1890.

46. *TENIOPTERA IRUPERO*. (*Op. cit.* i. p. 118.)

Very frequent in the open places, where it is very conspicuous, as it sits motionless on the summit of a bush, tempting one to believe that the brilliant white colour has been developed for the purpose of attracting its insect-prey.

Like *T. nengeta*, this species always collects in numbers round the camp-fires.

47. *FLUVICOLA ALBIVENTRIS*. (*Op. cit.* i. p. 121.)

(No. 90.) Occasionally seen hopping about among the drift wood at the water's margin, but not common.

48. *ARUNDINICOLA LEUCOCEPHALA*. (*Op. cit.* i. p. 122.)

Rare; found in reed-beds.

49. *SISOPYGIS ICTEROPHRYS*. (*Op. cit.* i. p. 125.)

(No. 145, ♂.) Fortin Page. July 21st, 1890.

50. *CNIPOLEGUS CINEREUS*. (*Op. cit.* i. p. 128.)

(No. 389, ♀.) A single female of this species was obtained on the Pilcomayo.

51. *LICHENOPS PERSPICILLATUS*. (*Op. cit.* i. p. 129.)

(No. 180, ♀.) Fortin Page. August 18th, 1890.

Frequent, but by no means so abundant as it is in the Pampas.

52. *MACHETORNIS RIXOSA*. (*Op. cit.* i. p. 131.)
(No. 44, ♂ juv.)

The commonest of the Tyrannidæ on the Pilcomayo. Very abundant by the water's margin, where they are seen feeding in pairs, each pair having possession of a definite extent of the river's margin for themselves, and violently resenting any intrusion upon it by other birds of their own species.

53. *EUSCARTHUS MARGARITACEIVENTRIS*. (*Op. cit.* i. p. 136.)
(No. 38, ♂.) Near Fortin Nueve. April 4th, 1890.
Frequent amongst brush by the river.

54. *PITANGUS BOLIVIANUS*. (*Op. cit.* i. p. 147.)
(No. 93, ♀.) Near Fortin Donovan. May 3rd, 1890.
Very common. Often seen sitting on the topmost twigs of the trees. Occasionally observed fishing like a Kingfisher.

55. *PYROCEPHALUS RUBINEUS*. (*Op. cit.* i. p. 152.)
At times very common.

56. *MYIARCHUS TYRANNULUS*. (*Op. cit.* i. p. 156.)
(Nos. 60, 81, ♂.) Near Fortin Nueve. April 14th, 1890.

Very common in forest and among trees on river banks. Hops about with its crown-feathers elevated as a crest.

57. *MYIARCHUS PEROX*. (*Op. cit.* i. p. 156.)
Frequent, but much less abundant than *M. tyrannulus*.

58. *MILVULUS TYRANNUS*. (*Op. cit.* i. p. 160.)
(No. 196, ♂.) Fortin Page. September 16th, 1890.
Very common in spring and summer.

59. *PACHYRHAMPHUS VIRIDIS* (Vieill.): Sclater, Cat. B. xiv. p. 338.

- (No. 138, ♂.) Fortin Page. July 12th, 1890.

[The single specimen brought home is undoubtedly of this species. It is a well-known South-Brazilian bird, and must now be added to the Argentine avifauna.—P. L. S.]

60. *PACHYRHAMPHUS POLYCHROPTERUS*. (*Op. cit.* i. p. 162.)
(No. 214, ♂.) Near Fortin Page. December 22nd, 1890.

61. *CASIORNIS RUBRA*. (*Op. cit.* i. p. 163.)
(No. 73, ♂.) Near Fortin Donovan. April 24th, 1890.

62. *PHYTOTOMA RUTILA*. (*Op. cit.* i. p. 164.)
(No. 140, ♂.) Fortin Page. July 1890.

63. *FURNARIUS RUFUS*. (*Op. cit.* i. p. 167.)
(No. 112, ♂.) Fortin Donovan. May 3rd, 1890.
Very common.

64. *SYNALLAXIS FRONTALIS*. (*Op. cit.* i. p. 178.)
(No. 91, ♀.) Near Fortin Donovan. May 3rd, 1890.

65. *SYNALLAXIS CINNAMOMEA* (Gm.): Sclater, Cat. B. xv.
p. 50.

(No. 174, ♂.) Fortin Page. August 12th, 1890.

Occasionally met with amongst the bulrushes by the borders of the marshes.

[A South-Brazilian species that might well be expected to occur here. Mr. H. H. Smith obtained examples in Matto Grosso, and Mr. Joyner in Rio Grande do Sul. It is, however, new to the Argentine list.—P. L. S.]

66. *SYNALLAXIS MAXIMILIANI* (d'Orb.): Sclater, Cat. B.
xv. p. 56.

(No. 207, ♀ ?) Fortin Page. November 25th, 1890.

Not common, and liable to be overlooked owing to its shy and inconspicuous habits. Frequents the margin of the "monte duro," never leaving it altogether, and hopping about amongst the low bushes. Extremely shy, always endeavouring to keep hidden behind a branch or other object.

[The specimen belongs, as might have been anticipated, to *S. maximiliani*, and not to its northern ally *S. torquata*. Azara discovered the species in Paraguay. It is very scarce in collections, and there is only one imperfect example of it in the British Museum.—P. L. S.]

67. *SYNALLAXIS PHRYGANOPHILA*. (*Op. cit.* i. p. 181.)

(No. 179, ♂ ; 13, ♀.) Fortin Page. August 18th, 1890.

One of the commonest Spine-tails in the Chaco, abundant wherever there is open ground. Has a pleasing gurgly song.

68. *SIPTORNIS STRIATICEPS*. (*Op. cit.* i. p. 182.)

(No. 80, ♂.) Near Fortin Donovan. April 28th, 1890.

69. *PHACELLODOMUS STRIATICOLLIS*. (*Op. cit.* i. p. 194.)

(No. 109, ♂ ; 110 ♀.) Fortin Donovan. May 3rd, 1890.

Exceedingly common, frequenting the zone of brushwood which borders the river. It is always seen in pairs, and their song is, like that of many of their congeners, a duet between male and female. One bird utters a sharp call-note, the other answers, and then begins a succession of clear hard notes—at first distinct, then becoming shorter and more rapidly repeated, until at last they become fused together in a tumultuous rush of notes. The two birds sing in concert, one being throughout a few notes ahead of the other.

The nest is a large twig-built structure, dependent from the end of a branch, which it weighs down until, in some cases, it nearly touches the ground.

70. *SITTOSOMUS OLIVACEUS* (Max.) : Sclater, Cat. B. xv. p. 119.

(No. 77, ♂.)

Common. In habits resembles *Picolaptes angustirostris*. Song of subdued whistle-like notes, in tone resembling the call-note of the Charata.

[This widely distributed bird, already met with at Chapada, in Matto Grosso, by H. H. Smith (*l. s. c.*), must now be added to the Argentine list. It is curious that White's specimen from Oran (now in the British Museum) belongs certainly to the allied species *S. erithacus*. Cf. Arg. Orn. i. p. 198.—P. L. S.]

71. *PICOLAPTES ANGUSTIROSTRIS*. (*Op. cit.* i. p. 201.)

(No. 177, ♂.) Fortin Page. August 17th, 1890.

Extremely abundant—one to be seen on almost every tree-trunk, round which they work up spirally in a succession of hops. Alighting on a tree, as it sets to work it utters a short gurgly scrap of song. Like most of the *Passeres* here, it is very tame, showing absolutely no fear of man. On one occasion a bird of this species went down one of our hatchways which had been left open, and was discovered pecking away at a skin of lard which was hanging in the hold. In this bird the optic axes of the eyes are much less divergent than in most others, producing a very curious appearance when it looks full at one with both eyes.

72. *XIPHOCOLAPTES MAJOR*. (*Op. cit.* i. p. 201.)

(No. 356, ♂ ; 10, ♀.) Fortin Page. August 1890.

Abundant, especially in the open woodlands. It ascends the tree-trunks vertically in a succession of hops. Clinging to the bark, its head thrown back and its mouth wide open, it utters a low continuous squeaky sound, interspersed with very characteristic, clear, abrupt notes, which are uttered in pairs and regularly descend in pitch. Like *Picolaptes angustirostris*, this species is very tame and allows one to approach very close, though as a rule it endeavours to keep on the far-away side of the trunk. One often sees one of them descending a vertical stem in a succession of drops, dropping a foot or so at a time, and instantly checking itself without apparent effort. On several occasions I have observed *X. major* feeding on soft ground, using its long bill as a spade, and moving about by hops.

73. *XIPHORHYNCHUS LAFRESNAYANUS* (d'Orb.) : Sclater, Cat. B. xv. p. 160.

(Nos. 79, 161, ♂.) Near Fortin Donovan. April 26th, 1890.

Frequent. In general habits it resembles a *Picolaptes*, except that the bill serves only as probe and forceps. In the Pilcomayo specimens the bill is even more than its usual length. I have seen this bird, when it held an insect in the tip of its bill, slide the latter down against the edge of a branch, and so push the insect down to within reach of

the very short tongue, and thus enable the operation of swallowing to be performed.

[New to the Argentine list, but quite likely to occur in this district.—P. L. S.]

74. *THAMNOPHILUS MAJOR*. (*Op. cit.* i. p. 203.)

(No. 170, ♂.) Fortin Page. August 10th, 1890.

Very common amongst the bushes, and the male very conspicuous from his sharply contrasted colours. They live entirely upon the ground or amongst the lower branches of bushes. The male and female sing in concert, sitting upon low branches near one another. They utter a succession of sharp chick-like notes, at first quite distinct, but gradually becoming more rapid and passing into a confused trill, which finally winds up in a curious *miauw*-like sound. The bird also frequently utters this peculiar cat-like cry only.

75. *THAMNOPHILUS AMBIGUUS* (Sw.): Selater, Cat. B. xv. p. 201.

(No. 37, ♂.) Near Fortin Nueve. April 4th, 1890.

Only a single specimen of this Bush-bird was obtained. In consequence of its imperfect state, the tail-feathers being absent, its identity is not absolutely certain. Mr. Selater, however, thinks it most probably belongs to *T. ambiguus*, which has been met with previously in the not very distant province of Matto Grosso, by Mr. H. H. Smith.

76. *THAMNOPHILUS RADIATUS* (Vieill.): Selater, Cat. B. xv. p. 210.

(No. 87, ♂ jr.; 151, ♂; 152, ♀.) Fortin Page. July 26th, 1890.

Common amongst bushes, resembling in habits *T. major*. Hops about with its crest usually elevated. Its song consists of a low clear note, several times repeated and ending in a slight trill.

[It was quite to be expected that this species, the *Batara listado* of Azara, would occur on the Pilcomayo.—P. L. S.]

77. *HYDROPSALIS FURCIFERA* (Vieill.): Selater, P. Z. S. 1866, p. 142.

Very common. Many were seen skimming over the water's surface of the Pilcomayo during the night.

[Azara's *Ibiyaú cola de tixera* (no. 309) became the *Caprimulgus furcifer* of Vieillot. Therefore the *Hydropsalis* of the Pilcomayo should probably bear this name. But I am not sure that it is different from *H. torquata* of Brazil.—P. L. S.]

78. *HYLOCHARIS SAPPHIRINA*. (*Op. cit.* ii. p. 8.)

Although frequently seen, Humming-birds occurred singly and in small numbers, and were very shy. The only specimens which I shot (three) belonged to the above-named species. I am certain that at least two other species occur, but I did not manage to obtain specimens, and so could not identify them with any certainty. *H. sapphirina* was obtained at Puerto Bermejo, and at Fortin Page on the Pilcomayo. In the latter case it was met with on acacia-blossoms.

79. *COLAPTES AGRICOLA*. (*Op. cit.* iii. p. 24.)

(No. 108, ♂; 139, ♀.) Fortin Donovan. May 3rd, 1890.
Abundant in the palmar, going in small flocks, and feeding chiefly on ants.

80. *CHLORONERPE CHRYSOCHLORUS* (Vieill.) Hargitt, Cat. Birds, xviii. p. 72.

(No. 72, ♂; 75, ♀.) Near Fortin Donovan. April 24th, 1890.

Occasionally met with.

[One of Azara's discoveries in Paraguay (his *Carpintero verde dorado*), and consequently quite to be expected on the Pilcomayo.—P. L. S.]

81. *CHRYSOPTILUS CRISTATUS*. (*Op. cit.* ii. p. 21.)

(Nos. 58, 59, & 61, ♂; 40, ♀.) Near Fortin Nueve. April 13th, 1890.

Very common, coming next after *Colaptes agricola* and *Campephilus leucopogon* in point of abundance. Frequents chiefly the open woodlands. Occasionally feeds on the ground, but more often on trees. It often perches crosswise on a branch. The nest is in a hollow palm-stem.

82. *LEUCONERPE CANDIDUS*. (*Op. cit.* ii. p. 23.)

(No. 117, ♀.) Near Fortin Page. May 27th, 1890.

Very uncommon. The stomachs of two individuals examined contained only honey.

83. *PICUS CACTORUM*. (*Op. cit.* ii. p. 19.)

(No. 113, ♂; 187, ♀.) Near Fortin Page. May 24th, 1890.

Frequent: observed on many kinds of trees, but never on cacti.

84. *PICUS MIXTUS*. (*Op. cit.* ii. p. 19.)

(No. 159, ♂; 96, ♀.) Fortin Page. July 30th, 1890.

Frequent.

85. *DENDROBATES OLIVINUS* (Malh.): Hargitt, Cat. Birds, xviii. p. 356.

(No. 53, ♂; 92, ♀.) Near Fortin Nueve. April 13th, 1890.

Occasionally met with.

[This species was omitted in 'Argentine Ornithology,' but a specimen believed to be from Corrientes, now in the British Museum, was long in my collection, and examples of it were obtained by Natterer and H. H. Smith in Matto Grosso. It is probably the *Carpintero pardo dorado* of Azara. Cf. v. Berlepsch, J. f. O. 1887, p. 20.—P. L. S.]

86. *CELEUS KERRI*. (Plate III.)

Celeus lugubris, v. Berlepsch, J. f. O. 1887, p. 22 (?).

Celeus kerri, Hargitt, Ibis, 1891, p. 605.

(Nos. 95 & 33, ♂; 25, ♀.) Near Fortin Donovan. May 4th, 1890.

This new Woodpecker I met with not unfrequently during the whole period of my stay on the Pilcomayo, where it inhabits the open woods as well as the thick forest. It draws one's attention chiefly by the shabbiness of its appearance; its crested head, of a pale yellow colour, always appears soiled and draggled, and harmonizes with the faded brown and rusty hues of the rest of the body. The whole plumage has, when fresh, a strong odour of musk.

87. *CAMPEPHILUS LEUCOPOGON*.

Campephilus leucopogon, Harg. Cat. B. xviii. p. 466.

Campephatus boiei, Scl. et Salv. Arg. Orn. ii. p. 17.

(Nos. 57 & 67, ♂; 68 & 94, ♀.) Rio Pilcomayo, *passim*.
One of the most abundant Woodpeckers in this region,



and it is also the most conspicuous. As one passes through the open palmar one's attention is frequently called by the loud roll as of a kettledrum, and on looking one finds the sound to be produced by a Boie's Woodpecker, striking its heavy beak in rapid succession against the hollow stem of a dead palm-tree. This species is equally abundant in the thick forest as in the open palmar, and its large size, its bright red head, and its martial rat-tat make it very conspicuous. Its ordinary language is a low, soft, and squeaky chattering, uttered when there are two or more of them in company.

Diary, June 12th, 1890.—"As we paddled silently down stream our attention was suddenly arrested by a delicate 'ahem!' as if of a cough to attract one's attention. Again it was repeated, and followed by a suppressed giggle-like sound. We looked at each other, wondering what on earth it could be. At last we caught sight of the performers—a pair of Boie's Woodpeckers, and most amusing it was to listen to and watch them.

"The female pecked away industriously at a tree-trunk with an appearance of the utmost unconcern, yet all the while taking care that the male did not approach too near. After a short while she flew off to a palm at a little distance. The male immediately followed and perched on the same stem near the female. He cocked his beautiful head on one side—uttered innumerable 'he-he-hes,' interspersed with an occasional 'ahem,' all evidently meant to be full of emotion; but the female appeared quite unimpressible and flew off again, and the performance began afresh."

A female of this Woodpecker, which I had alive for some time, showed how the habit of pecking has become quite incorporated into the nature of the bird, so that even when terribly frightened or severely wounded it will every now and then give an involuntary and almost convulsive peck.

88. *CEOPHLEUS LINEATUS* (Linn.): Hargitt, Cat. Birds, xviii. p. 508.

(Nos. 127 & 31, ♂; 26, ♀.) Fortin Page. July 3rd, 1890.

Occasionally met with.

[This wide-ranging species has already been recorded from Matto Grosso (*H. H. Smith*), but is new to the Argentine avifauna.—P. L. S.]

89. *PICUMNUS PILCOMAYENSIS*, Hargitt, Ibis, 1891, p. 606. (No. 6, ♂; 125, ♀.) Fortin Page. June 28th, 1890.

This tiny little Woodpecker is not uncommon in the Gran Chaco, where it frequents the terminal branches of the trees, both in the forest and in the open. It hops about with great activity, and frequently, by striking its beak against the branch with great rapidity, produces a continuous "*br-r-r*," which is very characteristic.

Observed frequently on the Pilcomayo, and also at Puerto Bermejo (Timbó) on the Paraguay; and on an island in the Paraná opposite the town of Empedrado.

[We fear that Mr. Hargitt's name for this species may have to give way to the prior claims of *Picumnus azaræ* (Cab. & Heine, Mus. Hein. iv. pt. 2, p. 20), as it is obvious that the Pilcomayo bird must be the same as that of Paraguay—the *Carpintero enano* of Azara. At the same time it is possible that the type of *Picumnus azaræ* may not be identical with the Paraguay bird.—P. L. S.]

90. *CERYLE TORQUATA*. (*Op. cit.* ii. p. 26.)

(No. 23.) Abundant. During the height of the dry season many of these Kingfishers were to be seen flying high overhead, evidently on the outlook for fishing-grounds not yet dried up.

91. *CERYLE AMAZONA*. (*Op. cit.* ii. p. 27.)

(No. 51, ♀.) Abundant. On April 25th, just after sunrise, I was surprised to hear a male of this species sing. He sat upon the summit of a dead branch projecting from the water, his body raised up, almost vertically, and his wings expanded. The song was composed of a rapid succession of chirping notes somewhat like those of the common Oven-bird, but more chirpy in tone. On another occasion (May 6th, 1890) I observed *Ceryle amazona* fishing in a laguna after the manner of a Sea-Gull, *i. e.* its wings vibrating rapidly, so that it remained almost stationary in the air over the laguna,

and every now and then gliding rapidly down endeavouring to catch the fish as they came to the surface. Occasionally it managed to catch a fish, but most of its efforts were unsuccessful.

92. *CERYLE AMERICANA*. (*Op. cit.* ii. p. 27.)

(No. 48, ♂.) Abundant. Frequently to be seen perched on branches by the sides of the river, uttering a sharp "tick" at intervals. Occasionally they are heard to produce a subdued but very high-pitched whistle—one prolonged note—another bird answering. I also observed *C. americana* fishing over a laguna in the manner mentioned of *C. amazona*; but it was even less successful than its larger relative, for I did not see it catch a fish, though I watched it for some time.

93. *TROGON SURUCURA*. (*Op. cit.* ii. p. 29.)

(No. 52, ♂.) Near Fortin Nueve. April 10th, 1890.

Uncommon; occasionally met with in the thick forests—generally sitting motionless upon a branch.

94. *CROTOPHAGA ANI*. (*Op. cit.* ii. p. 31.)

Very abundant in all places along the Pilcomayo, but especially where there is open brushwood. They frequently utter a clear piping cry, something like that of the Curlew.

95. *CROTOPHAGA MAJOR*, Linn.: Shelley, Cat. B. xix. p. 428.

(No. 203, ♂; 205, ♀.) Fortin Page. November 11th, 1890. Toba, "Tanrai."

Uncommon. Seen only in midsummer on the Pilcomayo. Utters a short cry "ēh" resembling that of *Busarellus nigricollis*; also a series of rapidly uttered, somewhat whistle-like sounds.

[Not included in 'Argentine Ornithology,' but already recorded from Paraguay by Azara (*Anno guazu*, no. 264) and by v. Berlepsch—*cf.* J. f. O. 1887, p. 23.—P. L. S.]

96. *GUIRA PIRIRIGUA*. (*Op. cit.* ii. p. 32.)

(No. 164, ♂; 165, ♀.) Fortin Page. August 8th, 1890. Very common.

97. *DIPLOPTERUS NÆVIUS*. (*Op. cit.* ii. p. 35.)

(No. 358, ♂ juv.) Fortin Donovan. January 16th, 1891. Toba, "Wōchēn."

Uncommon. Has a sweet dissyllabic cry, heard occasionally at night in the forest. The Tobas believe that possession of one of these birds, or even of a piece of one of them, will bring them good fortune.

98. *PIAYA CAYANA*. (*Op. cit.* ii. p. 36.)

(No. 24, ♂.) Estancia Gil. March 14th, 1890.

Rare. Found feeding on the ground in the thick forest.

99. *COCYZUS MELANOCORYPHUS*. (*Op. cit.* ii. p. 38.)

(No. 210, ♂.) Fortin Page. November 26th, 1890.

Uncommon.

100. *RHAMPHASTOS TOCO*. (*Op. cit.* ii. p. 40.)

(No. 128, ♂; 129, ♀.) Fortin Page. July 8th, 1890.

Frequent.

101. *CONURUS ACUTICAUDATUS*. (*Op. cit.* ii. p. 42.)

(Nos. 201, 206, ♂; 202, ♀.) Fortin Page. October 24th, 1890.

Abundant in spring and summer.

102. *CONURUS NANDAY* (Desm.): *Scl. et Salv. Nomencl.* p. 112.

(No. 141, ♂; 142, ♀.) Fortin Page. July 19th, 1890.

Abundant, in very large flocks, about the neighbourhood of Fortin Page. Frequently associates with flocks of *Bolborhynchus monachus*. One of the favourite foods of these species consists of the berries of the parasitic Lorantheæ, which are so common upon some of the trees.

[This well-known Paraguayan species (the Nendái of Azara) may now be added to the Argentine list.—P. L. S.]

103. *PYRRHURA VITTATA* (Shaw).

Conurus vittatus, Berlepsch, J. f. O. 1887, p. 25.

(Nos. 34, 171, ♂.) Near Fortin Nueve. March 31st, 1890.

Fairly abundant during autumn.

[New to the Argentine avifauna, but already recorded from Paraguay. Cf. v. Berlepsch, *l. s. c.*—P. L. S.]

104. *BOLBORHYNCHUS MONACHUS*. (*Op. cit.* ii. p. 43.)

(No. 149, ♂; 107, 150, ♀.)

Abundant.

105. *CHRYSOTIS ÆSTIVA*. (*Op. cit.* ii. p. 47.)

(Nos. 144, 197, ♂; 198, ♀.) Fortin Page. September 25th, 1890.

Abundant. During spring, especially, their loud cries resound in all directions. Their cry resembles the syllable "caa" uttered in a great variety of inflections, and often amusingly expressive of fright, indignation, and remonstrance, according to circumstance. They nest in hollow palm-trees; and the young are easily tamed and taught to speak.

106. *PIONUS MAXIMILIANI*. (*Op. cit.* ii. p. 47.)

(No. 56, ♂.) Near Fortin Nueve. April 13th, 1890.

Occasionally in considerable numbers, but as a rule uncommon. Goes in small parties.

107. *BUBO VIRGINIANUS*. (*Op. cit.* ii. p. 50.)

(No. 369, ♀.) Near Fortin Nueve. April 2nd, 1890. Toba, "Chigiriki ik."

The commonest Owl on the Pilcomayo. Abundant and conspicuous. Its loud "boo-hoo-hoo" is one of the characteristic night sounds of the Chaco. One of the favourite articles of food of this species consists of large grasshoppers.

108. *SCOPS BRASILIANUS*. (*Op. cit.* ii. p. 51.)

Obtained on the Rio Paraguay, and identified on the Pilcomayo by its cry, which is very characteristic.

109. *GLAUCIDIUM FEROX* (Vieill.): Sharpe, Cat. B. ii. p. 200.

(No. 303.) Fortin Page. October 24th, 1890. Guarani, "Caburé."

[Met with in Paraguay by Azara (No. 49), but new to the Argentine list.—P. L. S.]

110. *TINNUNCULUS CINNAMOMINUS*. (*Op. cit.* ii. p. 69.)

Frequent, and at times abundant.

111. *FALCO ALBIGULARIS* (Daud.): Sharpe, Cat. B. i. p. 401.
(No. 155, ♀.) Fortin Page, July 25th, 1890.

Rather frequent during summer, and occasional during winter. A bird of exceedingly powerful flight.

[Obtained by Natterer in Matto Grosso (*cf.* Pelz. Orn. Bras. p. 5, *Hypotriorchis ruficularis*), but not yet recorded from Argentina.—P. L. S.]

112. *ROSTRHAMUS SOCIABILIS*. (*Op. cit.* ii. p. 72.)

(No. 162, ♀ juv.)

Frequent. Feeds chiefly on crabs.

113. *HERPETOTHERES CACHINNANS* (Linn.): Sharpe, Cat. B. i. p. 278.

(No. 211, ♂.) Near Fortin Page. December 5th, 1890.

Rare. As one approaches this bird sitting on a high branch, it bobs its head up and down, peering at one, and utters a curious cry like a gruff "ha-ha." The stomach of a specimen examined contained the remains of a snake.

[New to the Argentine list, but already recorded from Paraguay by Azara.—P. L. S.]

114. *HARPYHALIAËTUS CORONATUS*. (*Op. cit.* ii. p. 66.)

(No. 132, ♀.) Fortin Page. July 12th, 1890.

Rare. Sometimes seen perched on the topmost branch of a tall dead quebracho-tree. Utters a very loud and shrill cry.

115. *URUBITINGA ZONURA* (Shaw): Sharpe, Cat. B. i. p. 213.

(No. 82, ♀.) Near Fortin Donovan. April 30th, 1890.

Very common. Often seen soaring about the camp-fires. Occasionally feeds on fishes left stranded by the evaporating pools.

[Already known from Paraguay (*Azara*), and quite to be expected to occur on the Pilcomayo.—P. L. S.]

116. *BUSARELLUS NIGRICOLLIS*.

(No. 62, ♂.) Near Fortin Donovan. April 19th, 1890.

Frequent. Usually found perched on the branch of a tree overhanging the river, or by the borders of a marsh. At intervals it utters a curious sheep-like cry, like the syllable

"*eh*" much prolonged. Also occasionally seen soaring. Its most usual food is the ordinary river-crab.

[Recorded from Paraguay by Azara (No. 13) and by v. Berlepsch (J. f. O. 1887, p. 123), but an addition to the Argentine list.—P. L. S.]

117. *ASTURINA PUCHERANI*. (*Op. cit.* ii. p. 58.)

A skin of this species brought home has been compared with specimens in the British Museum.

118. *GERANOÆTUS MELANOLEUCUS*. (*Op. cit.* ii. p. 64.)

Commonly seen soaring in circles at an immense height, especially when attracted by camp-fires. It is very wary and difficult to approach.

119 *HETEROSPIZIAS MERIDIONALIS*. (*Op. cit.* ii. p. 63.)

(No. 175, ♂.) Frequently met with.

120. *ACCIPITER CHILENSIS*, Phil. et Landb.: Scl. et Salv. Ex. Orn. p. 73, t. xxxvii.; Oust. Miss. sc. d. Cap Horn, Ois. p. 21.

(No. 131, ♀.) This specimen has been identified by Dr. Bowdler Sharpe at the British Museum. It is a nearly adult female.

[This species was hitherto known only from Chili and the Magellan Straits, and its occurrence on the Pilcomayo is a fact of much interest.—P. L. S.]

121. *GERANOSPIZIAS CÆRULESCENS*. (*Op. cit.* ii. p. 67.)

Occasional. Flies slowly along at a slight elevation, or sits perched on a tree uttering a prolonged shrill whistle. Feeds chiefly on bats and other small mammals.

122. *POLYBORUS THARUS*. (*Op. cit.* ii. p. 81.)

Very abundant.

123. *CATHARTES AURA*. (*Op. cit.* ii. p. 89.)

Very abundant.

124. *CATHARTES ATRATUS*. (*Op. cit.* ii. p. 89.)

Very abundant; rather more numerous than *C. aura*.

125. PHALACROCORAX BRASILIANUS. (*Op. cit.* ii. p. 91.)

Very abundant both on the Paraná and the Paraguay, as well as on the lower Pilcomayo. On our boat approaching a party of them in the water, they would stretch up their necks and watch us suspiciously for a bit; and then, as we approached nearer, they invariably took to flight. Also to be seen in large numbers perched on trees by the river's bank, especially towards evening and in the early morning. On the Pilcomayo the Cormorant was the only one of the strictly aquatic birds which was to be found in almost equal numbers all through the dry season, when the waters of the rivers and lagunas had become intensely salt. This species has a powerful flight, and many were to be seen flying high overhead, as if traversing long distances.

126. ARDEA COCOI. (*Op. cit.* ii. p. 93.)

Frequent on Rios Paraná, Paraguay, Bermejo, and Pilcomayo. It has a sharp metallic cry resembling the syllables "coc-oi."

127. ARDEA EGRETTA. (*Op. cit.* ii. p. 98.)

Very abundant on the Paraná and on the Pilcomayo near its mouth, but, in common with the other Herons, it disappeared in the dry season.

128. ARDEA CANDIDISSIMA. (*Op. cit.* ii. p. 99.)

Very abundant on the Paraná and the lower Pilcomayo.

129. ARDEA SIBILATRIX. (*Op. cit.* ii. p. 100.)

(No. 123, ♂.) This Heron, which is occasionally met with on the Pilcomayo, has a clear hard whistle, in quality approaching the metallic note of the *Bandurria*. Its flight also differs from that of its congeners, the wings being moved through a very small vertical angle and with much more rapidity than is usual. A specimen upon the ground, when I approached, stood bolt upright, its neck and beak stretched straight upwards, its back towards me, and remained absolutely motionless. The colour of its back assimilated very closely with that of the surrounding vegetation, so that it was almost invisible.

130. *TIGRISOMA MARMORATUM*. (*Op. cit.* ii. p. 104.)

(No. 154, ♂.) Fortin Page, July 25th, 1880. Frequent wherever there is fresh water, keeping mostly to the beds of tall bulrushes, from which, when disturbed, it rises up uttering a loud and hoarse "ha-ha-ha." Occasionally also found on the riverside, generally perched on a branch overhanging the water.

131. *MYCTERIA AMERICANA*. (*Op. cit.* ii. p. 106.)

Seen on the Rio Paraná, Rio Paraguay, and Rio Pilcomayo.

132. *EUXENURA MAGUARI*. (*Op. cit.* ii. p. 106.)

Rare.

133. *TANTALUS LOCULATOR*. (*Op. cit.* ii. p. 108.)

Rare.

134. *PLEGADIS GUARAUNA*. (*Op. cit.* ii. p. 109.)

(No. 190, ♀.) Fortin Page. September 10th, 1890.

Occasional flocks of this Ibis were seen, but not frequently.

135. *THERISTICUS CAUDATUS*. (*Op. cit.* ii. p. 110.)

(No. 213, ♂.) Fortin Page. December 21st, 1890.

Frequent. Flocks were usually found feeding on land that had been recently burnt; also frequently seen soaring. On the Pilcomayo I observed it all the year through, one large flock being seen exactly in the middle of the summer (December 21st),

136. *HARPIPRION CÆRULESCENS*. (*Op. cit.* ii. p. 112.)

(No. 47.) Frequent in the neighbourhood of marshy ground.

137. *PHIMOSUS INFUSCATUS*. (*Op. cit.* ii. p. 113.)

Obtained at Timbó, on the Paraguay, and also near the mouth of the Pilcomayo, and identified by the description in 'Argentine Ornithology.'

138. *AJAJA ROSEA*. (*Op. cit.* ii. p. 114.)

Frequently met with.

139. *CHAUNA CHAVARIA*. (*Op. cit.* ii. p. 119.)

Toba, "Ptaká."

Common. On the Pilcomayo the Chajá was seen always in isolated pairs, never in flocks. When feeding, if their suspicions are aroused in any way they at once fly off, uttering loud cries, and alight on the summit of a dead palm-stem or other elevation from which they have an unobstructed view all round. At night they sleep in similar situations, and are extremely vigilant, at once raising the alarm if any large animal is moving about in the vicinity.

140. *DENDROCYGNA FULVA*. (*Op. cit.* ii. p. 126.)

Obtained near Fortin Donovan about the middle of summer, after the occurrence of heavy rains had caused the formation of several temporary freshwater lagoons.

141. *DENDROCYGNA VIDUATA*. (*Op. cit.* ii. p. 128.)

Obtained along with *D. fulva*.

142. *CAIRINA MOSCHATA*. (*Op. cit.* ii. p. 129.)

Toba, "Waturunyí."

This is the only Duck which I found at all common upon the Pilcomayo itself, it apparently having less objection to salt water than most of its relatives. At night and during the heat of the day they roost in trees near the river. They go to their roost late, and do not leave it till shortly after dawn. They are usually met with in small parties or solitary, but occasionally in flocks of about twenty.

143. *QUERQUEDULA CYANOPTERA*. (*Op. cit.* ii. p. 130.)

Near Fortin Donovan.

144. *QUERQUEDULA VERSICOLOR*. (*Op. cit.* ii. p. 131.)

Near Fortin Donovan.

145. *QUERQUEDULA BRASILIENSIS*. (*Op. cit.* ii. p. 133.)
(No. 360, ♀.) Fortin Donovan. January 12th, 1891.

146. *DAFILA SPINICAUDA*. (*Op. cit.* ii. p. 134.)

Near Fortin Donovan.

147. *SPATULA PLATALEA*. (*Op. cit.* ii. p. 136.)

This and all the above-mentioned Ducks, with the exception

of *Cairina moschata*, were observed during the few weeks immediately following some heavy rains, which had given rise to a number of temporary freshwater lagoons. During a regular rainy season the number of Ducks and other aquatic birds would no doubt undergo an enormous increase.

148. COLUMBA PICAZURO. (*Op. cit.* ii. p. 139.)

(No. 385, ♂; 135, ♀.) Fortin Page. July 14th, 1890. Toba, "Wokoto."

Common. The Picazuro Pigeon is, on the Pilcomayo, very shy of man, and is most frequently seen winging its way rapidly overhead, mostly flying in the same direction. As a rule, they are solitary, and they frequently stop to rest on the top-most twigs of trees or on the dead palm-stems by the margin of the esteros. While sitting there they utter a soft cooing song, which, commencing quite imperceptibly, swells up rapidly to its full volume—"he-oo; coo-coo-caoo; coo-coo-caoo; coo-coo-caoo." At other times they utter a series of abrupt "coo-hoos."

149. COLUMBULA PICUI. (*Op. cit.* ii. p. 143.)

Obtained at numerous points on the Pilcomayo. Along with *Chamæpelis talpacoti* it forms flocks, which feed on the ground amongst the brush by the river. The feet were crimson in the specimens collected.

150. CHAMÆPELIA TALPACOTI. (*Op. cit.* ii. p. 144.)

This and the preceding Dove are exceedingly abundant, feeding together in flocks amongst the brushwood bordering the river.

151. ENGYPTILA CHALCAUCHENIA. (*Op. cit.* ii. p. 144.)

Very common. Feeds in open spots by the margin of the forest, generally two or three together.

152. CRAX SCLATERI. (*Op. cit.* ii. p. 145.)

Only found in the larger forests near the Paraguay.

153. PENELOPE OBSCURA. (*Op. cit.* ii. p. 146.)

Forests of Rio Bermejo and Pilcomayo near its mouth.

154. *ORTALIS CANICOLLIS*. (*Op. cit.* ii. p. 147.)

The "Charata" is exceedingly abundant in all the thick forests of the Pilcomayo. They occasionally descend to the ground to feed, but this is comparatively rare; usually they remain amongst the upper branches of the trees, feeding on various fruits. This is a sociable bird, many being usually found near one another. It is also rather timid; but this quality is in great part masked by its intense curiosity. When one enters a forest in which the Charatas are not accustomed to the sight of man, they examine the intruder curiously, and call their companions with their soft and cheepy call-note. If one remains perfectly still all the birds within hearing collect around, and by answering their call-notes one can bring them down to within a few feet.

If one walks up towards a tree in which are some Charatas, they first utter their soft call-note to draw their companions' attention, and then, as one comes nearer, they begin to hop about uneasily, and their voices rise in pitch by regular gradations until they end in shrill screams, amusingly expressive of fear and timidity.

At times, more especially just about sunrise, the community of Charatas unite together to produce an extraordinary din. They utter loud and very harsh cries, something like the sound of a gigantic rattle, or of the syllables "chacarata, chacarata," from which they get their Guaraní name, "Charata." All the birds in one part of the forest uniting in this, the effect is almost deafening. Other companies of birds answer, and on a fine morning in the Chaco, just after sunrise, one hears these Charata-choruses resounding in all directions.

The Charata is a favourite article of food with the Indians, who attract it by imitating the call-note, and shoot it with bow and arrow. Amongst the Tobas it is called "Cochine," in imitation of its call.

155. *ARAMIDES YPECAHA*. (*Op. cit.* ii. p. 150.)

(No. 46.) Near Fortin Nueve. April 8th, 1890.
Guaraní, "Paca-á"; Toba, "Wata-á."

Very common and conspicuous on the Pilcomayo, where it is to be seen picking its way slowly along the low and muddy margin of the water, carrying its tail cocked upright, and giving it a sharp jerk every few paces. It is also to be found in numbers in the freshwater marshes, where it lives amongst the bulrushes. The Paca-á is one of the shiest birds occurring on the river, keeping a constant and most vigilant lookout, and on the appearance of a stranger at once betaking itself to the shelter of the vegetation, through which it rapidly makes its way without so much as moving a stalk of grass to betray its whereabouts. It only takes to flight if almost trodden upon, and it occasionally perches on a tree. The call-note is a low soft "cluck."

During the evening more especially, but also occasionally at other times, several birds collect together and produce a most extraordinary noise by their cries, resembling a conversation carried on in loud shrieks, now and then varied by all the birds uniting to cry out "oh-whauchee, oh-whauchee," in an endless variety of tone and expression.

156. PORPHYRIO PARVUS (Bodd.): *Scl. et Salv. Nomencl.* p. 140.

(No. 208, ♂; 206, ♀). Fortin Page. November 28th, 1890. Toba, "Nushidót."

Uncommon. In freshwater marshes among bulrushes.

[Widely distributed in South America, but not previously registered in the Argentine list.—P. L. S.]

157. PORPHYRIOPS MELANOPS. (*Op. cit.* ii. p. 158.)

Observed on a lagoon near Pilcomayo. I had become familiar with this species on the pampas at Mate Grande, so am pretty sure of its identity.

158. ARAMUS SCOLOPACEUS. (*Op. cit.* ii. p. 159.)

Obtained near Fortin Nueve, also near Fortin Page.

159. CARIAMA CRISTATA. (*Op. cit.* ii. p. 161.)

Toba, "Lashinik."

The cry of the Cariama is frequently heard in the open palmar, somewhat resembling the cries of *Aramides ypecaha*,

but the bird itself is rarely seen. Like *Chunga burmeisteri*, this species is known to the provincial Argentines by the name "Chuña."

160. *PARRA JACANA*. (*Op. cit.* ii. p. 163.)

Very abundant on every freshwater lagoon, where it may be seen in flocks, walking about and feeding on the floating carpet of *Pistia* and other plants. When disturbed they fly off a short distance, their legs hanging down, and utter shrill cries of "he-he-he."

161. *VANELLUS CAYENNENSIS*. (*Op. cit.* ii. p. 163.)

The Teru-teru is not abundant in the interior of the Chaco, probably owing to so much of the country being covered with very long grass. It was got occasionally during autumn and winter on the Pilcomayo.

162. *ÆGIALITIS COLLARIS*. (*Op. cit.* ii. p. 173.)

(No. 84, ♂; 85, ♀.) Near Fortin Donovan. May 1st, 1890.

Found on the flat sandy margin of the salt lagoons, where it runs about with great rapidity, when it pauses, bobbing its head. The male I have heard utter an almost song-like succession of clear, short, flute-like notes. When approached very close it rises up suddenly into the air with extremely rapid flight, mounting up and up until one loses sight of it. The colour of the bird is exquisitely suited to its surroundings, the brown of its back harmonizing perfectly with the sand, and so making it almost invisible from above, while its white underparts no doubt make it equally so from beneath the water's surface.

It feeds upon small mollusks, insect-larvæ, &c.

163. *HIMANTOPUS BRASILIENSIS*. (*Op. cit.* ii. p. 179.)

(No. 163, ♂.) Fortin Page. August 5th, 1890.

Occasionally seen after the summer rains.

164. *GALLINAGO PARAGUAIÆ*. (*Op. cit.* ii. p. 181.)

This Snipe was met with in considerable numbers by the edges of freshwater marshes in the neighbourhood of Timbó, on the Paraguay. On the Pilcomayo occasional individuals

were obtained along the margins of the river or of salt-water pools, chiefly about Fortin Page, and during the winter and spring months.

165. *TRINGA MACULATA*. (*Op. cit.* ii. p. 183.)

Fortin Page.

166. *TRINGA FUSCICOLLIS*. (*Op. cit.* ii. p. 185.)

(No. 195, ♂.) Pilcomayo.

167. *TOTANUS MELANOLEUCUS*. (*Op. cit.* ii. p. 186.)

(No. 200, ♂.) Fortin Page. September 30th, 1890.

168. *TOTANUS FLAVIPES*. (*Op. cit.* ii. p. 187.)

(No. 193, ♂.) Fortin Page. September 13th, 1890.

169. *RHYACOPHILUS SOLITARIUS*. (*Op. cit.* ii. p. 188.)

(Nos. 192, 194, ♀.) Fortin Page. September 13th, 1890.

170. *PODICEPS ROLLANDI*. (*Op. cit.* ii. p. 204.)

Uncommon.

171. *PODILYMBUS PODICEPS*. (*Op. cit.* ii. p. 206.)

(No. 212.) Near Fortin Page. December 10th, 1890.)

172. *RHYNCHOTUS RUFESCENS*. (*Op. cit.* ii. p. 209.)

The plaintive whistle of this bird was often heard during spring, and one or two specimens were got from the Indians.

173. *CRYPTURUS UNDULATUS* (Temm.).

Only in the thick forests adjoining the Paraguay.

[The single skin of a Tinamoo brought home by Mr. Kerr appears to be an immature specimen of *Crypturus undulatus*, a species which was met with in Paraguay by Azara, and by Natterer in Matto Grosso. It is new to the Argentine list. —P. L. S.]

174. *RHEA AMERICANA*. (*Op. cit.* ii. p. 216.)

Guaraní, "Ñandu"; Toba, "Manik."

Very numerous in the Gran Chaco, but very shy and wary, owing to the constant persecution it undergoes from the Indians. It frequents open ground, especially where there are scattered bushes. The young have a long-drawn

plaintive whistle, which swells on the ear so gradually that it is almost impossible to tell from which direction it comes.

III. *List of the Species new to the Argentine Avifauna.*

[It will be seen by the foregoing list that Mr. Kerr's researches have added the following 29 species to the Argentine avifauna. Most of these additions, it may be remarked, are Paraguayan species which might naturally be expected to occur on the Pilcomayo, so close to the boundary of Paraguay.—P. L. S.]

- | | |
|---|--------------------------------------|
| 1. <i>Hirundo erythrogastra.</i> | 16. <i>Celeus kerri.</i> |
| 2. <i>Tachyphonus melaleucus.</i> | 17. <i>Dryocopus lineatus.</i> |
| 3. <i>Arremon polionotus.</i> | 18. <i>Picumnus pilcomayensis.</i> |
| 4. <i>Cassicus albirostris.</i> | 19. <i>Crotophaga major.</i> |
| 5. <i>Agelaius cyanopus.</i> | 20. <i>Conurus nanday.</i> |
| 6. <i>Pachyrhamphus viridis.</i> | 21. <i>Pyrrhura vittata.</i> |
| 7. <i>Synallaxis cinnamomea.</i> | 22. <i>Glaucidium ferox.</i> |
| 8. — <i>maximiliani.</i> | 23. <i>Falco albigularis.</i> |
| 9. <i>Sittosomus olivaceus.</i> | 24. <i>Herpetotheres cachinnans.</i> |
| 10. <i>Xiphorhynchus lafresnayanus.</i> | 25. <i>Urubitinga zonura.</i> |
| 11. <i>Thamnophilus ambiguus.</i> | 26. <i>Busarellus nigricollis.</i> |
| 12. — <i>radiatus.</i> | 27. <i>Accipiter chilensis.</i> |
| 13. <i>Hydropsalis furcifera.</i> | 28. <i>Porphyrio parvus.</i> |
| 14. <i>Chloronerpes chrysochlorus.</i> | 29. <i>Crypturus undulatus.</i> |
| 15. <i>Dendrobates olivinus.</i> | |

XI.—*On the Birds collected by Mr. F. J. Jackson, F.Z.S., during his recent Expedition to Uganda through the Territory of the Imperial British East-African Company.* By R. BOWDLER SHARPE, LL.D., F.L.S., &c. *With Notes by the Collector.*—Part III.*

(Plate IV.)

THIS third portion of my paper gives a list of Mr. Jackson's collection of Passerine Birds as far as the end of the Turdidæ.

Fam. SYLVIIDÆ.

I have revised the limits of the family Sylviidæ in the manner proposed by Mr. Oates in his 'Fauna of British India,'

* For Parts I. & II., see 'Ibis,' 1891, pp. 233, 587.

whereby all the *Cisticolæ* are removed from their former position in the *Timeliidæ* [*cf.* Cat. B. vii. pp. 235–290]. So little is known of the moulting and changes of plumage of some of the outlying genera of *Sylviidæ* that the exact limits of the family are not yet determinable, but I think that the general idea of the *Sylviidæ* originally proposed by Mr. Seebohm in the fifth volume of the 'Catalogue of Birds,' and enlarged by Mr. Oates (*l. s. c.*), is one which will commend itself to the judgment of ornithologists.

111. *PHYLLOSCOPUS TROCHILUS*.

Phylloscopus trochilus (L.); Fischer, Zeitschr. ges. Orn. i. p. 309 (Paré); id. J. f. O. 1885, p. 141.

No. 96. ♂. Machako's, March 20, 1889.

112. *CRYPTOLOPHA MACKENZIANA*, sp. n.

Cryptolopha umbrovirens (nec Rüpp.); Shelley, P. Z. S. 1889, p. 361 (Kilimanjaro).

C. similis C. umbrovirenti, sed gulâ cinerascenti-albicante, minime umbrinâ distinguenda. Long. tot. 4·6, culm. 0·45, alæ 2·45, caudæ 1·8, tarsi 0·85.

No. 23. ♂. Kikuyu, Aug. 25, 1889.—Upper mandible horn-brown, the lower one pale yellowish white; legs pale horn-blue; irides brown.

No. 289. Mount Elgon, 7000 feet.

I find on comparing Mr. Jackson's specimens with an Abyssinian example that the throat is ashy white instead of clear umber-brown, so that the under surface of the body has a very different appearance. The specimen obtained by Mr. Hunter (*cf.* Shelley, *l. s. c.*) is also referable to *C. mackenziana*.

113. *ACROCEPHALUS PHRAGMITIS*.

Acrocephalus phragmitis (Bechst.); Seebohm, Cat. B. v. p. 91.

Acrocephalus schænobæus (L.); Reichen. J. f. O. 1887, p. 77 (Kagehi).

No. 49. ♂. Ulu, Ukambani, Jan. 7, 1889.

114. *ACROCEPHALUS PALUSTRIS*.

Acrocephalus palustris (Bechst.); Seebohm, Cat. B. v. p. 101.

No. 46. ♂. Ulu, Ukambani, Jan. 5, 1889.

This is apparently a Marsh-Warbler, but the specimen is in moult, so that the wing-formula is of no service to me in its determination.

115. *BRADYPTERUS CINNAMOMEUS*.

Bradypterus cinnamomeus (Rüpp.) ; Salvad. Ann. Mus. Genov. (2) i. p. 144 (1884 ; Sciotalit, Shoa) ; id. op. cit. vi. p. 39 (1888 ; Ankober ; Entotto).

No. 22. ♂. Kikuyu, Aug. 24, 1889.—Iris brown ; legs pale flesh-colour. In thick bush.

116. *CALAMONASTES SIMPLEX*.

Thamnobia simplex, Cab. J. f. O. 1878, pp. 205, 221.

Erythropygia simplex, Sharpe, Cat. B. Brit. Mus. vii. p. 74.

Calamonastes fischeri, Reichen. ; Fischer, Zeitschr. ges. Orn. i. p. 310 (1884 ; Paré, Nguruman) ; id. J. f. O. 1885, p. 140 (Pangani River) ; Reichen. J. f. O. 1887, p. 215.

No. 25. ♂. River Voi, Teita, Dec. 15, 1888.

No. 186. ♂. Turquel, Sük, Jan. 19, 1890.—Irides bright brown ; legs pale brown. Feeds on insects.

117. *CALAMONASTES LEPTORHYNCHUS*.

Turdirostris leptorhynchus, Fischer & Reichen. ; Fischer, Zeitschr. ges. Orn. i. p. 317 (1884 ; Zanzibar) ; id. J. f. O. 1885, p. 139 (Tschara) ; Reichen. J. f. O. 1887, p. 76 (Kagchi) ; id. J. f. O. 1889, p. 285 (Zanzibar).

Calamocichla leptorhyncha, Reichen. J. f. O. 1891, p. 219.

No. 79. ♀. Naiwascha, July 28, 1890.—Irides brown ; bill dusky olive above, flesh-colour below ; feet greenish horn-blue.

Adult female. General colour above fulvous brown ; wing-coverts like the back ; median and greater coverts dusky brown edged with fulvous ; bastard-wing, primary-coverts, and quills dusky brown, edged with fulvous, more ashy on the quills ; tail-feathers dusky brown with fulvescent margins ; crown of head and hind neck a little more dingy than the back ; sides of face and ear-coverts light fulvous-brown ; cheeks and throat whitish, becoming ashy on the lower throat,



and fading off on the fore neck into ashy buff; the breast and under tail-coverts buffy white; the sides of body, flanks, and thighs light tawny buff; under wing-coverts and axillaries pale tawny buff; quills below dusky, pale fulvous along the inner edge. Total length 5·9 inches, culmen 0·7, wing 2·65, tail 2·5, tarsus 1.

118. *PRINIA MYSTACEA*.

Drymæca tenella, Cab.; Reichen. J. f. O. 1887, p. 77 (Victoria Nyanza).

Prinia mystacea, Rüpp.; Sharpe, Cat. B. Brit. Mus. vii. p. 191.

No. 226. ♂. Savé, Mt. Elgon, Feb. 5, 1890, 6000 feet.—Irides bright pale brown; legs brownish flesh-colour; upper mandible dusky greyish olive, the lower one pale flesh-colour. Plentiful in the table-topped acacias.

119. *EUPRINODES CINEREUS*.

Euprinodes cinereus, Sharpe, Ibis, 1891, p. 120.

No. 312. ♀. Mount Elgon, Feb. 25, 1890.

Nos. 314, 315. ♂. Mount Elgon, Feb. 25, 1890.—Feet dark fleshy brown; bill black; irides bright brown; eyelids brown. In thick forest.

120. *APALIS PULCHRA*. (Plate IV. fig. 1.)

Apalis pulchra, Sharpe, Ibis, 1891, p. 119.

Nos. 293, 294. ♂ ♀. Mount Elgon, Feb. 23, 1890.—Irides bright yellowish brown or yellow-ochre; legs horn-brown; bill black. Plentiful in thick forest in dense undergrowth.

No. 295. ♂. Mount Elgon, Feb. 25, 1890.—Legs horn-blue. I append a full description of the species:—

Adult male. General colour above dark ashy grey; the wing-coverts like the back; bastard-wing, primary-coverts, and quills blackish margined with ashy grey, more broadly on the inner secondaries; tail-feathers black, the centre ones slightly tipped with white; all the others with a broad white end, increasing in size towards the outermost, which are almost entirely white; crown of head like the back; lores and region of eye blackish; sides of face and ear-coverts

rather darker slaty grey; throat, centre of breast, and abdomen white, with a tinge of rufous; across the fore neck a broad band of black; sides of neck and sides of upper breast grey; sides of body and flanks bright ferruginous; thighs ashy with reddish margins to the feathers; under tail-coverts white; under wing-coverts and axillaries white; quills below dusky, whitish along the inner edge. Total length 5·5 inches, culmen 0·7, wing 2·25, tail 2·5, tarsus 0·9.

Adult female. Similar to the male in colour. Total length 5·2 inches, culmen 0·6, wing 2·1, tail 2·1, tarsus 0·9.

No. 295 is apparently a younger male. It has the black chest-band washed with ashy, and has scarcely any rufous tinge on the throat.

121. *DRYODROMAS JACKSONI.* (Plate IV. fig. 2.)

Apalis jacksoni, Sharpe, Ibis, 1891, p. 119.

No. 296. ♀ ad. Mount Elgon, Feb. 23, 1890.—Irides brown; bill black; legs pale flesh-colour. First seen to-day, in thick forest.

No. 297. ♂ ad. Mount Elgon, Feb. 23, 1890.—Irides brown; legs flesh-colour; bill black.

Adult female. Differs from the male in being rather duller in colour, and in having the throat ashy grey instead of black; the sides of face and ear-coverts are also ashy grey. Total length 5 inches, culmen 0·45, wing 2·11, tail 2·2, tarsus 0·8.

122. *CISTICOLA ERYTHROGENYS.*

Cisticola erythrogenys, Rüpp.; Salvad. Ann. Mus. Civ. Genov. (2) i. p. 148 (1884; Shoa); Fischer, Zeitschr. ges. Orn. i. p. 314 (1884; Naiwascha; Great Aruscha); id. J. f. O. 1885, p. 140.

No. 70. ♀. Sotik, Oct. 2, 1889.—Legs flesh-colour; irides brown. Saw several, and found nest of one, but it contained no eggs.

Nos. 339, 340. ♀. Kimangitchi, Mount Elgon, Feb. 28, 1890.—Irides bright brown; legs flesh-colour; upper mandible brownish black, lower whitish horn-colour.

No. 346. ♂. Kimangitchi, Feb. 28, 1890.

123. *CISTICOLA HUNTERI*.

Cisticola hunteri, Shelley, P. Z. S. 1889, p. 364 (Kilimanjaro).

No. 278. ♀. Mt. Elgon, Feb. 17, 1890.—Shot in the Crater at 13,200 feet. Plentiful from 10,000 to 13,000 feet.—

Bill black; irides bright brown; feet pale flesh-colour.

Although the nearest ally of this species is *C. subruficapilla*, as suggested by Captain Shelley, it is at the same time quite different from that species, and is characterized by its ashy-grey under surface. The striping on the back is so little marked that the species also approaches the group with uniform backs—*C. ruficapilla* and *C. cinerascens*.

124. *CISTICOLA CHUBBI*, sp. n.

Nos. 332, 333. ♂ ♀. Kimangitchi, Mount Elgon, Feb. 27, 1890.—Bill black; feet flesh-colour; irides brown.

Adult male. General colour above uniform earthy brown with a slight olive tinge; wing-coverts and quills brown, with lighter brown margins, rather paler on the outer greater coverts and the primaries; tail-feathers brown with light rufescent tips, before which is a subterminal bar of black, obsolete on the centre feathers, but distinct on all the others, though confined to the inner web of the outer ones; crown of head light cinnamon-rufous; lores dusky blackish; eyelid rufous, a shade of which colour pervades the upper edge of the ear-coverts; the latter light ashy grey washed with fulvous; cheeks and throat whitish, with a tinge of buff on the cheeks; sides of neck light ashy; fore neck pale fulvescent; breast and abdomen whitish; sides of upper breast ashy; sides of body and flanks light brown, the latter fulvescent; thighs tawny rufous; under tail-coverts fulvescent; under wing-coverts and axillaries tawny buff; quills beneath dusky, along the inner edge light tawny. Total length 6 inches, culmen 0.65, wing 2.5, tail 2.4, tarsus 1.

This species is a pale edition of *C. ruficapilla*, from which it differs in being pale ashy olive with a light cinnamon-coloured head and its black loreal spot.

Dr. Reichenow agrees with me that this species is new to

science, and tells me that he has received two specimens of it from Emin Pasha obtained at Bukoba on the Victoria Nyanza.

125. *CISTICOLA PROCERA*.

Cisticola procera, Peters, J. f. O. 1868, p. 132.

No. 40. ♀. Kikuyu, Sept. 4, 1889.—Bill black; legs flesh-colour; iris bright brown.

No. 41. ♂. Kikuyu, Sept. 4, 1889.—Upper mandible black, lower one horn-blue; legs flesh-colour; iris brown.

These specimens are streaked on the back like *C. hunteri*, but they are altogether paler than that bird, approaching *C. subruficapilla*; the streaks on the back, however, are not so distinct as in the latter species, and indeed approach those of the uniform rufous-headed section of *Cisticola*.

I am indebted to my kind friend Dr. Reichenow for the identification of these two specimens, which I submitted to him in Berlin. He tells me that he has similar examples from Pangani.

126. *CAMAROPTERA GRISEIGULA*, sp. n.

C. similis C. brevicaudata, sed gutture tantum cinereo; hypochondriis brunnescentibus nec gulæ concoloribus. Long. tot. 4, culm. 0·6, alæ 2·1, caudæ 1·65, tarsi 0·9.

No. 11. ♂. River Voi, Teita, Dec. 10, 1888.

Dr. Reichenow tells me that he has a similar specimen to the one above described from the Binue River, and he is inclined to identify the species with *C. tincta* of Cassin. Typical specimens of the latter from Gaboon appear to me to be the true *C. brevicaudata* of Rüppell, and I think that *C. griseigula* is distinct from that species.

127. *CAMAROPTERA BREVICAUDATA*.

Camaroptera brevicaudata (Rüpp.); Salvad. Ann. Mus. Civ. Genov. (2) i. p. 144 (1884; Mahal-Uonz, Daimbi); Fischer, J. f. O. 1855, pp. 140 (Maurui, Aruscha); Reichen. J. f. O. 1887, p. 75 (Kagehi); Shelley, Ibis, 1888, p. 299 (Manda Isl.).

No. 19. ♂. Elgeyo, July 7, 1890.—Irides brown; legs pale brownish flesh. Very plentiful in the bush.

128. SYLVIELLA LEUCOPHRYS.

Sylvietta leucophrys, Sharpe, Ibis, 1891, p. 120.

No. 285. ♂. Mt. Elgon, Feb. 21, 1890.—Irides bright brown or reddish; bill pale fleshy brown, the lower mandible flesh-colour; legs fleshy red. First seen on this date. Found in bamboo-forest at 7000 feet.

No. 311. ♀. Mt. Elgon, Feb. 25, 1890.—Bill fleshy brown, the feet a shade darker; irides bright brown. In thick forest.

There is no difference in the colour of the sexes. The male measures as follows:—Total length 3·5 inches, culmen 0·5, wing 2·3, tail 0·95, tarsus 0·85.

129. THAMNOBIA SUBRUFIPENNIS.

Thamnolea albicapulata (nec Rüpp.); Fischer, Zeitschr. ges. Orn. i. p. 303 (1884; Maurui); id. J. f. O. 1885, p. 142.

Thamnolea subrufipennis, Reichen. J. f. O. 1887, p. 78 (Ussure: Magala Steppes, Schasche).

♂ ad. Similis *T. cinnamomeiventris*, sed caudâ basin versûs fere dimidiali rufâ. Long. tot. 8, culm. 0·85, alæ 4·6, caudæ 4·5, tarsi 1·15.

The male of this apparently new species is very similar to the male of *T. cinnamomeiventris* of South Africa, and, like that species, has chestnut upper and under tail-coverts; but it is easily recognized by the greater amount of chestnut at the base of the tail, which extends for nearly half the length of the latter, whereas in *T. cinnamomeiventris* the chestnut base is extremely restricted and is entirely hidden by the upper tail-coverts.

The female of *T. subrufipennis* is even more different from the corresponding sex of *T. cinnamomeiventris* than the male. The characters which separate the two birds can, perhaps, be better exemplified by a comparison as follows:—

T. subrufipennis ♀.

Rufous base to tail very pronounced, and occupying nearly the basal third of the latter.

Rump and upper tail-coverts deep maroon; *lower back* dark slaty grey like the mantle.

Breast and under tail-coverts deep maroon.

T. cinnamomeiventris ♀.

Rufous base to tail obsolete.

Rump and upper tail-coverts, as well as lower back, bright chestnut.

Breast and under tail-coverts bright chestnut.

The female measures:—Total length 7·8 inches, culmen 0·9, wing 4·3, tail 3·4, tarsus 1·2.

Nos. 329, 330. ♂ ♀. Kimangitchi, Mount Elgon, Feb. 27, 1890.—A pair, evidently about to breed in a cave. Bill and legs black; iris brown.

130. *COSSYPHA CAFFRA*.

Cossypha caffra (L.); Shelley, P. Z. S. 1889, p. 363 (Kilimanjaro).

No. 22. ♀. Elgeyo, July 7, 1890.—Feet brown; irides brown; bill black. Very fairly plentiful in the bushy, rocky grounds.

131. *CICHLADUSA GUTTATA*.

Cichladusa guttata, Heugl.; Fischer, Zeitschr. ges. Orn. i. p. 304 (1884; Maurui, Nguruman); id. J. f. O. 1885, p. 141 (Bagamoyo and other localities to Naiwascha); Shelley, Ibis, 1888, p. 299 (Jipi).

No. 42. ♂. Njemps, Lake Baringo, July 15, 1890.—Very plentiful in the bush. Irides brown; bill black; legs dark horn-blue.

132. *MERULA ELGONENSIS*.

Merula elgonensis, Sharpe, Ibis, 1891, p. 445.

No. 31. ♂. Kikuyu, Aug. 29, 1889.—Irides brown; eyelids orange-yellow; bill orange-yellow; feet dirty orange-yellow. Common.

No. 266. ♂ ad. Mount Elgon, 8000 feet, Feb. 14, 1890.—Irides brown; eyelids orange-yellow; bill bright orange-yellow; legs pale dusky yellow.

Adult male. General colour above dark slaty brown; wing-coverts like the back; outer greater coverts, bastard-wing,

primary-coverts, and quills browner than the back, fringed with slaty grey, more especially on the inner secondaries; tail-feathers brown, washed with slaty grey on the edges; crown of head rather browner than the back; lores blackish; ear-coverts and sides of face brown with a slight wash of slaty grey; base of chin whitish; throat and chest slaty grey, the latter uniform, the upper throat streaked with black, more distinctly along the malar line; remainder of under surface of body from the chest downwards orange-buff, including the thighs and under wing-coverts; sides of lower flanks and hinder aspect of thighs ashy; under tail-coverts varied, the centre of the feathers white, expanding in a fan-like form towards the ends, each feather being ashy brown on the sides; quills dusky brown below, pale orange along the inner web. Total length 8.4 inches, culmen 0.95, wing 4.2, tail 3.4, tarsus 1.2.

The second specimen, also a male, differs from the one described in having the throat almost uniform ashy, with only a few traces of black streaks on the malar line.

133. *PRATINCOLA AXILLARIS*.

Pratincola axillaris, Shelley, P. Z. S. 1884, p. 556, 1885, p. 226, 1889, p. 363 (Kilimanjaro).

Nos. 8, 9. ♂ ♀. Sotik, Oct. 5, 1889. In pairs.

134. *PRATINCOLA*, sp. inc.

No. 25. ♀. Kikuyu, Aug. 26, 1889.—Irides brown; legs black.

A hen bird, which I have not succeeded in determining.

135. *MONTICOLA SAXATILIS*.

Monticola saxatilis, Shelley, P. Z. S. 1881, p. 575; Fischer, Zeitschr. ges. Orn. i. p. 302 (1884; Maurui, Little Aruscha); id. J. f. O. 1885, p. 142 (Bagamoyo; Lamu); Reichenb. J. f. O. 1887, p. 78 (Kagehi).

No. 32. ♂. Kikumbuli, Dec. 23, 1888.

No. 88. ♂. Machako's, March 4, 1889.

136. *MONTICOLA RUFOCINEREA*.

Monticola rufocinerea, Salvad. Ann. Mus. Civ. Genov. (2) i. p. 161 (Shoa); Fischer, J. f. O. 1885, p. 142 (Naiwascha).

No. 225. ♀. Savé, Mt. Elgon, Feb. 5, 1890.—Irides brown; legs olive-black.

No. 244. ♂. Savé, Mt. Elgon, Feb. 10, 1890.—Bill and legs black; irides brown. Plentiful at 6000 feet.

137. PINAROCHROA HYPOSPODIA.

Pinarochroa hypospodia, Shelley, P. Z. S. 1885, p. 226, pl. 13 (Kilimanjaro); id. P. Z. S. 1889, p. 364 (Kilimanjaro).

No. 271. ♂. Mt. Elgon, 11,000 feet.

Nos. 272–274. Mount Elgon, Feb. 16, 1890.—Shot inside the crater, at 12,800 feet. Legs black; bill dull black; irides brown. First seen at 11,000 feet. Evidently breeding.

Nos. 279, 280. ♂ ♀. Mt. Elgon, Feb. 17, 1890.—Shot inside the crater at 13,200 feet.

Nos. 281, 282. ♂.—Shot on the point of Mount Elgon at 14,000 feet, Feb. 18, 1890.

138. SAXICOLA ANANTHE.

Saxicola ananthe, Sharpe, P. Z. S. 1881, p. 572; Fischer, Zeitschr. ges. Orn. i. p. 306 (1884; Ronga River); id. J. f. O. 1885, p. 143 (Little Aruscha); Reichenb. J. f. O. 1887, p. 78 (Ussure; Kagehi).

No. 56. ♂. Kitina, Jan. 21, 1889.

139. SAXICOLA ISABELLINA.

Saxicola isabellina, Salvad. Ann. Mus. Civic. Genov. (2) i. p. 164 (Daimbi, Shoa); Fischer, Zeitschr. ges. Orn. i. p. 305 (1884; Naiwascha); id. J. f. O. 1885, p. 142 (Kipini, Barawa); Salvad. Ann. Mus. Civic. Genov. (2) vi. p. 36 (1888; Entotto, Shoa); Shelley, Ibis, 1888, p. 299 (Lamu). No. 220. ♂. Turquel, at foot of Mount Elgon, Jan. 3, 1890.—Irides brown; legs black. Very plentiful.

140. SAXICOLA MORIO.

Saxicola morio, Fischer, J. f. O. 1885, p. 142 (Lamu coast; Barawa).

No. 351. ♀. Kitosh, March 3, 1890.—Bill and feet black; irides brown.

The females of *S. morio* and its allies are not always easy to determine with certainty, but the Kitosh specimen agrees fairly well with one from Saisson procured by Dr. Otto Finsch.

141. *SAXICOLA SCHALOWI*.

Saxicola schalowi, Fischer & Reichen. J. f. O. 1884, p. 57; Fischer, Zeitschr. ges. Orn. i. p. 305 (Naiwascha); id. J. f. O. 1885, p. 142.

No. 52. ♂. Naiwascha Lake, Sept. 14, 1889.

This specimen was identified for me by Dr. Reichenow.

142. *CAMPICOLA LIVINGSTONII*.

Campicola pileata, Fischer & Reichen. J. f. O. 1879, p. 255.

Campicola livingstonii, Tristr. Ibis, 1867, p. 888; Fischer, Zeitschr. ges. Orn. i. p. 306 (1884; Little Aruscha; Mkaramo); id. J. f. O. 1885, p. 142 (Bagamoyo, Paré, Mossiro, Ngaruka, Naiwascha).

No. 48. ♀ ad. Naiwascha Lake, Sept. 10, 1889.

No. 67. ♂ ad. Masai, July 26, 1890.—Bill and legs black; irides brown. Very plentiful in the open plains.

Mr. Seebohm (Cat. B. Brit. Mus. v. p. 397) unites *C. livingstonii* with *C. pileata*. The narrower chest-band, however, induces me to suspect that *C. livingstonii* is at least a well-defined geographical race. The Masai birds have also a narrow black chest-band, and seem to me further to have more ashy on the back of the neck and also much paler edges to the wing-coverts and quills.

143. *MYRMECOCICHLA CRYPTOLEUCA*.

Myrmecocichla aethiops (nec Licht.); Fischer, Zeitschr. ges. Orn. i. p. 302 (1884; Naiwascha); id. J. f. O. 1885, p. 142 (Mossiro); Reichen. J. f. O. 1887, p. 78 (Sigaeijo).

Myrmecocichla cryptoleuca, Sharpe, Ibis, 1891, p. 445.

No. 53. Kikuyu, Sept. 14, 1889.

I compared the typical specimen of this species, in company with Dr. Reichenow, with the type of *M. aethiops* (Licht.) in Berlin. We both came to the conclusion that it was distinct

from that bird and also from *M. formicivora*, as it is black instead of brown in general colour.

144. *CRATEROPUS BUXTONI*.

Crateropus buxtoni, Sharpe, Ibis, 1891, p. 445.

No. 167. ♂. Ngoboto, Jan. 11, 1890.—Irides bright yellow; legs olive.

No. 207. ♂. Turquel, Sük district, Jan. 27, 1890.—Irides bright yellow; legs olive-brown. Plentiful in small flocks.

The typical specimen of this species I took to Berlin, and carefully compared, in company with Dr. Reichenow, with specimens of *C. plebeius* of Rüppell. It differs from that species in the dusky centres to the dorsal plumage and also in its whitish throat, the feathers of the lower throat having distinct mesial tips of white.

145. *CRATEROPUS HYPOLEUCUS*.

Crateropus hypoleucus, Cab.; Reichen. J. f. O. 1887, p. 75 (Usegua; Masai Steppes).

No. 73. ♀. Makarungu, Feb. 10, 1889.

(To be continued.)

XII.—Notices of recent Ornithological Publications.

1. *Allen on Maximilian's Types.*

[Further Notes on Maximilian Types of South-American Birds. By J. A. Allen. Bull. Am. Mus. Nat. Hist. iii. p. 199.]

Mr. Allen gives us further useful notes on Prince Max. of Neu-Wied's bird-types now in the American Museum of Natural History. He proposes a new generic name, *Rhopocichla*, for *Myiothera ardesiaca*, Wied, but this term has been already employed by Oates (Faun. Brit. Ind. Birds, i. p. 159). Mr. Allen has discovered the mislaid types of *Anthus pæcipterus*, Wied, and moreover agrees that the so-called *Anthus* is (as has long ago been pointed out*) not even an Oseinine bird, but a peculiar form of *Dendrocolaptinæ*.

* Selater, P. Z. S. 1866, p. 205.

2. *Allen on the Birds of Matto Grosso.*

[On a Collection of Birds from Chapada, Matto Grosso, Brazil, made by Mr. Herbert H. Smith. By J. A. Allen. Bull. Am. Mus. Nat. Hist. iii. no. 3.]

We are much pleased to receive the first instalment of Mr. Allen's account of the great Matto Grosso collection of birds. This series, which was accumulated by the well-known American collector Mr. H. H. Smith during the years 1882-86, originally numbered about 6000 specimens, of which 4000 were purchased by the American Museum of Natural History in 1887. About 1500 others, left in storage in the Museum, have likewise been used in preparing the present memoir. The remainder were acquired by Messrs. Godman and Salvin, and are now in the British Museum. But failing these last-named, Mr. Allen had before him such a series (about 4500) from the same district of South America as had never been previously got together, and has consequently been able to arrive at excellent results on several disputed questions.

Chapada, where or near where most of this fine series was amassed, lies in the Campo district of Matto Grosso, on the Bolivian frontier, about 35 miles S.W. of Cuyaba, at an altitude of about 2500 feet. Some four months, however, were passed by Mr. H. H. Smith and his party at Corumba, about 300 miles southwards in the flood-plain of the Paraguay river.

The whole series collected is stated to contain examples of about 350 species. In the present memoir we have an account of the Oscinine Passeres, of which 87 species are included in the list. Several papers have already been published by Mr. Allen and others based upon specimens in this collection; but we have now a general account of it, and consequently much valuable information as to the individual variations of different species.

A new Tanager of the genus *Calliste*, allied to *C. cayana* and *C. flava*, is designated *C. margarethæ*, in honour of Mrs. H. H. Smith. Of this bird 137 skins are stated to be in the collection, and nests and eggs were also obtained.

3. *Barnes on Nests and Eggs of Western India.*

[Nesting in Western India. By Lieut. H. E. Barnes, F.Z.S. Journ. Bombay N. H. Society, vol. iii. p. 205; iv. pp. 2, 83, 237; v. pp. 1, 97, 315; vi. pp. 1, 129.]

Mr. Barnes writes a series of excellent notes on the breeding-birds of Western India, and describes their nests and eggs. Eight well-executed plates contain figures of the nests and eggs of the following species:—

Eggs of *Elanus cæruleus*, *Spilornis melanotis*, *Hirundo filifera*, *Ptyonoprogne concolor*, *Caprimulgus atripennis*, *C. maharattensis*, *Hirundo fluvicola*, *Caprimulgus indicus*, *C. asiaticus*, *C. monticola*, *Eudynamis honorata*, *Turnix taigoor*, *T. dussumieri*, *T. joudera*, *Cursorius coromandelicus*, *Houbara macqueeni*, *Glareola lactea*, *Ægialitis minuta*, *Rhynchæa bengalensis*, *Parra indica*, *Porphyrio poliocephalus*, *Erythra phenicura*, *Himantopus candidus*, *Hydrophasianus chirurgus*, *Gallicrex cinereus*, *Porzana akool*, *Hypotaenidia striata*.

Nests and eggs of *Hypothymis azurea*, *Ixus luteolus*, *Orthotomus sutorius*, *Zosterops palpebrosa*, *Dicaeum erythrorhynchum*.

4. *Buckley and Harvie-Brown's 'Vertebrate Fauna of the Orkney Islands.'*

[A Vertebrate Fauna of the Orkney Islands. By T. E. Buckley, B.A., F.Z.S., and J. A. Harvie-Brown, F.R.S.E., F.Z.S. 8vo. Pp. 314. Edinburgh: 1891.]

Messrs. Buckley and Brown have now completed their "trilogy" by adding a volume on the Vertebrates of the Orkneys to that on the Vertebrates of Sutherland published in 1887, and that on the Orkney Islands issued in 1888. The plan of the present volume follows that of the preceding ones; it is got up in the same elegant way, and splendidly adorned with lithographs and other illustrations. Amongst them special attention should be drawn to Mr. J. G. Millais's beautiful sketches of Hoy Cliffs, Risa Little, and Stenness, which are worthy of all praise. The preliminary description of the Islands and their physical characters seems to be very

complete, and a clearly drawn map is appended to the volume.

The following passage with reference to the Eider Duck shows that in some districts at least well-arranged efforts to preserve some of our more interesting birds may be rewarded by success. Mr. E. S. Cameron, of Bugar House, writing to the author concerning this bird, says:—

“With regard to Eynhallow, the following facts speak for themselves. Previous to my purchase of the island in 1884, I never saw more than two or three broods of young Eiders about its shores, the first eggs laid there being invariably taken by fishermen and others.

“In 1884 I set to work to preserve the island strictly, and engaged a man, James Wood, to reside there during the nesting-season. In 1887 there were 200 Eider Ducks’ nests on Eynhallow, and the number of broods hatched out was 190.”

5. *Dubois on the Classification of Birds.*

[*Revue des Derniers Systèmes Ornithologiques et Nouvelle Classification proposée pour les Oiseaux.* Par le Dr. Alphonse Dubois. *Mém. Soc. Zool. France*, iv. p. 96.]

Dr. Dubois adheres rather to the old school, and objects to basing the classification of birds mainly on anatomical characters. After reviewing the systems of Huxley, Sundevall, Selater, and Fürbringer, he promulgates his own, in which Birds are divided into two Subclasses (after Sundevall), *Gymnopædes* and *Ptilopædes*, and these Subclasses into 14 Orders—*Psittaci*, *Passeres*, *Macrochires*, *Anisodactylæ*, *Zygodactylæ*, *Columbæ*, *Heteroclitæ*, *Gallinæ*, *Accipitres*, *Herodiones*, *Grallatores*, *Palamedææ*, *Natatores*, and *Struthiones*. In the *Natatores* Dr. Dubois places the *Anseres*, *Steganopodes*, *Gaviæ*, *Tubinares*, *Pygopodes*, and *Impennes*!

6. *Fürbringer on recent Progress in Avian Anatomy.*

[II. Internationaler Ornithologischer Congress. 3 Section. Anatomie der Vögel. Referat von Max Fürbringer.]

In a large quarto pamphlet of 48 pages, Dr. Fürbringer

gives a very useful summary of additions to our knowledge of avian anatomy and physiology during the last three or four years. A bibliography of 11 pages, which does not include "papers dealing with the integument, flight, food, and eggs of birds," concludes the summary, and is an indication of the continued activity of workers in this branch of zoology. The substance of the paper is simply an expansion of the bibliography, giving a necessarily very brief account of the various organs and systems that have been the subject of anatomical investigation during the period referred to, prefaced by a summary of the general progress of ornithology from the time of Aristotle. It concludes with an exposition of the several schemes of classification that have been propounded from the year 1887 onwards.

7. *Godman and Salvin's 'Biologia Centrali-Americana.'*

[*Biologia Centrali-Americana*; or, Contributions to the Knowledge of the Fauna and Flora of Mexico and Central America. Edited by F. DuCane Godman and Osbert Salvin. (Zoology.) Parts XCII.-XCV. 4to. London: 1891. Published for the Editors by R. H. Porter, 10 Chandos Street, Cavendish Square, W.]

The four numbers of this important work issued since our last notice of it (*Ibis*, 1891, p. 449) contain the remaining portion of the Cotingidæ and Dendrocolaptidæ. Of the latter family 46 species are known to the authors to occur in Central America. A new arrangement of the subfamilies of the Dendrocolaptidæ is proposed, based mainly on the form of the nostrils, according to which the Central-American members of the group would be arranged in six subfamilies—Synallaxinæ, Philydorinæ, Sclerurinæ, Margarornithinæ, Glyphorhynchinæ, and Dendrocolaptinæ. This arrangement will, no doubt, be an improvement, if the South-American members of the group are found to fall in with it. *Pseudocolaptes*, according to this view, is a Synallaxine genus. *Automoli verapacis* from Vera Paz, *umbrinus* from the Pacific coast of Guatemala, *guerrerensis* from Guerrero, Mexico, and *fumosus* from Panama are described as new.

The following species are figured:—*Sclerurus guatema-*

lensis, *Synallaxis pudica*, *S. erythrope*, *S. rufigenis*, *Philydor fuscipennis*, *P. rufobrunneus*, *Margarornis rubiginosus*, *M. brunescens*, *Dendroornis lacrymosa*, and *Xiphorhynchus pusillus*.

8. Hagerup on the Birds of Greenland.

[The Birds of Greenland. By Andreas T. Hagerup. Translated from the Danish by Frimann B. Arnglimson. Edited by Montague Chamberlain. 8vo. Boston: 1871.]

Mr. Arnglimson has translated from the Danish, and Mr. M. Chamberlain has edited, Mr. Hagerup's notes on the birds of Greenland, the results of the last-named gentleman's observations during thirty months' residence at Ivigtut, a mining-town in South Greenland (lat. $61^{\circ} 15'$), about ten miles distant from the open sea. A previous article on the same subject was published in the sixth volume of 'The Auk,' but subsequent experience has enabled the author to make considerable additions to it.

To Mr. Hagerup's notes is appended a new Catalogue of the birds of Greenland, based on the works of Holböll, Reinhardt, Newton, Kumlien, and others, which comprises "all the birds discovered up to date" in Western Greenland, south of 73° N. lat. This tract is divided at 68° N. lat. into North Greenland and South Greenland.

Of the 139 species in the list, which is arranged according to the code of the A. O. U., one is extinct and 53 are accidental stragglers, while 24 others are of rare occurrence. The regular bird-inhabitants of Greenland are therefore 61 in number, inclusive of several which are "quite uncommon."

We venture to point out that in these days all geographical publications on zoology should be accompanied by maps. An outline map of Greenland would have rendered this little memoir still more acceptable.

9. Hartert on Birds from Western Java.

[Ueber eine kleine Vogelsammlung aus der Provinz Preanger in West-Java. Von Ernst Hartert. Ornith. vii. (1891) p. 113.]

Herr Hartert has studied a small collection made by

Dr. O. Warburg, of Hamburg, in the province of Preanger, in Western Java. He gives us a list of 93 species represented in it and many good critical notes.

10. *Hartert on Birds from Mindoro, Philippines.*

[Die bisher bekannten Vögel von Mindoro, nebst Bemerkungen über einige Vögel von anderen Inseln der Philippinen-Gruppe. Von Ernst Hartert. J. f. O. 1891 (April and July).]

Herr B. Schmacker, of Shanghai, visited Mindoro to collect shells in the winter of 1888-89, and made also a collection of bird-skins. Some of his duplicates were sent to the Senckenbergian Museum, and have been inserted in Herr Hartert's Catalogue of the birds of that institution (see *Ibis*, 1891, p. 615). On returning to Europe Herr Schmacker brought his collection home and gave it to Herr Hartert for determination.

Our author has added to his list of Mindoro birds the species attributed to this island by other authorities, and especially by Dr. Steere (*cf. Ibis*, 1891, p. 301), who has described most of the new species. Besides this he gives us many good critical notes and a prefatory sketch of what is known of the birds of the Philippines*.

Herr Hartert's list contains 64 species, but there are certainly many more than that to be found in this well-wooded island.

11. *Hornaday's Taxidermy and Zoological Collecting.*

[Taxidermy and Zoological Collecting, a complete Handbook for the Amateur Taxidermist, Collector, Osteologist, Museum-Builder, Sportsman, and Traveller. By William T. Hornaday. With Chapters on Collecting and Preserving Insects, by W. J. Holland, Ph.D., D.D. Illustrated by Charles Bradford Hudson and other artists. 24 Plates and 85 Text Illustrations. Pp. 362. 8vo. London: 1891.]

Mr. Hornaday is well known as an energetic collector and taxidermist, who has had great opportunities of practising

* In this sketch Herr Hartert seems to have omitted mention of Dr. Steere's first expedition (1874-75) and the memoir on the birds by Dr. Sharpe (*Trans. Linn. Soc. ser. 2, i. p. 307.*)

his arts, both in the field and in the laboratory. The sight of a fine animal, "alive or dead, excites in him feelings of admiration which often amount to genuine affection," and the "study and preservation of such forms has been for sixteen years his chief delight." There can be no doubt, therefore, that his book will be found most useful to all engaged either in collecting zoological specimens or in keeping them.

Two special chapters are devoted to instructions as to the collecting of birds, small and great, and four others to mounting them as specimens for exhibition. We have, besides, chapters on making skeletons and on collecting birds' nests and eggs. In the latter we are pleased to see the necessity of "positive and unmistakable identification" duly insisted on.

12. *Leverkühn on Pallas's Sand-Grouse.*

[Litterarisches über das Steppenhuhn, III. (Schluss=) Revue, nebst Original-Mittheilungen über die 1888er Invasion. Von Paul Leverkühn. Monatsb. Deutsch. Ver. z. Schutz d. Vogelw. xvi. pp. 110, 143.]

This is the final instalment of Herr Leverkühn's lucubrations on Pallas's Sand-Grouse (*cf.* Ibis, 1890, p. 116). It contains an additional list of authors and citations upon this interesting subject, and notices of recent papers and publications in reference to it. A good general article upon the great irruption of 1888 is still wanted to sum up the question, and we hope shortly to be able to supply it.

13. *Lucas on the Osteology of the Paridæ.*

[Notes on the Osteology of the Paridæ, *Sitta* and *Chamaea*. By Frederic A. Lucas. Proc. U.S. Nat. Mus. xiii. pp. 337-345.]

Mr. Lucas has studied the skeletal characters of various species of *Parus*, *Psaltriparus*, *Auriparus*, *Ægithalus*, *Chamaea*, and *Sitta*, and now gives us some account of the results arrived at. In the genus *Parus* the form of the anterior termination of the vomer is subject to great specific variation, as shown in Mr. Lucas's sketches. *Sitta*, as he points out, differs from *Parus* osteologically in many important parti-

culars. *Chamæa* is fully discussed. In its cranial characters it is "much like *Psaltiriparus*," while its shoulder-girdle and pelvic girdle are "decidedly Wren-like." The conclusion is that it should have an "intermediate position," as indicated in the name "Wren-Tit."

14. *Lucas on the Tongue of the Trochilidæ.*

[On the Structure of the Tongue in the Humming-bird. By Frederic A. Lucas. Proc. U.S. Nat. Mus. xiv. p. 169 (1891).]

Mr. Lucas has examined the tongue in 13 species of Humming-birds, and gives us a general description of its structure, illustrated by enlarged figures. The differences in the various forms examined are small; and if "exceptions exist, they will most likely be found in the Phaethornithinæ." Mr. Lucas shows that the "tubular part of the tongue exists only for a short distance towards the anterior end, so that the common statement that the tongue of the Humming-bird consists of two parallel muscular tubes is quite erroneous."

15. *Meyer on a singular Variety of the Partridge.*

[Eine seltene Varietät des Rephuhnes, *Perdix cinerea*. Von A. B. Meyer. J. f. O. 1891, p. 271.]

Dr. Meyer describes a singular variety of the Common Partridge of a generally uniform dark greyish-brown colour, from a specimen shot near Gleichenberg by King Milan of Servia, and sent to the Dresden Museum. It seems to agree nearly with a dark variety of this bird described by Natterer in 1833.

16. *Olphe-Galliard on the Birds of the Environs of Lyons.*

[Catalogue des Oiseaux des Environs de Lyon. Par Léon Olphe-Galliard. 8vo. Lyon: 1891. Pp. 54.]

In 1855 M. Olphe-Galliard published in 'Naumannia' an article on the birds of the environs of Lyons. After an interval of 35 years he now reprints his notes, with additions and alterations. The present catalogue contains a record of

232 species. Much stress is laid, in the prefatory remarks, upon the serious decrease of bird-life in France of late years, which, however, looking to the passion for *gibier* which prevails so widely in that country, is hardly to be wondered at.

17. *Oustalet on the Birds of Patagonia.*

[Mission scientifique de Cap Horn 1882-1883. Tom. VI. Zoologie. Oiseaux, par E. Oustalet. 1 vol. 4to. Paris: 1891.]

This most useful volume on the birds of Southern Patagonia, Tierra del Fuego, and the Falkland Islands is based primarily upon the rich collections made by Dr. Hyades, Dr. Hahn, and M. Savinet, of the French Government Mission to Cape Horn. At the same time M. Oustalet has studied the birds collected in Southern Patagonia by M. Lebrun and the officers of the 'Volage.' In order to render the work as complete as possible, however, the author has referred to all the previous authorities upon the same subject, and has thus vastly increased the value of his results. We have, in fact, in this volume a complete account of the present state of our knowledge of the ornithology of Antarctic America.

M. Oustalet first discusses the species of which specimens were actually obtained by the French voyageurs. These are 102 in number, mostly well-known species, concerning which, however, many new facts and observations are given. Two species of this series are considered as new discoveries—*Pseudochloris lebruni* and *Tinamotis ingoufi* (cf. Ibis, 1890, p. 453). A large Snipe is referred to *Gallinago nobilis*, Sc.; but the large species previously obtained in Tierra del Fuego is *G. stricklandi* (cf. Sc. et Salv. Ex. Orn. p. 196), not *G. nobilis*, which, so far as we know, is only found in Colombia and Ecuador. The vexed question of the Loggerhead Ducks is discussed at full length, and the decision is arrived at that there are two different species—*Micropterus cinereus* and *M. patachonicus*. Three examples of the very interesting small Penguin, *Microdyptes serresianus*, were obtained by the Cape-Horn Mission, and this species may consequently be added to the Neotropical Avifauna.

Having finished this portion of the subject, M. Oustalet proceeds to consider the species recorded by other authorities as occurring in Patagonia and Fuegia, but of which specimens were not obtained by the French expedition. These are 99 in number, and raise the total of the list of the known birds of Antarctic America to about 200. Tables showing the distribution of these species and remarks thereupon conclude the essay.

The following species are illustrated by well-executed plates :—*Tinamotis ingoufi*, *Rallus rhytirhynchus*, *Larus scoresbii*, *Micropterus cinereus*, *M. patachonicus*, and *Phalacrocorax carunculatus*.

18. Oustalet on two new Birds.

[Description de deux espèces nouvelles d'Oiseaux, appartenant aux familles des Paradiseidæ et des Trogonidæ. Par E. Oustalet. Le Naturaliste, 1^{er} Nov^{re} 1891 (p. 200).]

The author describes a new Rifle-bird from a "native" Papuan skin without feet, which he proposes to call *Craspedophora mantoui*, and a new Trogon, from the interior of Venezuela, under the name *Trogon (Calurus) hargitti*, distinguished from all the previously-known species of this genus by its orange-yellow belly. Is not this the same as *Pharomacrus xanthogaster*, Turati & Salvadori, P. Z. S. 1874, p. 652?

19. Ramsay's Catalogue of Birds in the Australian Museum.

[Catalogue of the Australian Birds in the Australian Museum, at Sydney, N. S. W. Part III. Psittaci. By E. P. Ramsay, LL.D., F.R.S.E. 8vo. Sydney: 1891.]

The third section of Mr. Ramsay's 'Catalogue of the Australian Birds in the Australian Museum at Sydney' contains an account of the Parrots, of which the author recognizes 59 species and 6 "varieties" as now known to occur in Australia. These varieties it would be better to term "sub-species" in most cases. In all 750 specimens have been examined during the preparation of the Catalogue, those of the Adelaide and other museums having been brought into

comparison. *Platycercus mastersianus* is a rare species, recently described, of which two examples only are known.

20. Ridgway's Directions for Collecting Birds.

[Directions for Collecting Birds. By Robert Ridgway. Part A of the Bull. U.S. Nat. Mus. no. 39, 1891.]

Mr. Ridgway's directions for collecting birds are very plain and quite concise. At the same time they seem to embrace all the particulars concerning which information is required by the modern collector. We have great pleasure in recommending them as containing all the most recent details on a subject of permanent interest to ornithologists.

21. Riker and Chapman on the Birds of Santarem.

[A List of the Birds observed at Santarem, Brazil. By Clarence B. Riker. With Annotations by Frank M. Chapman. Auk, vols. vii.-viii. (1890-91).]

With the assistance of Mr. Chapman, Mr. Riker now furnishes us with a complete account of the collections which he made at Diamantina, near Santarem, on the Lower Amazons, during two visits in 1884 and 1887, the new species of which specimens were obtained having been previously described by Mr. Ridgway and Mr. Allen. In order to make the list as complete as possible, species are inserted of which examples have been obtained by other collectors in the same district, and the result gives us a total of 251 species known to occur at Santarem or in its immediate vicinity. Mr. Riker's preliminary notes on the district and field-notes on some of the species are of great interest, and we much hope that he may be able to return to Santarem and complete his good work, for we venture to say that by extending his area a little the list of species might be nearly doubled.

The authors have decided that the *Mimus* of the Lower Amazons is the true *M. saturninus* of Lichtenstein, and is distinct from that of S.E. Brazil, commonly referred to *M. saturninus*. They therefore propose to call the latter *Mimus arenaceus*. The Tyrant referred by Mr. Allen (Bull. Essex

Inst. viii. p. 79) to *Tyrannus niveigularis* is now ascertained to be *T. albogularis*, Burm. The greatest prize obtained by Mr. Riker was a single specimen of *Berlepschia rikeri*, a very curious form of *Dendrocolaptidæ* (cf. *Ibis*, 1889, p. 351, pl. xi.).

22. *Salvadori on Additions to Papuan Ornithology.*

[Aggiunte alla Ornitologia della Papuasias e delle Molucche. Per Tommaso Salvadori. Parte terza. Columbæ, Gallinæ, Grallatores, Anseres, Struthiones. 4to. Torino: 1891.]

We have now before us the third and last part of Count Salvadori's excellent and most useful enumeration of the species lately added to the Papuan avifauna. It contains the Columbæ, Gallinæ, Grallatores, Anseres, and Struthiones, and a long appendix, which brings the whole up to date. The avifauna of "Papuasia and the Moluccas" would thus appear to contain altogether 1198 species.

23. *Salvadori on Loria's Ornithological Collections.*

[Viaggio di Lamberto Loria nella Papuasias orientale. III. Collezioni Ornitologiche descritte da Tommaso Salvadori. Nota terza. Uccelli della Nuova Guinea meridionale orientale e delle isole d'Entrecasteaux. Ann. Mus. Civ. S. N. Genova, ser. 2, x. p. 797.]

Count Salvadori's third report on Dr. Loria's ornithological collections is now before us (cf. *Ibis*, 1891, p. 137), and gives us an account of 378 specimens, referred to 117 species, obtained in 1889 and 1890 in several localities on the S.E. coast of New Guinea and on some of the islands of the d'Entrecasteaux group. The New-Guinea birds belong to 104 species, amongst which are *Machærorhamphus alcinus*, *Tanyptera damæ*, *Munia grandis*, *Otidiphaps cervicalis*, and other rarities. Dr. Loria visited Woodlark, Ferguson, and Goodenough Islands of the d'Entrecasteaux group, and obtained 60 specimens, referable to 18 species. Among these were *Manucodia comriei*, *Phonygama thomsoni*, and *Paradisea decora*—three fine species, which appear to be restricted to these islands.

24. *Schalow on the Birds of the Aleutian and Kurile Islands.*

[J. F. von Brandt: Ueber die Vogelfauna der Aleuten, Kurilen und der russisch-amerikanischen Colonien. Nach hinterlassenen Notizen herausgegeben von Herman Schalow. J. f. O. 1891, p. 235.]

Among the MSS. of the late distinguished naturalist, Dr. J. F. von Brandt, of St. Petersburg, has been found an unfinished memoir on the birds of the "Aleutian and Kurile Islands and Russian America," which was begun in 1849, and was intended to have been published in Russian and accompanied by illustrations. Herr Schalow now gives us portions of the introduction to this interesting work, together with the list of the birds and Brandt's notes written in Latin, to which in some cases he adds critical remarks. So much has been done by American and other writers on the ornithology of both sides of Behring's Sea during the past twenty years that there is little, if any, novelty in Brandt's observations, although some of the localities may have been hitherto unrecorded. As the Editor allows, it would have been very desirable in some cases to have been able to consult the specimens in the St. Petersburg Museum upon which Brandt based his remarks.

25. *Shufeldt on the Classification of the Columbæ.*

[Notes on the Classification of the Pigeons. By R. W. Shufeldt. Amer. Nat. 1891, p. 157.]

Dr. Shufeldt has recently examined skeletons of species of nearly all the genera of the American Pigeons, and has come to the conclusion that Coues's proposed division of the Columbidae into three subfamilies—Columbinæ, Zenaidinæ, and Starnœnadinæ—cannot be maintained. From osteological characters two subfamilies only are recognizable—Columbinæ and Starnœnadinæ, the latter containing only the genus *Starnœnas*. We quite agree to this, and may moreover add that, unless we are much mistaken, Dr. Shufeldt will find on examination of the Old-World Columbæ that *Starnœnas* has some near relatives amongst them.

26. *Stempelmann and Schulz on the Birds of Cordoba.*

[Enumeración de las Aves de la Provincia de Córdoba (República Argentina) por Hugo Stempelmann y Federico Schulz. Bol. Acad. Nat. Córdoba, x. p. 393.]

Mr. Schulz, assistant in the Museum of Zoology and Botany of the National University of Cordoba, has kindly sent us a separate copy of an article on the birds of the province of Cordoba, prepared by Prof. Stempelmann and himself. Mr. Schulz is already well known to ornithologists for good work in Argentina*, and we are glad to see that he is continuing it. The list contains the names of 250 species met with in the vicinity of Cordoba, and is intended as a prodromus of an 'Ornito-fauna Cordobesa,' which, it is announced, will shortly be published. Short indications are added as to whether each species is resident or migrant, and as to what kind of country it inhabits (mountains, plains, or forests). "*Demelioteucus*," as applied to *Molothrus badius*, is a generic term which we have not met with before, and several MS. names unknown to us are likewise used.

27. *Wilson and Evans on Hawaiian Birds.*

[Aves Hawaiienses: the Birds of the Sandwich Islands. By Scott B. Wilson, F.Z.S., assisted by A. H. Evans, M.A., F.Z.S. Part II. Sept. 1891†. 4to. London: 1891. R. H. Porter.]

We are glad to receive the second part of this valuable work, and may perhaps venture to express a hope that the succeeding numbers will appear at rather shorter intervals. The birds discussed and (*well*) figured in the present part are:—*Psittacirostra psittacea*, *Phæornis myiadestina*, *Ph. lanaiensis*, *Drepanis pacifica*, *Himatione sanguinea*, *Oreomyza bairdi*, *Chæoptila angustipluma*, and *Buteo solitarius*. Two other Hawaiian species (*Circus hudsonius* and *Asio accipitrinus*) are discussed, but not figured. In this number we have also an excellent essay by Dr. Gadow on the structure of some of the Hawaiian birds of which specimens were brought home by Mr. Wilson in spirit. These specimens all belong to Osci-

* Cf. Arg. Orn., Appendix, p. 229.

† For notice of pt. I., see 'Ibis,' 1891, p. 291.

nine types. After examining them Dr. Gadow comes to the conclusion that *Loxioides* and *Psittacirostra* are Fringilline forms, and that *Acrulocercus* and *Chætoptila* belong to the Meliphagidæ, whilst the genera *Drepanis*, *Vestiaria*, *Himatione*, *Loxops*, *Chrysomitridops*, *Oreomyza*, and *Hemignathus* present common characters which enable them to be distinguished as constituting a peculiar Hawaiian family—Drepanididæ. This last-stated fact has been guessed at before, but now rests on solid grounds. Three plates are well devoted to the illustration of Dr. Gadow's anatomical researches.

It may perhaps be as well to point out that Lichtenstein's 'Verzeichniss' (referred to under *Psittacirostra psittacea*, p. 2) is a list of *duplicates*. It is consequently no argument that because species are not included in it they were therefore "presumably not in the Berlin Museum in 1823"—only that there were no duplicates of them in the Berlin Museum at that date.

XIII.—Letters, Extracts, Notices, and Obituary.

THE following letters have been addressed to the Editor of 'The Ibis':—

Royal Zoological Museum, Dresden,
August 21st, 1891.

SIR,—It is only just now that I have discovered a misprint in my paper, "Field-Notes on the Birds of Celebes," in 'The Ibis' for 1879 (ser. 4, vol. iii. p. 130), which I am bound to correct, as it might mislead other naturalists. I there say, under the head of *Criniger aureus*, that I discovered this bird on the highest summit of the chief island of the Togian group, in the Gulf of Tomini, "about 6000 feet above the sea." It ought to be "about 1000 feet"! If such a high mountain existed on one of the islands of this group, it might induce some one to go there for a successful collection-trip. Now I will not say that it would not be well to go there for that purpose, but at any rate a mountain

of only 1000 feet does not give such a good chance as one of 6000 feet high. So far as I am aware, no naturalist has visited the Togian Islands since I was there in 1871; but these islands ought to be revisited, for I am sure that many interesting discoveries may still be made on that tropical island-group. Besides the new birds, procured in a few days, and described by Lord Walden as *Loriculus quadricolor*, *Criniger aureus*, and *Carpophaga pulchella*, a *Sauropatis* brought by me from Togian is considered by Dr. Sharpe as new, as he has lately informed me; and as I only got examples of 58 species altogether in this locality, there can be no doubt that many more, and even new ones, still remain to be discovered. I do not speak of novelties amongst other classes of animals, which would certainly be numerous.

Yours &c.,

A. B. MEYER.

Croft House, Holywood, Co. Down,
26th October, 1891.

SIR,—I suppose we may thank the gales of the last few weeks, commencing with that of the 26th September, for several uncommon bird-visitors to the North of Ireland.

A Wilson's Petrel (*Oceanites oceanicus*) was found at Seymour Hill, near Dunmurry, Co. Antrim, on or about 1st October. I examined it in the flesh on the 3rd October. Thompson's (I believe the only previous) record of this bird in Ireland is open to question; but the species may now, without the slightest hesitation, be added to the Irish list.

Within three weeks of the gale of the 26th September I heard of or saw ten Fork-tailed Petrels (*Procellaria leucorhoa*) and one Storm-Petrel (*Procellaria pelagica*). They occurred in the counties of Derry, Antrim, and Armagh.

Within the last two weeks I have seen two Grey Phalaropes (*Phalaropus fulicarius*), one shot near Toome and one on Lough Neagh, and I have heard of two others, one shot and the other caught alive near Green Castle, Co. Donegal.

Two Black Terns (*Hydrochelidon nigra*) were shot last

week near Culmore, Co. Derry; and on the 10th instant a Roller (*Coracias garrula*) was shot near Inch, Co. Donegal.

Yours &c.,

R. LLOYD PATTERSON.

Museum of Science and Art, Edinburgh,
November 18th, 1891.

SIR,—I had followed up my slight note on the occurrence of *Grus leucogeranus* in the Outer Hebrides (Ibis, 1891, p. 635) by the full and interesting particulars relating to its capture &c. which had been kindly furnished to me by Mr. Harvie-Brown, to whom they had been communicated by Dr. John MacRury who shot the bird.

Since then, however, Mr. E. W. Marshall, of Marlow, Bucks, has written to the 'Field' (Nov. 14th, 1891, p. 758) to inform the public that there escaped from his keeping, in August last, a bird of this species, which had been "brailed," and not pinioned in the ordinary way. This bird Mr. Marshall considers is probably identical with the one which met with its death in the far-off island of Barra, and in this opinion I entirely concur.

I must therefore request you, Sir, to withdraw my communication and to insert in its stead this letter as my further contribution to the subject. The elucidation of the truth is always a matter for congratulation, and the information which has been adduced regarding the origin of this particular specimen being in all respects satisfactory, it affords me pleasure to make it known to you.

Yours &c.,

WM. EAGLE CLARKE.

The College, Durham,
1st December, 1891.

SIR,—An expression in your notice of a memoir by Dr. Koenig on the ornithology of the Canaries, in your last number, seems to call for a word from me.

I had not seen nor heard of this memoir till I saw your notice; and, now that I have read the attack upon myself, I

should have passed it over in silence had it not been for your note, for I am loth to waste time and paper on such a petty personal matter. My intercourse with Dr. Koenig was very slight. I called on him twice, and saw him for a few minutes on each occasion. He returned my first call when I was out. This was the whole of our acquaintance. When I visited him after his return from Palma my chief object was to caution him about an imposition that had been practised on him, a neotropical Owl-skin (*Glaucidium siju*), the history of which I knew, having been palmed off upon him as shot in Teneriffe*. He showed me what he got in Palma. I saw examples of *Columba lawrivora*, which I well knew to exist in that island, my friend Capt. Kent having shot several there three years before. I observed, "Why you told Mr. Meade Waldo that *C. livia* was the only Pigeon to be found in Palma!" He stammered out some excuse, and told me he had found a new Robin and a new Finch. I simply replied, "Oh! they are only varieties. Mr. Waldo tried to make a new species of the Gomera Robin, but it would not do." As to the rivalry which your review suggests, the idea is too absurd. Mr. Meade Waldo and I had been ransacking the islands for two years, and Mr. Meade Waldo is an excellent Spanish scholar, while Dr. Koenig does not speak the language. In conclusion I must express regret that the editor of a journal of such repute as the 'Journal für Ornithologie' should have condescended to exhibit such petty international jealousy as is shown in his editorial note.

Yours &c.,

H. B. TRISTRAM.

7 Radnor Place, Hyde Park, W.,
3rd Dec., 1891.

SIR,—Owing to unusually stormy weather during the past autumn, and especially to the prevalence of gales more or less from the westward, an unusual number of irregular visitors have been noticed on the coasts of the United Kingdom. For instance, Wilson's Petrel (*Oceanites oceanica*)

* See editorial remarks, 'Ibis,' 1891, p. 616.

is a species which loves the open sea, and never willingly enters so much as a bay or an estuary; yet one example has been obtained in Co. Down and another on Lough Erne in Co. Fermanagh—the first recorded occurrences in Ireland; while Mr. Henry Evans informs me of one obtained on the island of Jura—the first in Scotland, I believe. As for the Fork-tailed or Leach's Petrel (*Procellaria leucorrhœa*), Mr. Williams, of Dublin, had received twenty-seven specimens between Sept. 28th and Oct. 9th, while many others are chronicled from various places. Manx Shearwaters (*Puffinus anglorum*) also have been more frequent inland than is customary, even in autumn. At least three examples of *Xema sabinii* have been obtained, and one of these, sent for my inspection by Mr. R. E. Coles from Lymington, Hants, is a fully adult bird, only two such being previously known to me as having occurred in the British Islands. There has also been a great arrival of Grey Phalaropes, and, coincidently with the presence of some of the largest flocks of this species, a considerable number of the Long-tailed or Buffon's Skua (*Stercorarius parasiticus*) have been noticed, upon which I propose to make a few remarks.

On 20th October a Long-tailed Skua was captured on some flooded meadows near Christchurch, Hants, and shortly afterwards forwarded to the Zoological Society by Mr. Edward Hart—the first time the species had ever been represented in the Society's Gardens, where I inspected it a few days later. In a letter addressed to Mr. Sclater, dated 8th Nov., Mr. Hart gives some interesting details, from which it appears that on the 21st October he obtained two more living examples; while at different times he observed numbers, five being on view at once, and over twenty were killed in Hampshire. The greater number of these were adult birds, but most of them had moulted their long tail-feathers, though some still retained them, in a worn condition. A few days later all these Skuas had left. Through Mr. W. B. Tegetmeier, the British Museum received a specimen of Buffon's Skua from Worcestershire and another from Ilfracombe in Devonshire, both of which I have examined, one

of these having the long tail-streamers. The Rev. H. A. Macpherson informs me that about two dozen adults and birds "in change" have been killed between Walney Island and the Solway Firth. Dr. E. A. S. Elliot writes to me from Kingsbridge, South Devon, that a dozen examples have been obtained in that neighbourhood. Many of these Skuas appear to have been quite exhausted, and their stomachs to have been empty. Judging from the specimens I have seen, I am inclined to think that the late Mr. Gould was to some extent right in his supposition ('B. of Gt. Britain,' v.) regarding the autumn plumage of the adults. I believe that birds which are so far adult as to have bred during the previous season may assume a few new grey-tipped feathers on the back at least during the autumn; in other words, that they "go back" a little. They may even get barred feathers on the flanks and under tail-coverts; though I doubt it, for the Mevagissey example, upon which Gould based his belief of this, is before me, and is clearly an immature bird, which would not have bred till the following season. But I expect that these traces of reversion cease as soon as the birds become really mature.

As regards distinctions between immature examples of the Long-tailed Skua and the Arctic or Richardson's Skua (*S. crepidatus*), I have tried in vain to find any quicker and readier test than that afforded by the shafts of the primaries. In the Long-tailed Skua the two outer ones are bright ivory-white, the third is generally dusky, and the rest are distinctly brownish all the way, unless rubbed; whereas in the Arctic Skua all the shafts are white for the greater part of their length, and are only dusky near the tips. Now and then comes "a teaser," but not often; there is an adult in the British Museum, which I am somewhat inclined to consider may be a hybrid. When the shaft-test is not a success, then other evidence must be brought to bear, but it usually suffices. In the 4th ed. of 'Yarrell,' iii. p. 678, I unfortunately made the slip of inserting the distinction for the Long-tailed under the Arctic Skua; and although this was speedily corrected in the errata, and also in a special para-

graph in the preface, yet it is continually being brought up against me, for few people refer to errata or read prefaces!

An excellent ornithologist has recently expressed to me his dissatisfaction with the term "Arctic" Skua for *S. crepidatus*, because, he says, a bird which breeds in Scotland is not Arctic. I should be glad of any better name (for Richardson's Skua is unsatisfactory), but if a bird which goes at least up to 82° N. lat. and probably further is not Arctic, pray what is?

Yours &c.,

HOWARD SAUNDERS.

The Bird-Gallery in the British Museum.—No one interested in the progress of ornithology should omit to visit the Bird-gallery in the British Museum and see the grand reform that has been commenced there. The division appropriated to the Woodpeckers has been cleared of all the numerous uniformly mounted specimens which formerly crowded its shelves, and now contains a small series of well-mounted specimens selected to show the principal variations in this family of birds. Examples of the giant *Campophilus imperialis* and the minute *Picumnus undulatus* show the extreme range, as regards size, in the Woodpeckers. Other specimens represent the three subfamilies (Picinæ, Picumninæ, Iynginæ) in which these birds are arranged in Mr. Hargitt's recently-published catalogue, and besides these many of the leading genera are exemplified. Specimens of nests and eggs show the mode of nidification of the Picidæ, and diagrams and special mounted parts point out the peculiarities that distinguish the Woodpeckers from other birds and the various groups of Woodpeckers from each other. To every specimen is attached a small map to show the distribution of the species. In short, we have before us a complete and instructive epitome of the group, presented to us in an intelligible way, instead of a mass of individual specimens from which it is hardly possible to derive any instruction at all.

On behalf of ornithologists generally, we venture to express a hope that this much-needed reform will be continued

through the entire gallery. As is well known to us all, the collection of skins in cabinets (stated now to be some 300,000 in number) is in these days always resorted to by the working student. The gallery is seldom referred to except for the purpose of examining old types, which, if the new system is carried out, will be dismantled and placed in the cabinets. Under these circumstances the best use that can be made of the gallery is to convert it into an Index-Museum, wherein may be exhibited a complete series of the leading forms of bird-life arranged in systematic order. This, we take it, is the leading idea of the authorities in the alteration recently effected, and will, we are sure, meet with hearty approval from members of the B. O. U., as well as from the ordinary visitor, who wishes to get a general idea of Birds and their variations.

The Bird-Collections in the Oxford University Museum.—Having recently paid a short visit to Oxford, I took the opportunity of examining the collection of birds in the University Museum, and have come to the conclusion that it is not in a very satisfactory state. It is unfortunate that there seems to be no one now at Oxford who cares for the science of ornithology. The residents of one of the most convenient places in the world for a scientific student have not even one ornithologist amongst them to look after the collection and to keep it up to the mark. I venture to offer a few remarks on its present condition. There are, at present, three series of mounted specimens of birds in the Oxford University Museum.

(1) The general series in the Great Hall. This is contained in twelve cases, placed in opposite rows of six each, but rather mixed up with mammals, shells, and other objects. The specimens are arranged according to Gray's 'Genera,' and mostly correctly named; but many of them are in bad order and miserably set up, and should be replaced by fresh specimens. The whole series requires renovation and rearrangement according to some modern system, and the "Orders" and "Families" should be designated by labels and distinctly separated one from another.

(2) The collection of Arctic birds formed by Mr. J. Barrow, F.R.S., and presented to the Museum by that gentleman. This interesting collection, which has been well described by Mr. Harting (*P. Z. S.* 1871, p. 110), is placed in the gallery. It is well mounted and correctly named. But it is a question whether it is desirable to keep it apart from the general series.

(3) The British series, also placed in the gallery, which is in fair order, although it also requires revision and rearrangement according to some modern system. It ought not to be difficult to find some member of the B. O. U. to undertake this task, provided that the authorities will allow him a "free hand."

Besides the mounted specimens there are, as I understand, a large number of skins of birds, mostly "put away" in boxes in various parts of the building. Of these the only portion I was able to see was the collection formed by Mr. W. H. Treacher in Borneo, and partly described by Dr. Bowdler Sharpe in 1879 (see *Ibis*, 1879, p. 233). This is placed in some drawers in the main hall. The other collections are stated to be "boxed up," and kept partly in a room on the ground-floor and partly in some "upper chamber," to which no ready access is possible.

I venture to suggest that one of the side rooms on the ground-floor should be cleared of its heterogeneous contents and devoted to the bird-skins, to be arranged here in cabinets, so as to be accessible to the ornithologist. It is hardly right for a great and rich University to accept collections of birds from those who, in the words of Bonaparte, put forward on a similar occasion, "*croyants qu'ils travaillaient pour la Science, n'ont travaillé que pour les mites*"*.

* Some remarks nearly similar to these were published in '*Nature*' for October 1st, 1891. I am much pleased to hear that they have attracted attention, and that the rearrangement and improvement of the collections of birds, as well as of other objects in the Museum, are occupying the attention of the University authorities.—P. L. S.

Summer Migrants at Fort Simpson.—Mr. R. G. McConnell, in his Report on his expedition of 1887–88 in the Mackenzie and Yukon districts of the North-west of Canada, gives the following notes on the arrivals of summer migrants at Fort Simpson, at the junction of the Liard and Mackenzie rivers (62° N. lat.) :—

“The warm weather which commenced on the 1st of May continued throughout the month, and under its influence the snow quickly disappeared, and the spring advanced with astonishing rapidity. On the 20th of April, the first day the temperature rose above freezing-point for nearly six months, the Barking Crow (*Corvus americanus*) made its appearance. The Raven (*Corvus corax*) had remained throughout the winter. On the 1st of May some Canada Geese (*Branta canadensis*) were seen at the edge of an open place in the river, accompanied by a flock of Mergansers and other Ducks. The 4th brought the Robin (*Turdus migratorius*) and some Sparrows, and on the 5th the Wavies (*Anser hyperboreus*), which usually lag a few days in the rear of the Canada Geese, commenced to wing their way northwards, and in a couple of days were passing in such numbers that flocks were rarely out of sight. The first Goose was shot at the fort on the 5th, the successful marksman receiving, according to immemorial custom at the Hudson’s Bay establishments, a present of a pound each of the two luxuries of the country, tea and tobacco. By the 10th the ground was bare in many places, and such late birds as the Swallow and Plover had arrived.”

Obituary.—AUGUST VON PELZELN ; THOMAS W. BLAKISTON ; F. W. MEVES.

AUGUST, EDLER VON PELZELN*, was born at Prague, on the 10th of March, 1825, the son of Joseph von Pelzeln and his wife, who was a daughter of the famous writer, Caroline Pichler. Soon after the birth of August, the family moved to Vienna, where the father died.

* Mostly translated from a notice in ‘Die Schwalbe,’ xv. p. 237 (Nov. 1st, 1891).

August von Pelzeln was devoted to Natural History from his earliest youth, and at first much interested in Entomology. After completing his University studies, it was his earnest wish to obtain a place in the Imperial Cabinet of Natural History; but, as there seemed no chance of such an opening, he determined to study law, and after passing the necessary examinations, was admitted to practise in the Vienna Courts. In the beginning of 1851, however, an opportunity presented itself of obtaining a subordinate place in the Museum. This was as assistant to Dr. C. Diesing, who was gradually losing his eyesight. Here he had excellent opportunities of indulging his taste for Natural History, being engaged in writing out from dictation the results of Diesing's work, and in making microscopical observations for him. Pelzeln remained Diesing's trusty assistant and amanuensis until the death of the latter in 1867.

In 1852, upon the death of Heckel, Pelzeln took over the care of the collection of birds, and in 1869 that of the mammals, of the Imperial Collection, and did much for the enrichment of both these Departments. In 1857 he became Custos-Adjunct, and in 1869 Custos.

In 1883 Pelzeln's sight began to fail him, and the evil increased for several years, during which, however, he accomplished the transference of the Collections into the new Natural-History Museum-Building in the Ringstrasse. The malady still increased, so that in 1888, after thirty-seven years' service to the State, during which he had never taken a rest, he was obliged to ask for his retirement, and on this occasion received the decoration of the Ritterkreuz of the Order of Franz-Joseph. Although Pelzeln retired from the Museum at this period, he continued to work as much as possible in his own branch of science. He assisted in the management of the Ornithological Union of Vienna, and resumed, along with Herr Pallisch, the editorship of 'Die Schwalbe,' the organ of that Association, in which he had taken part in former years. In addition to his bad eyesight, a malady in the feet supervened, which carried him off on the 2nd of September of last year.

A. von Pelzeln was never married, but lived a domestic life with his two sisters. He was highly appreciated by his colleagues, and well known for his quiet, benevolent, and religious disposition. Of him it may be truly said that he never had an enemy.

The publications of our deceased Honorary Member were, as is well known to us, very numerous. It is unnecessary to give a complete list of them, but Herr von Pelzeln's name will ever be known to ornithologists as the author of an excellent account of Johann Natterer's great Collection of Birds made in Brazil from 1817-1835. This was published in 1871 under the title '*Zur Ornithologie Brasilien's*.'

Other well-known works of Pelzeln are his volume on the Birds of the Novara-Expedition, and his '*Ornis Vindobonensis*.' His minor ornithological memoirs were published mostly in the '*Verhandlungen*' of the Zoological and Botanical Society of Vienna, of which he was one of the founders, in the '*Sitzungsberichte*' of the Imperial Academy of Sciences of Vienna, in the '*Journal für Ornithologie*,' and in this Journal.

Pelzeln was a member of most of the leading ornithological Societies of Europe and America. He was elected an Honorary Member of the British Ornithologists' Union in 1869. Those of us who have had the pleasure of personal intercourse with him will be unanimous in lamenting the loss of a sincere friend and excellent correspondent. No one who addressed inquiries to the Custos of the well-known Vienna Collection of Birds ever failed to receive an immediate and satisfactory reply, and every possible assistance in his work.

CAPTAIN THOMAS WRIGHT BLAKISTON, late R.A.—It is with much regret that we have to announce the death, in New Mexico, on the 17th of October last, of Captain Blakiston, to whom we are indebted for so much of our knowledge of Japanese Ornithology. Captain Blakiston, who was born in 1832, belonged to an old Durham family, and, after passing through Woolwich, obtained a commission in the Royal Artillery. In 1861 he wrote a very interesting paper for this Journal on a collection of birds which he had made

in North-west Canada, and in the following year he published a narrative of his adventurous expeditions up the river Yangtze, for which he received the gold medal of the Royal Geographical Society. He then settled at Hakodadi, in the north island of Japan, and devoted much attention to the Birds of Yesso, discovering many new species, writing various papers which appeared in this Journal, the '*Chrysanthemum*,' and the '*Transactions of the Asiatic Society of Japan*,' and sending small collections of new or rare birds to Mr. Swinhoe, and, after the death of that distinguished ornithologist, to Mr. Seeböhm. In conjunction with Mr. Harry Pryer of Yokohama, Captain Blakiston succeeded in adding more than a hundred species of birds to the avifauna of Japan. A few years ago Captain Blakiston removed from Hakodadi to the United States, and took up his residence at London in Ohio, and quite lately, we believe, in New Mexico. His last ornithological paper was an essay on the "*Water-Birds of Japan*," published in the '*Proceedings of the United States National Museum*.'

FRIEDRICH WILHELM MEVES, or WILHELM MEVES (as he always signed himself), who died suddenly at Stockholm on the 9th of April last, the son of a Pastor, was born at Dellingsen, in the Duchy of Brunswick, on the 14th April, 1814. With him, as with many other celebrated naturalists, the taste for natural history was developed at a very early age, for when only eleven years old he commenced to form a collection of birds. When Meves was only thirteen years of age he lost his father, and was adopted by an uncle, Pastor Luder. Two years later he was apprenticed to a chemist. In 1840 he went to Kiel, where he entered the University as a student, and soon obtained an appointment in the Kiel Museum. Here he became acquainted with Fr. Boie, in whom he found a firm friend. Professor Sundevall visited Kiel in 1841, and having formed a high opinion of Meves's talents as a naturalist, and especially as a skilful taxidermist, offered him the post of "*Conservator*" at the Stockholm Museum, which was accepted in 1842. At Stockholm Meves remained and worked, until he was pen-

sioned in 1877. During his service at Stockholm, Meves visited many parts of Sweden, from Skåne up to Lapland, also Northern Russia, the Ural, &c., for the purpose of collecting birds and eggs. He also published many interesting records of his observations.

Meves's chief aim was to form, for the Stockholm Museum, a perfect collection of Palæarctic birds in all the various plumages, from the nestling upwards, and in this object he was eminently successful. When, on giving up his appointment at the Museum, he could no longer continue this pursuit, he commenced forming a Palæarctic collection of Lepidoptera, and his collection of these objects is said to be one of the best in private hands. This collection he left to the Stockholm Museum, having also, previously to his retirement in 1877, presented to the same institution a very large collection of Palæarctic eggs, which he had formed. Meves married, in 1844, a daughter of Karl Lappe, the poet, who died last year, and having had no children, adopted a nephew, who is now in the Swedish Government service.

In person Meves was strongly built, of medium height, with a heavy shock of grizzled hair, a large grey beard, and a pleasant open expression of countenance. As a field-naturalist and a collector he was excellent, and as a taxidermist, especially in the preparation of birds in down, few could equal him.

Although he commenced his researches in Natural History so early in life, Meves did not publish anything until he reached middle age; his first article, that on the change of colour in birds without and irrespective of moulting, was published in 1854. Since then he has written many articles, which have chiefly appeared in the '*Öfversigt af K. Vetenskaps-Akademiens Förhandlingar*,' and in the '*Journal für Ornithologie*.' Amongst these we may specially mention his various memoirs on the birds of Sweden, and his ornithological observations in North-west Russia. To him also the credit is due of having described the mode in which the "bleating" of the Snipe is produced (*cf.* P. Z. S. 1858, p. 199).

THE IBIS.

SIXTH SERIES.

No. XIV. APRIL 1892.

XIV.—*Short Notes on the Birds of the Estancia Espartilla, Argentine Republic**. By A. H. HOLLAND.

THESE notes relate to specimens of birds and their eggs collected on the Estancia Espartilla, in the Argentine Republic, in the years 1888-91. This estancia, which is about sixty square miles in area, is situated midway between the stations Ranchos and Chascomus, on the Great Southern Railway of Buenos Ayres. To the south-west of it runs a chain of lakes, which border it for some twelve miles, when rain is plentiful. Otherwise the camp is comparatively free from water, excepting a few lagoons and a small arroyo, which depend on the rain for their existence. The long "paja-grass" still abounds in many parts, whilst montes of eucalyptus and peach are very plentiful. The average midday summer temperature in

* [Mr. Holland has already favoured us with two short contributions on this subject (see *Ibis*, 1890, p. 424, and 1891, p. 16). During his stay in England he has rearranged his collection, and has kindly written some notes on all the species of which he obtained specimens. It will be observed that Mr. Holland has added the following four species to the Argentine List:—

- No. 10. *Tachycineta meyeni*.
- " 12. *Procnias tersa*.
- " 14. *Spermophila obscura*.
- " 116. *Sterna anglica*.

—P. L. S.]

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No. XIV. APRIL 1892.

XIV.—*Short Notes on the Birds of the Estancia Espartilla, Argentine Republic**. By A. H. HOLLAND.

THESE notes relate to specimens of birds and their eggs collected on the Estancia Espartilla, in the Argentine Republic, in the years 1888-91. This estancia, which is about sixty square miles in area, is situated midway between the stations Ranchos and Chascomus, on the Great Southern Railway of Buenos Ayres. To the south-west of it runs a chain of lakes, which border it for some twelve miles, when rain is plentiful. Otherwise the camp is comparatively free from water, excepting a few lagoons and a small arroyo, which depend on the rain for their existence. The long "paja-grass" still abounds in many parts, whilst montes of eucalyptus and peach are very plentiful. The average midday summer temperature in

* [Mr. Holland has already favoured us with two short contributions on this subject (see Ibis, 1890, p. 424, and 1891, p. 16). During his stay in England he has rearranged his collection, and has kindly written some notes on all the species of which he obtained specimens. It will be observed that Mr. Holland has added the following four species to the Argentine List:—

- No. 10. *Tachycineta meyeni*.
- " 12. *Procnias tersa*.
- " 14. *Spermophila obscura*.
- " 116. *Sterna anþlica*.

—P. L. S.]

this district is about 98° in the shade, whilst in the winter nights the thermometer marks occasionally 4° of frost.

The specimens have in nearly every case been submitted to Mr. Sclater for identification, and the arrangement and nomenclature of his 'Argentine Ornithology' are followed.

1. *MIMUS MODULATOR* (Gould).

Very common in the montes at all seasons, and has a more powerful song than any other bird with us. It nests early in September, and rears two broods a year. The young accompany the parent birds until the following spring, when they pair for life. I have never seen this Thrush in flocks. The nest is composed of twigs, roots, and grass; it is lined with grass and feathers. Eggs five. The native name is "Calandria."

2. *POLIOPTILA DUMICOLA* (Vieill.).

Fairly common all through the year, living almost entirely amongst the bushes and hedges.

In its movements this bird much resembles a Tit, being ever on the move. It seems to prefer companionship, being seen in small flocks in the winter months. It nests with us, but so far I have been unable to find its breeding-place. It has no song, but twitters occasionally.

3. *TROGLODYTES PURVUS* (Gm.).

Very common at all seasons, living especially in gardens near dwellings. In its movements it somewhat resembles the British Wren, but is more careful to conceal itself, although it is very fearless of man. It nests in almost any cavity that is large enough, such as disused Oven-birds' nests, skulls, or holes in walls. The nest is composed of grass, hay, and rootlets, and is lined with horse-hair and feathers. It is cup-shaped, with the foundation very high. The usual number of eggs is five.

4. *CISTOTHORUS PLATENSIS* (Lath.).

Very common at all seasons, excepting the autumn, namely from February to May, when it seems to disappear and is only found in the marsh-lands. At all other times it

lives amongst the tallest paja-grass. It is extremely hard to shoot, as it darts suddenly up and then shoots low down into a neighbouring clump of grass, being thus hidden after its first rise. It does not seem to flock or to migrate.

5. ANTHUS CORRENDERA, Vieill.

One of the very commonest birds at all seasons in the open camp. It appears to pair for life, never flocks or migrates, and breeds early and late in the season, bringing up two or three broods a year.

Its cup-shaped nest is composed of hay, and is lined with horse-hair. It is placed under a tuft of short grass on the ground. The eggs are four in number.

6. PARULA PITIAYUMI (Vieill.).

I have noticed this species occasionally in the autumn, hopping about the aroma-trees in company with *Serpophaga subcristata*.

7. PROGNE CHALYBEA (Gm.).

This Martin arrives in numbers in August and departs early in April. They breed under the eaves of sheds, making a mud wall on the outside of the nest, which is composed of straw and lined with a few dry leaves. The nest is placed on a plank or flat surface, with the mud-protection on its outer side. Eggs six in number, white, rather elongated. When the young are fledged they and the parent birds roost in the withered branches of eucalyptus instead of under the eaves. It breeds about the second week of November. The native name is "Calandrina."

8. PROGNE TAPERA (Linn.).

This Martin arrives a little later and departs a few days sooner than *P. chalybea*, but is found in equal numbers. It breeds invariably in Oven-birds' nests, lining the inside chamber with feathers. The eggs are six in number.

9. TACHYGINETA LEUCORRHOA (Vieill.).

This little Swallow arrives latest of all the Hirundinidæ and departs the soonest. It builds in the disused holes of *Geositta cunicularia*, making a nest of hay lined with feathers

at its inmost point. The eggs are six in number. It breeds at the end of October.

10. *TACHYGINETA MEYENI*, Bp. ; Holland, Ibis, 1891, p. 16.

This Martin is the commonest of the family here, arriving late in July and departing in April, although many remain with us all the year round, retiring on the coldest nights to the long *paja-grass*, from which one rouses them as one rides along. In the daytime these birds hawk around travelers, catching the numberless insects roused by them. The nest is placed in Oven-birds' nests, holes in trees, spouts, and under eaves; it is composed of a little straw, thickly lined with numberless soft feathers. The eggs are six in number, white and rather blunt. It breeds in the middle of October.

11. *TANAGRA BONARIENSIS*, Gm. ; Holland, Ibis, 1891, p. 17.

Arrives here in great numbers in May, but departs in September, although a few immature males remain until the end of October. Its native name is "*Siete Colores*."

12. *PROCNIAS TERSA* (Linn.); Holland, Ibis, 1891, p. 16.

The single female mentioned in my former paper is the only specimen of this species I have ever seen here. It was feeding on the berries of the *Ligustrum* tree. The specimen is now in the British Museum.

13. *SPERMOPHILA CÆRULESCENS* (Vieill.).

Arrives here in August and departs in March. The nest is cup-shaped, very strongly made of horse-hair and rootlets, without any lining, so that one can see through the bottom. It is firmly fastened to branches, not resting in a fork. The eggs are three in number, white, slightly spotted with purple, greatly blotched at the larger end with dark brown, and slightly so all over. The bird, which is fairly common, breeds at the end of November.

14. *SPERMOPHILA OBSCURA*, Tacz. ; Sharpe, Cat. B. xii. p. 101*.

White-throated Finch, Holland, Ibis, 1890, p. 426.

* [This is a very interesting bird and new to the Argentine avifauna. It seems to agree with a specimen in the British Museum obtained at Salta by Durnford in 1878.—P. L. S.]

Arrives here in September and departs in March. Not common. Breeds second week in November. The nest is cup-shaped, placed in the fork of a branch, and is a beautiful structure. It is composed of a few twigs and rootlets, interwoven with leaves, moss, and thistle-down, the lining being short white cow-hair. The eggs are three in number, white, faintly spotted with pale red and purple at the larger end. It inhabits the montes and plantations. It possesses no song, but has an often-repeated call of two high notes.

15. *PAROARIA CUCULLATA* (Lath.).

Fairly common throughout the year, inhabiting the montes and feeding around the yards. Nests late in November, making a shallow structure of hay and rootlets, lined with horse-hair, which is very well put together and firm. The eggs are four in number. The native name is "Cardinal."

16. *ZONOTRICHIA PILEATA* (Bodd.).

Very common all the year in flocks from May to August. Native name "Chingolo."

17. *EMBERNAGRA PLATENSIS* (Gm.).

Common throughout the year, living in the tall pajagrass. It lives in pairs, is never seen in flocks, nor does it migrate. Breeds early in November, in a nest composed of grass and hair, placed under the clumps of tall grass on the ground. Eggs five in number, rarely with parasitical eggs in the nest.

18. *CHRYSOMITRIS ICTERICA* (Licht.).

Very common throughout the year, and in flocks immediately after nesting. Has a melodious twitter. Breeds late in November, and is easily tamed.

19. *SYCALIS PELZELNI*, Scl.

Common throughout the year, flocking in the winter months, when it feeds on seeds, contrary to its summer diet, which largely consists of insects. Nests in Oven-birds' nests, cavities in walls, or under eaves. Eggs four in number. Breeds early in November.

20. *PASSER DOMESTICUS* (Linn.).

The Common House-Sparrow of Great Britain has been introduced into Argentina and is occasionally met with.

21. *SYCALIS LUTEOLA* (Sparrm.).

Very common throughout the year, flocks in the winter months. Breeds late in November, and soars immediately before nesting. It has a melodious song, though feeble. Nest composed of hay, grass, feathers, and lined with horse-hair, placed under grass on the ground. Eggs five in number.

22. *MOLOTHRUS BONARIENSIS* (Gm.).

Very common throughout the year, in flocks in summer and winter, and does not appear to pair for breeding. The females lay their eggs from September to January in any small bird's nest that they can find. The eggs vary from pure white to nearly pure red, with intermediate varieties and differently spotted markings. The native name is "Pajaro Negro."

23. *MOLOTHRUS RUFO-AXILLARIS*, Cassin.

Rather rare, apparently migrating for the winter. Breeds late in November in the usurped nests of *Anumbius acuticaudatus*, where *Molothrus badius* also makes its abode. Eggs six in number.

24. *MOLOTHRUS BADIUS*, Vieill.

Fairly common all the year, pairs in the spring, but flocks in the winter. Breeds throughout November in the disused nests of *Anumbius acuticaudatus*, but makes its own entrance to these nests, instead of using the one already constructed. Eggs five in number.

25. *AGELEUS THILIUS* (Mol.).

Fairly common throughout the year, flocks in the winter. Breeds late in October, either in the tall paja-grass or amongst reeds in lagoons. Eggs four in number.

26. *LEISTES SUPERCILIARIS* (Bp.).

Common throughout the year, flocking in the winter months. Breeds early in November, and makes its nest on

the ground under tufts of grass. Nests very hard to discover. Eggs four in number. Native name "Becho colorado."

27. *AMBLYRHAMPHUS HOLOSERICEUS* (Scop.).

Rare. Inhabits the rushes in lagoons, where it apparently lives the whole year. Seems to pair for life, never flocking.

28. *PSEUDOLEISTES VIRESCENS* (Vieill.).

Very common throughout the year, flocking in the winter months, when it roosts in the montes. Breeds early in October, either in low bushes or thistles or in tall clumps of *paja-grass*. Eggs four in number.

29. *TENIOPTERA CORONATA* (Vieill.).

Rare, being met with from March to June. (See *Ibis*, 1891, p. 17.)

30. *TENIOPTERA DOMINICANA* (Vieill.).

Rare; only one specimen seen, that in winter.

31. *ALECTRURUS RISORius*, Vieill.

Rare; only stragglers seen.

32. *LICHENOPS PERSPICILLATUS* (Gm.).

Common from August to April, but departs for the winter. Breeds early in November in *paja-grass*. Eggs three in number. Native name "Pico plata."

33. *MACHETORNIS RIXOSA* (Vieill.).

Common throughout the year; flocks in small numbers during the winter months. Feeds on the ground, catching insects as it *runs*. Breeds late in October, nesting behind bark, in Oven-birds' nests, or in cavities in walls. Eggs five in number.

34. *CENTRITES NIGER* (Bodd.).

Common from February to September in pairs, and the immature specimens appear to remain until November. (See also *Ibis*, 1891, p. 18.)

35. *SERPOPHAGA NIGRICANS* (Vieill.).

Common throughout the year, in winter occasionally seen in small parties, probably the parent birds and young to-

gether. Nests late in October. Nest composed of moss, grass, rootlets, hair, and on the outside spiders' webs, the lining being soft feathers. The nest is placed in shrubs, some six to ten feet from the ground. Eggs four in number, of a pure dull cream-colour, without spots.

36. *SERPAPHAGA SUBCRISTATA* (Vieill.).

Common throughout the year, the young remaining during the winter with their parents. Breeds late in October. Nest composed of moss, feathers, and spiders' cocoons, lined with soft feathers; it is placed in the fork of a small bush. Eggs three in number, of a pale cream-colour, unspotted. (Cf. *Ibis*, 1891, p. 18.)

37. *CYANOTIS AZARE* (Naum.).

Very common throughout the summer in pairs, always inhabiting the reedy lagoons. Nests early in November.

38. *ELAINEA ALBICEPS* (d'Orb. et Lafr.)*.

Rare. Appeared early in April in a flock inhabiting the paradise-trees, whence they took short turns after insects.

39. *PITANGUS BOLIVIANUS* (Lafr.).

Very common throughout the year, living in pairs and never flocking. Breeds early in September. Eggs five in number. Native name "Bien-te-veo." The fledglings possess the bright yellow crest of the old birds.

40. *PYROCEPHALUS RUBINEUS* (Bodd.).

Very common from September to March, departing north for the winter months. Breeds late in October. Eggs three in number. Native name "Churinche."

41. *TYRANNUS MELANCHOLICUS*, Vieill.

Fairly common from October to March, departing north for the winter months. Breeds late in November. Eggs three in number, differing greatly in size. I have taken eggs of *Molothrus bonariensis* from its nest which were spotted similarly to those of the Tyrant. The nest is placed at the outermost end of a bough and is very much exposed; it

* [One specimen of this species (No. 108) was at first erroneously referred by me to *Empidonax bimaculatus*. (See *Ibis*, 1891, p. 18.)—P. L. S.]

is very slight, being composed of a few roots and twigs firmly interwoven and lined with a little hay. The young of this species have not a yellow crest. (Cf. Ibis, 1890, p. 426.)

42. *MILVULUS TYRANNUS* (Linn.).

Very common from October to March, although many old birds migrate north in February. The young do not assume the bright crest until after the first moult. Breeds late in November. Eggs five in number. Greatly harassed in its nesting by *Molothrus bonariensis*. The native name is "Tijereta."

43. *GEOSITTA CUNICULARIA* (Vieill.).

Common throughout the year in pairs. Breeds early in November. Eggs five in number. Native name "Minera."

44. *FURNARIUS RUFUS* (Gm.).

Very common all through the year, never flocking in the winter. Breeds early in October. Eggs four to six in number. One nest I found curiously suspended from a thick branch, the upper mud-work of the nest enclosing the bough; otherwise the nest was similar to others of this species. The native name is "Ornero."

45. *CINCLODES FUSCUS* (Vieill.).

Fairly common from April to August in pairs amongst the vegetation around the lagoons.

46. *PHLÆOCRYPTES MELANOPS* (Vieill.).

Very common from August to February, departing for the winter months. Breeds in the middle of October among the rushes. Eggs three in number.

47. *LEPTASTHENURA ÆGITHALOIDES* (Kittl.).

Common throughout the year in the montes, flocking in small numbers during the winter. Breeds late in October, in disused Oven-birds' nests, making a nest of feathers and wool, sometimes lined with a little dry grass. Eggs three in number, of a dull white, very blunt in shape. (Cf. Ibis, 1890, p. 426.)

48. *SYNALLAXIS HUDSONI*, Scl.

Very common throughout the year, living in the paja-

grass in pairs. Breeds in the middle of November. Eggs five in number.

49. *ANUMBIUS ACUTICAUDATUS* (Less.).

Very common throughout the year in the montes, living in pairs. Breeds early in October, and will not desert its nest however much harassed. Eggs six in number. Native name "Liñatero."

50. *CHRYSURONIA RUFICOLLIS* (Vieill.).

Common during the summer months, but has a partial migration in winter. Breeds early in November. In December these Humming-birds collect round certain bushes of sweet-smelling blue flowers in numbers, old and young birds hovering around, chasing each other, and occasionally uttering a sharp note or two. On one's appearance they dart away, but return very shortly if the intruder remains quiet. The nest is placed in the fork of thick-leaved bushes, such as the orange or laurel, and is composed of moss, fibres of buds, and a little wool; the lining is made of thistle-down. It is a very compact cup-shaped nest, beautifully ornamented outside with lichen. Eggs two in number, pure white in colour. The crops of these birds contain many minute insects.

51. *CHLOROSTILBON SPLENDIDUS* (Vieill.).

Rather scarce, but easily confounded with *Chrysuronia ruficollis*, except the adult males. It seems to remain the whole year with us, though of more frequent occurrence in November and December. It breeds with us, but so far I have been unable to find its nest.

52. *CERYLE TORQUATA* (Linn.).

Very rare, this being the only specimen I have observed here. I shot it as I was bathing on December 31st, during the drought we had. Doubtless it was on the search for water.

53. *GUIRA PIRIRIGUA* (Vieill.).

Very common throughout the year, flocking in the winter, and even roosting in threes and fours huddled together.

Breeds early in December. Nest composed of twigs, roots, and hay, lined with wool, feathers, and hay. It is placed in the fork of a tree, some height from the ground. Eggs four in number, though many are laid waste on the ground. The native name is "Urruca."

54. *COCYZUS MELANOCORYPHUS* (Vieill.).

Rather uncommon, appearing in September and departing northwards in March. Breeds late in November. Nest very slight, composed of a few loose twigs, with a little lining of hay. Eggs three in number, of a uniform sea-green. The native name is "Coucou," from its call.

55. *CONURUS PATAGONUS* (Vieill.).

Very common, from March to August in large flocks. In spring they breed in some high banks about fifteen miles south of us. The native name is "Barrancaro."

56. *BOLBORHYNCHUS MONACHUS* (Bodd.).

Very numerous all the year, living in small flocks and breeding, as many as six pairs together, in the same large structure of nests. Its native name is "Lora."

57. *STRIX FLAMMEA*, Linn.

Uncommon, though they breed with us occasionally in the sheds.

58. *ASIO BRACHYOTUS* (Forst.).

Fairly common all through the year. Breeds late in November under tufts of paga-grass. Its native name is "Lechuzon."

59. *SPEOTYTO CUNICULARIA* (Mol.).

Very common all the year. Breeds early in October. Its native name is "Lechuza."

60. *CIRCUS CINEREUS* (Vieill.).

Not uncommon, resident all the year. (*Cf.* Ibis, 1891, p. 18.)

61. *BUTEO SWAINSONI*, Bp.

Of occasional appearance, arriving in immense flocks in January and departing a short while afterwards. (See my notes, Ibis, 1890, p. 426.)

62. *FALCO PEREGRINUS*, Linn.

Rare; a few pairs always to be found in certain spots. Breeds early in November in the *paja*. (Cf. *Ibis*, 1891, p. 19.)

63. *TINNUNCULUS CINNAMONINUS*, Sw.

Rare; I have observed only some three or four specimens here. They arrive in May and depart in August.

64. *ELANUS LEUCURUS* (Vieill.).

Very rare. So far I have been unable to procure a specimen, but I have seen several.

65. *ROSTRHAMUS SOCIABILIS* (Vieill.).

Fairly common from September to December. Breeds in the lagoons early in November. Associates in flocks.

66. *MILVAGO CHIMANGO* (Vieill.).

Very common all the year, flocking in the winter, when they roost in immense numbers amongst the *paja*. Breed early in September under thistles and grass, or in shallow nests in trees. Eggs three in number, varying in colour from the thickly spotted red varieties to nearly pure white ones. The native name is "*Chimango*."

67. *POLYBORUS THARUS* (Mol.).

Very common throughout the year, living in pairs and never flocking. Breeds late in October, either under the tall *paja*-grass or in a large nest made of sticks, lined with wool and hay, placed high in the trees. The native name is "*Carancho*."

68, 69. *PHALACROCORAX*, sp. inc.

Two species of Cormorant, examples of which I have so far been unable to procure, are found in this district. One is probably *P. brasilianus* (Gm.).

70. *ARDEA COCOT*, Linn.

Fairly common all the year round, living in pairs. It breeds with us, but so far I have not found its nest.

71. *ARDEA EGRETTE* (Gm.).

Fairly common all the year, being more numerous in November in flocks. Its native name is "*Mira-Sol*."

72. *ARDEA CANDIDISSIMA*, Gm.

Common all the year, being found in company with *A. egretta* during the autumn.

73. *BUTORIDES CYANURUS* (Linn.).

Very rare; I have observed only two specimens in November.

74. *ARDETTA INVOLUCRIS*, Vieill.

Fairly common all the year, living in pairs. Breeds early in November. Eggs three in number.

75. *NYCTICORAX OBSCURUS*, Bp.

Fairly common from September to January, living and breeding in the lagoons amongst the rushes. I have occasionally found them roosting in the montes in January.

76. *EUXENURA MAGUARI* (Gm.).

Common all the year round, flocking in the autumn and throughout the winter. Breeds early in October. The eggs are three in number, varying in size. The native name is "Ciguena."

77. *PLEGADIS GUARAUNA* (Linn.).

Very common throughout the year, seeming to be always about in flocks. I do not know where they breed. There is a partial migration from August to November. The native name is "Cuervo."

78. *THERISTICUS CAUDATUS* (Bodd.).

Fairly common in flocks from May to August. They have a settled roosting-place, as every evening they all take their departure southwards, returning next morning.

79. *PHIMOSUS INFUSCATUS* (Licht.).

Rare; appearing in May and departing early in August, living in scattered flocks.

80. *AJAJA ROSEA*, Reichenb.

Fairly common at all times in pairs or singly, both the pale and pink varieties. Breeds late in November. The native name is "Chopla."

81. PHÆNICOPTERUS IGNIPALLIATUS (Geoffr. et d'Orb.).

Fairly common in flocks from May to August, though many immature specimens remain all the year. The native name is "Flamingo."

82. CHAUNA CHAVARIA (Linn.).

Very common all through the year, living in flocks during the autumn and winter. Is able to soar to an immense height. Breeds early in September. Many eggs of *Metopiana peposaca* are laid in these birds' nests, though they are never hatched. The young bird is covered with yellow down. (Cf. Ibis, 1890, p. 427.) The native name is "Chaja."

83. CYGNUS NIGRICOLLIS, Gm.

Fairly common all the year, living in small flocks during the winter. Breeds early in August amongst the rushes in deep lagoons.

84. COSCOROBA CANDIDA (Vieill.).

Common all through the year; living in small flocks during the winter, but not mixing with *Cygnus nigricollis*. Breeds early in October amongst the rushes in shallow lagoons. The nest is shallow; it is composed of dry rushes built up from the bottom of the pond. The native name is "Ganso."

85. HETERONETTA MELANOCEPHALA (Vieill.).

Rare; individuals are to be found during winter in company with flocks of Teal. They appear to prefer small lagoons, with rushes growing in them, to open lakes or arroyos. They fly low, and do not make long flights until thoroughly disturbed. They are also sometimes seen in small flocks during July after heavy rains, but so far I have not observed any during the spring or summer. (Cf. notes, Ibis, 1891, p. 19.)

86. QUERQUEDULA CYANOPTERA (Vieill.).

Fairly common from February to October in pairs, although numerous pairs collect together into loose flocks. I have not observed any of this species from October through the summer. Their occurrence depends on the quantity of water

in the lagoons, as they rarely frequent the arroyos, and never appear to feed on land as *Dafila spinicauda* is in the habit of doing.

87. *QUERQUEDULA FLAVIROSTRIS* (Vieill.).

Common all through the year. Lives in small flocks during the winter, inhabiting the lagoons and arroyos. Breeds early in October under the tall paja-grass. Eggs five in number, of a rather darker shade of cream than those of *Q. versicolor*. Its native name is "Pato chico."

88. *QUERQUEDULA VERSICOLOR* (Vieill.).

Common throughout the year, flocking in small numbers during the winter months. Pairs early in September, when many resort to hay-stacks and nests of *Bolborhynchus monachus* to breed. In these positions the nests are composed of simply down as a lining, and the eggs are eleven in number, of a dull creamy white colour, rather blunt in shape. I have never been fortunate enough to see the young ones taken down to the water from the nests, but they never remain more than five or six days in the nest after they are hatched. The nest is also sometimes placed in short grass in the montes. During winter these Teal roost in numbers on the alfalfa stacks, also in the Parrots' nests—doubtless they are the same pairs that use these nests for breeding purposes. This is the only species of Duck I have seen that seems quite at home amongst trees, flying in and out of them before evening and perching on the branches. They also often feed amongst the thistles on the higher ground.

89. *DAFILA SPINICAUDA* (Vieill.).

Very common throughout the year when there is enough water. In winter it congregates in immense flocks, often feeding on the high ground on thistle-seeds. Nests early in September on the ground, amongst thistles and long grasses. Eggs seven in number. Its native name is "Pato del Campo."

90. *DAFILA BAHAMENSIS* (Linn.).

Fairly common all through the year, living in small flocks of from ten to twelve individuals during the winter months.

They frequent the arroyos and lagoons, also feeding amongst the dry thistles in the autumn. Of the breeding-habits of this Duck I know nothing, though many pairs frequent the reedy lagoons in spring. They appear fond of feeding on mud-banks, and mix very frequently with *Dafila spinicauda*.

91. MARECA SIBILATRIX (Pöpp.).

Common throughout the year, living in close flocks throughout the winter, and inhabiting the same lagoons as long as they contain enough water. They also often feed on high ground amongst dry thistles, or even in the open. This Duck breeds early in November amongst the rushes in the water. The nest is composed of rushes and grass, and is rather neat in appearance, resting on the water, supported by the dead vegetation underneath, the lining being down. The eggs are six in number, white in colour, and very round. The native name of this Duck is "Pato overo."

92. SPATULA PLATALEA (Vieill.).

Very common throughout the year, flocking in immense numbers during the winter, when they inhabit the edges of the large lagoons. Of their breeding-habits I know nothing, although these birds occur plentifully during the nesting-season.

93. METOPIANA PEPOSACA (Vieill.).

Common all through the year, flocking during the winter months. Breeds from September to November. The nest is placed in marshy ground amongst scattered rushes, and is composed of grass, dry rushes, and roots, the lining consisting of a little down. The eggs, eight in number, are dull cream in colour. This Duck also lays numerous eggs, perhaps waste ones, in the nests of *Fulica armillata*, *Fulica leucoptera*, *Larus maculipennis*, and *Chauna chavaria*. In the nests of the Coots these eggs were invariably found covered over by the lining of the nests, but in the others they lay amongst the eggs of the occupants. I have never observed any of these parasitical eggs hatched, though many have had dead chicks in them and many had become addled. The native name of this species is "Pato picaso." (Cf. Ibis, 1890, p. 427.)

94. *NOMONYX DOMINICUS* (Linn.).

Rare, living singly or in pairs in the small lagoons, either open or containing rushes. It is next to impossible to flush this peculiar Duck, as it takes after the Grebes and invariably dives when disturbed, so that I have never seen it on the wing. When swimming it holds its stiff tail spread out and erected, inclined somewhat towards its head, and as it swims very low in the water the Duck is only visible by its head, tail, and the top of its back. It builds amongst the rushes early in November, making a nest of green rushes with scarcely any lining, being a very flat construction. The eggs are three in number and white in colour, very rough and very round.

95. *ZENAIDA MACULATA* (Vieill.).

Very common throughout the year, flocking in immense numbers during the autumn and winter, when they roost in the montes, feeding during the day in the open camp or amongst thistles, and returning at dusk in flocks of about 40 individuals for over an hour, flock succeeding flock with great rapidity. It breeds from September to February, either in trees or even on the ground under thistles. The native name is "Torcasa."

96. *COLUMBULA PICUI* (Temm.).

Common throughout the year, flocking in small numbers during the winter months. Breeds throughout the spring and summer.

97. *RALLUS MACULATUS*, Bodd.

Fairly common. I have been so far unable to procure a specimen, but have often seen it and taken its eggs.

98. *FULICA ARMILLATA*, Vieill.

Very common throughout the year. Breeds early in September. Lives usually in open waters, but in the breeding-season takes to the densely covered lagoons to nest. The nest is composed of dry rushes and flags, lined with small chips of the same. Eggs seven in number, of a dull brownish cream-colour, thickly blotched and spotted with

dark purple and grey. Eggs of *Metopiana peposaca* are frequently found under the lining of the nest.

99. *FULICA LEUCOPTERA* (Vieill.).

Very common throughout wet years, flocking in immense numbers during the winter. Nests early in October in almost any piece of water without a shelter of rushes. The eggs are nine in number.

100. *ARAMUS SCOLOPACEUS* (Gm.).

Not uncommon amongst the dense rushes at all seasons, but does not appear to flock during the winter. Breeds early in October. The nest is composed of a mass of dry rushes with a slight depression for the eight or nine eggs, which vary greatly in size. The native name of this bird is "Bobo," on account of its stupid habit of allowing one to approach on foot, when the natives kill it by throwing a piece of wire and breaking its legs.

101. *VANELLUS CAYENNENSIS* (Gm.).

Exceedingly abundant all the year round. Breeds from July to October. Eggs vary in number from three to six, though usually four is the clutch. The native name is "Teru-teru."

102. *EUDROMIAS MODESTA* (Licht.).

Fairly common from March to August in scattered flocks, feeding either on high ground or on the muddy banks of the arroyos. The native name is "Chorlito." (Cf. Ibis, 1891, p. 19.)

103. *ÆGIALITIS FALKLANDICA* (Lath.).

Fairly common from March to September. Arrives along with the Sandpipers, being often found running about amongst the Bonaparte's Sandpipers. Otherwise it seems to be a solitary bird, living on the mud which borders the arroyos and lagoons. (See Ibis, 1891, p. 19.)

104. *OREOPHILUS RUFICOLLIS* (Wagl.).

Fairly common from April to July, living in scattered flocks on high ground, very often associating with *Eudromias modesta*, though it never feeds on the mud. Its native name is "Chorlo."

105. *THINOCORUS RUMICIVORUS*, Eschsch.: Holland, Ibis, 1891, p. 19.

Fairly common from March to June, in small scattered flocks. When they first arrive they are to be found on the rough roads, but later on, in June, they frequent the edges of lagoons.

106. *HIMANTOPUS BRASILIENSIS*, Brehm.

Fairly common all the year round, living in small flocks during the winter. Breeds about the middle of October. The nest is composed of small sticks and grass, without any lining; it is placed on a slight rising or mound very close to water. The eggs are four in number. The native name is "Teru-teru real."

107. *GALLINAGO PARAGUAË* (Vieill.).

Fairly common throughout the year, though more plentiful during the winter months in scattered flocks which inhabit swampy ground. The native name is "Beccasino."

108. *RHYNCHÆA SEMICOLLARIS* (Vieill.).

Fairly common throughout the year, living singly or in small flocks of from six to eight individuals, amongst reedy swamps. It breeds early in November. (See Ibis, 1891, p. 20.)

109. *TRINGA MACULATA*, Vieill.

Fairly common from March to August in flocks numbering some 40 or 50 individuals, though many remain all the year, unless these latter are later arrivals or immature birds. In December, when water is scarce, these birds congregate in numbers on the muddy sides of the few lagoons containing water in company with *Gallinago paraguaiæ*, *Tringa fuscicollis*, and *Totanus melanoleucus*. (See notes, Ibis, 1891, p. 20.)

110. *TRINGA FUSCICOLLIS*, Vieill.

Fairly common from March to August in scattered flocks, frequenting the shallow water at the edges of the lagoons. They seem to disappear, occasionally reappearing at intervals. Many remain through the summer, as does also *Tringa maculata*. (See also Ibis, 1891, p. 20.)

111. *TOTANUS MELANOLEUCUS* (Gm.).

Common throughout the year, living in pairs. Early in one November I took two nests which I believe belonged to this bird. They were composed of green wet grass and were very shallow structures, placed in shallow water. They contained four eggs each, of a reddish-brown colour, spotted with dull purple at the larger end and slightly so all over. The only birds near and apparently distressed at my intrusion, when I found these nests, were in each case a pair of Greater Yellowshanks. Could these be their nests? I took them to be so, but in 'Argentine Ornithology' (ii. p. 187) it is distinctly stated by Mr. Hudson that this species does not breed on the Pampas.

112. *TOTANUS FLAVIPES* (Gm.).

Fairly common throughout the year, either singly or in pairs. More numerous from October to February.

113. *RHYACOPHILUS SOLITARIUS* (Wils.).

Rare, arriving in March and departing in June. Frequents the muddy edges of small pools in twos and threes, ever on the move. (See my notes, *Ibis*, 1891, p. 20.)

114. *ACTITURUS BARTRAMIUS* (Wils.).

Fairly common in scattered flocks from December to May. Often seen perched on gates and wire fencing. I once observed a pair in October. Native name "Batitu."

115. *LIMOSA HÆMASTICA* (Linn.).

Rare; appears in flocks late in the winter after heavy rains, from July to August. They were met with both in summer and winter plumage. Its native name is "Beccasa."

116. *STERNA ANGLICA*, Mont.

This Tern is rare, but occasionally appears in pairs throughout the year, when it frequents the arroyo, skimming its surface in search of food, or making sudden darts down and resting for a few seconds motionless, with wings fluttering while waiting for its prey of minute fishes. (Cf. *Ibis*, 1890, p. 428.)

117. *STERNA TRUDEAUII*, Aud.

Fairly common in the spring and summer from September

to February, but rarer in the winter. Frequents arroyos, open lagoons, and open land, doubtless in the latter cases picking up grubs. Breeds early in November in the deep lagoons thickly overgrown with succulent water-grasses, in company with *Larus maculipennis*. The nest, composed of wet water-grasses with no lining, is placed on the water, supported by the vegetation underneath—a very slovenly structure. Eggs three or four in number ($1\frac{3}{4} \times 1\frac{1}{4}$), of an olive colour, spotted and blotched with pale brown and grey; also pale olive-grey, spotted with black and pale purplish grey. (See my notes, *Ibis*, 1890, p. 428; also Saunders, *P. Z. S.* 1891, p. 373.) The native name of this Tern is "Gaviotine."

118. *LARUS DOMINICANUS*, Licht.

Very common from January to August. Its native name is "Gaviota Grande."

119. *LARUS MACULIPENNIS*, Licht.

Very common all the year through, breeding early in November, in gulleries of several hundreds. Its native name is "Gaviota."

120. *LARUS CIRRHOCEPHALUS*, Vieill.

Very common from July to February in large flocks. It breeds with us, I think, though so far I have been unable to discover its nesting-place. When these Gulls arrive they are all in adult plumage, but towards the end of November and early in December numberless immature individuals appear along with them. Every day from July to February they come to the Estancia to feed on the offal from the slaughtered animals. They frequent a large reedy lagoon some eight miles away, but I have never had the time to search it during the breeding-season. (*Cf.* *Ibis*, 1890, p. 428.)

121. *ÆCHMOPHORUS MAJOR* (Bodd.).

Fairly common in pairs or singly throughout the wet years. Breeds late in October. Eggs three in number.

122. *PODICEPS ROLLANDI*, Quoy et Gaim.

Fairly common throughout the year, inhabiting arroyos and open lagoons.

123. *TACHYBAPTES DOMINICUS* (Linn.).

Common throughout the year, singly or in pairs, living in almost every lagoon and arroyo. Breeds about the middle of October amongst the thick rushes. The nest is composed of reeds and grass woven together without lining. It is a very wet structure, with a slight hollow in the centre for the eggs, which are from three to five in number and get much soiled. Their natural colour is pale blue until they become encrusted with a chalky substance and dirt, when they are of a brownish colour. The eggs are invariably covered over with wet reeds when the birds leave the nest. The native name of this bird is "Macra."

124. *PODILYMBUS PODICEPS* (Linn.).

Rather a rare species of Grebe with us, inhabiting the arroyos and open lagoons, singly or in pairs. It has not the same habit of diving for safety when frightened as its family possesses, but flies for some distance after its first dive.

125. *RYNCHOTUS RUFESCENS* (Temm.).

This Tinamou has nearly disappeared from this estate, though we preserve it as much as possible. Its native name is "Perdiz grande."

126. *NOTHURA MACULOSA* (Temm.).

Very common throughout the year. Breeds early in November. Eggs six in number. Its native name is "Perdiz."

127. *RHEA AMERICANA*, Lath.

Very abundant here, as they are preserved on account of their usefulness in eating a very destructive burr called *Cepia cavallo*, which injures the wool. We possess upwards of 1500, which are plucked once a year, being driven into a huge net made for the purpose. They yield each about 1 lb. of feathers on an average. I have occasionally seen pure white varieties of this species. Its native name is "Avestruz."

XV.—*Notes on the Ornithology of the Gambia.*

By PERCY RENDALL, M.D., F.Z.S.

DURING a residence of twenty-one months I obtained specimens of the birds enumerated in the following list, within an eight-mile radius of Bathurst, on the Gambia. The town is situated on the island of St. Mary—a narrow tongue-shaped delta, which lies parallel to, and is bounded on the north by, the river, and on the south by tidal mangrove-swamps. It is about five miles long, but in no place is it more than one mile in breadth. A shell-road, which crosses numerous mangrove-swamps and creeks, connects it with the mainland of British Combo. The river Gambia, opposite Bathurst, is two miles across, though much broader both above and below the town. The district on the north bank of the mainland is locally known as Barra.

The birds were for the most part migrants, and were more plentiful during the rainy season, which lasts from June to October.

Mimosa trees, scattered palms (both cocoanut and cabbage varieties), dense and thorny undergrowth, with numberless grasses and creepers in the wet season, formed the main cover or “bush.”

For the nomenclature and classification of my collection I am exclusively indebted to Canon Tristram. Most of these birds are in his cabinet; and it was due in great part to his suggestions and encouragement that I persevered, notwithstanding the many drawbacks incident to the pursuit of ornithology in West Africa.

Turdus pelios.

One only obtained.

Crateropus platycercus.

This species is a very close sitter. It builds a slight strong cup-shaped nest of small thorny mimosa-twigs, about ten feet above the ground, and lays three eggs, which are similar to those of our Starling, though not quite so pale, and somewhat smaller.

SAXICOLA CENANTHE.

One on 2nd October and the second on 2nd November, 1889, both males.

PRATICOLA RUBETRA.

A male and a female on 20th and 23rd December, 1889.

PENTHOLEA ALBIFRONS.

One only; it was shot at Barcote, on the very outskirts of British Combo.

RUTICILLA PHENICURUS.

One pair, near Bathurst, 6th December, 1889.

SYLVIA HORTENSIS.

Two, on the island, on 9th September, 1889.

ACROCEPHALUS STREPERUS.

One female, shot at Barra, was the only one that I saw; it was on 29th November, 1889.

CISTICOLA CINERASCENS.

This little bird has a habit of skulking about in the coarse grass of damp ground; it builds a small fragile nest in the centre of a tuft of grass. It is not uncommon.

CISTICOLA CURSITANS.

A single specimen.

SYLVIELLA MICRURA.

The short tail and jerky action of this little bird reminded me not a little of our Common Wren.

PARUS LEUCOPTERUS.

When this bird flies, the contrast of black and white is very striking.

MOTACILLA ALBA.

During the autumn months there were a few pairs generally on the island.

MOTACILLA FLAVA.

Common all through the winter season.

MOTACILLA CAMPESTRIS.

Occasional birds noticed.

MOTACILLA MELANOPE.

A rare visitant to the Gambia.

PYCNONOTUS ASHANTEUS.

Not a day passed without my both seeing and hearing this bird. He is a songster of very tolerable power; his call-note has gained him the sobriquet of the "Fifty-three" bird. It is difficult to ignore him, as from dawn to sunset he is always reminding you of that particular number! He is almost as bold and mischievous as a London Sparrow. Though so common, his nest is extremely hard to find. One had strips of Morse-telegraph paper woven into its structure; its usual materials are the pendent rootlets of the *Ficus*, among which is placed its slight cup-shaped abode. It lays from three to five eggs, varying in the same clutch from reddish to chocolate blotches on a white ground-colour.

CRINIGER BARBATUS.

Not common.

ORIOLOUS AURATUS.

Common on the mainland all the year round; occasional stragglers seen on the island.

*MELANORNIS EDOLIOIDES.**LANIUS AURICULATUS.**LANIUS RUTILANS.*

Two shot at Barra, 20th December, 1889.

NILAUS AFER.

The only one seen.

CORVINELLA CORVINA.

Two were shot at Barra.

TELEPHONUS SENEGALUS.

This species is the commonest Shrike seen on the Gambia. It is a powerful songster, though it can seldom be seen whilst singing, as it resorts to the thickest coverts. Its song, which though short is very tuneful, is uttered in the air like that of the Tree-Pipit.

LANIARIUS SULPHUREOPECTUS.

Only one obtained.

LANIUS BARBARUS.

Not common.

DRYOSCOPUS GAMBENSIS.

One shot on 9th October, 1889.
 it was sn

PRIONOPS MELANOTUS.

Two at Barra, 22nd December, 1889.

BUCHANGA MUSICA.

One in British Combo.

MUSCICAPA ATRICAPILLA.

A female, at Bathurst, 20th September, 1889.

PLATYSTEIRA CYANEA.

When I first saw and obtained this bird at Barcote, in Combo, its vocal powers astonished me. Its song consists of from six to eight clear flute-like notes, in perfect sequence and in a descending scale. Not until I had watched the bird for some minutes in breathless attention could I persuade myself that this perfect whistle could proceed from the small bird which was feeding, like a Blue Tit, in the tree above my head.

*TCHITREA RUFIVENTRIS.**HIRUNDO RUSTICA.*

One in the autumn of 1888.

HIRUNDO LUCIDA.

Common and fearless of man; its low sweet song is sustained for a minute or more, and bears a resemblance to that of a Canary, but is always subdued in tone. It builds a cup-shaped nest of mud, lined with fine grass and feathers, and lays from three to five eggs.

HIRUNDO SENEGALENSIS.

Obtained only in Combo.

HIRUNDO FILIFERA.

Scarce ; one nest with three eggs on 7th November, 1889.
Nest exactly like the one above described.

NECTARINIA PULCHELLA.

Common in the gardens. One nest, with two eggs, which were like Black-headed Buntings' in miniature, was in a lime-tree.

NECTARINIA PLATURA.

Seen only in British Combo.

CINNYRIS SENEGALENSIS.

Scarcely a flowering shrub in my garden yielded any flowers the corollas of which had not been pierced by individuals of this species or of

CINNYRIS CUPREUS.

ZOSTEROPS SENEGALENSIS.

Rare.

PYRGITA DENTATA.

PASSER GULARIS.

Very uncommon.

PASSER SWAINSONI.

Some of these I kept alive for several months. They are very hardy, active, and wild.

CRITHAGRA CHRYSOPYGA.

The natives keep many of these little Siskin-like birds in cages, and speak of them as "Canaries." Their song is monotonous and short. I have had some caged for a considerable period, together with examples of

CRITHAGRA LEUCOPYGA.

TEXTOR ALBIROSTRIS.

HYPHANTORNIS BRACHYPTERA.

HYPHANTORNIS CUCULLATA.

Common. It builds in large colonies on the lower leaves

of the cocoanut-palm, &c. I have seen as many as twenty nests on a single leaf.

HYPHANTORNIS MELANOCEPHALA.

This bird, which more frequently is to be seen than any other member of this family, prefers the lower branches of the mimosa, common in the marshy ground between the mangrove-swamps; and though it also builds in colonies, I have seldom seen more than two nests on a single tree; they were usually about six or seven feet above the ground-level. Their eggs, which present every variation in colour between olive-green and russet-brown, are seldom in clutches of more than two, though once or twice I have taken three from a nest.

HYPHANTORNIS LUTEOLA.

Rare on the Gambia.

HYPHANTORNIS PERSONATA.

QUELEA ÆTHIOPICA.

Lives well in confinement. I kept several of them from time to time in a large flight-cage.

PYROMELÆNA FLAMMICEPS.

PYROMELÆNA AFRA.

PYROMELÆNA FRANCISCANA.

Builds a woven-grass nest and lays two or three eggs, of a deeper blue than those of our Hedge-Sparrow. The nest has the hole in the side, and is built in a tall weed of the pea family, almost invariably. The males lose their red feathers so gradually that all stages intermediate with the females are to be seen in August.

VIDUA PRINCIPALIS.

Notwithstanding the length of the tail-covert feathers, I successfully kept these birds caged for some time. I noticed that the males, after some time, moulted their black feathers so as to appear like the females.

VIDUA PARADISEA.

COLIOSTRUTHUS MACRURUS.

Uncommon.

AMADINA FASCIATA.

This little "Cut-throat" I found had a pretty unassuming little song, if kept in a separate cage.

LAGONOSTICTA SENEGALA.

ESTRELDIA CÆRULESCENS.

Have had many of these in captivity.

ESTRELDIA CINEREA.

ESTRELDIA SENEGALA.

Common; specially noted in flocks.

ESTRELDIA MARIPOSA.

I took one nest of this bird in long grass; the nest was a slight structure, and contained seven white eggs.

SPERMESTES CUCULLATUS.

A nest of this bird I took on 21st April, 1889; it contained four eggs of a pure white colour.

MUNIA TOPELA.

A pendent nest, with three white eggs of this species, was taken from a small tree, 8 feet from the ground; the opening was in the side.

MUNIA CANTANS.

Only two obtained.

HYPOCHERA CHALYBEATA.

A couple on 13th September, 1889.

GALERIDA CRISTATA.

A single specimen shot.

LAMPROTORNIS ÆNEA.

One on 30th September, 1889.

LAMPROCOLIUS AURATA.

The native hunters shoot and skin these birds in large numbers, and sell them to the French firms trading on the

Gambia, who, as I learnt, supply the Parisian hat manufacturers.

LAMPROCOLIUS CHLOROPTERUS.

On 11th January, 1890, at Barra.

LAMPROCOLIUS CHALCURUS.

LAMPROCOLIUS SPLENDIDUS.

Rare.

NOTAUGES CHRYSOGASTER.

BUPHAGA AFRICANA.

Common and noisy, but difficult to shoot, as they will not leave the backs of the cattle. Besides the parasites thereon, they seem also very partial to the lachrymal secretions of these animals.

CORVUS SCAPULATUS.

One pair only bred in a large cotton-tree in the Government House grounds. All others I noticed on the mainland were very shy, though this Crow is fairly common and widely distributed.

CRYPTORHINA AFRA.

Abundant. Follows the cattle.

CYPSELUS AFFINIS.

Very common; its nest, which is of a dry glutinous character, is mingled with grass rubbish picked up whilst on the wing and placed under every verandah and roof, suitable or unsuitable, in the colony. The nests, which often have an opening at each end and no lining material, seldom contain more than a single egg. This bird is unable to rise from the ground.

CYPSELUS PARVUS.

Of this bird I have never seen more than two at one time. It is scarce, and flies with incredible rapidity at a considerable altitude.

CAPRIMULGUS POLIOCEPHALUS.

Frequently seen at dusk in clearings. Like other Goat-

suckers, it has a habit of squatting on the road, from which it does not get up until one's horse has got within a few yards of it, and then only to re-settle on the road further ahead.

SCOTORNIS LONGICAUDA.

Less frequent.

MACRODIPTERYX LONGIPENNIS.

This remarkable bird I only know of certainly from Combo. The Goatsuckers that I shot on the delta all belonged to the two preceding species, though I often shot them hoping I should find the two long feathers of *Macrodipteryx*. It was so dark when they appeared that it was quite impossible to discriminate accurately before firing.

DENDROPICUS PUNCTATUS.

Found where there were suitable trees.

MESOPICUS GOERTAN.

Occasionally seen.

IRRISOR SENEGALENSIS.

On the mainland at Barra.

IRRISOR ERYTHORHYNCHUS.

UPUPA EPOPS.

Solitary specimens were at times noticed.

MEROPS PERSICUS.

These birds were often seen above the mangrove-swamps at high water, hawking for insects in graceful circles, and settling occasionally on the higher bushes.

MEROPS PUSILLUS.

CORACIAS ABYSSINICA.

Only two obtained.

CORACIAS PILOSA.

CORACIAS GARRULA.

The favourite food of this bird appears to be lizards, and

I have oftentimes watched it dash down from the topmost branches of a tree upon one that had rashly ventured into the open.

CORACIAS CYANOGASTER.

CORACIAS NÆVIA.

EURYSTOMUS AFER.

One shot on 12th July, 1889.

CERYLE RUDIS.

Common on all sides of the island, and hovering, preparatory to a dash into the water; it is always a conspicuous feature on the banks of the Gambia.

HALCYON SENEGALENSIS.

HALCYON SEMICERULEA.

HALCYON CHELICUTI.

CORYTHORNIS CYANOSTIGMA.

The main food of this beautiful little bird was, apparently, large dragon-flies.

TOCCUS NASUTUS.

The appearance of this bird in considerable numbers seemed always to herald the wet season, and it was locally known as the "Rain-bird" in West Africa. Its loud, discordant, and monotonous cry is supposed to be a sure indication of rain.

CORYTHAIX BUFFONI.

CORYTHAIX PURPUREUS.

MUSOPHAGA VIOLACEA.

Of a pair shot near Barra, one of them yielded, on dissection, a pure white egg, which is now in my collection.

SCHIZORHIS AFRICANA.

On the mainland in Combo.

CUCULUS CLAMOSUS.

One on 6th September, 1889.

CHALCITES SMARAGDINEUS.

The most beautiful bird I saw on the West Coast; its skins, I regret to say, find a ready sale on the Gambia, owing to the hateful traffic created by the French plumassiers.

*CHRYSOCOCYX CUPREUS.**COCCYSTES GLANDARIUS.*

One on 21st December, 1889.

*COCCYSTES CAFER.**CENTROPUS SENEGALENSIS.*

This bird, which the natives call the Doodoo or "Snake-bird," is very common. Its cry, which is five or six times repeated in a descending scale, whilst it bows like a Hoopoe, has gained it the first name. Whether it feeds on snakes I know not; lizards, however, I can answer for.

POGONORHYNCHUS DUBIUS.

This quaint-looking bird I saw on the mainland on several occasions.

POGONORHYNCHUS VIEILLIOTI.

One specimen shot near Bathurst.

*BARBATULA CHRYSOCOMA.**PŒOCEPHALUS SENEGALUS.*

On the mainland this bird is not unfrequently met with in flocks.

PALÆORNIS DOCILIS.

This bird is constantly kept in captivity by the negroes, and certainly deserves its specific name, but I never knew one that could imitate human vocal sounds or even whistle a tune.

SCOPS LEUCOTIS.

This bird I secured alive, and reluctantly converted into a skin, as my black boy refused either to feed it or to live with it, saying, "Hah, massa, da debil bird, I fear him too much, he go witch me for sure!" He did make strange noises at night I must admit.

Another great sorrow was the death of a tiny *Scops*, which, after two days' captivity, was appropriated by a felonious cat: a few feathers only were left behind, so its name will always be unknown to me.

STRIX FLAMMEA.

Only two noticed.

CIRCUS MACRURUS.

CIRCUS PALLIDUS.

HALIAËTUS ALBICILLA.

Single specimens frequently seen.

ASTUR SPHENURUS.

One of these birds dashed into the open window of one of the houses, with a specimen of *Cypselus affinis* in each claw. We caught him, and as he refused to relax his hold upon his victims, he was subjected to the influence of chloroform. The two Swifts were then liberated and he was put outside; he shortly afterwards flew away, sadder, doubtless, and wiser for the strange experience.

MELIERAX POLYZONUS.

ASTURINULA MONOGRAMMICA.

TINNUNCULUS ALAUDARIUS.

One shot 15th January, 1889.

MILVUS ICTINUS.

MILVUS MIGRANS.

GYPOHIERAX ANGOLENSIS.

PHALACROCORAX AFRICANUS.

I have seen the eggs and young of this Cormorant brought down the river by the natives; adults were sometimes observed on the mangrove swamps surrounding the Island of St. Mary.

PLOTUS LEVAILLANTI.

One shot whilst fishing in a swamp.

ARDEA GULARIS.

Common. Seen in company of cattle.

BUTORIDES ATRICAPILLUS.

Very abundant. Its nest is composed of thorny twigs, on which slight platform it deposits usually three eggs. This species builds in colonies, and I have often counted five or six nests in a single mimosa tree.

SCOPUS UMBRETTA.

Common in suitable situations.

LEPTOPTILUS CRUMENIFERUS.

A pair of this Stork which I brought from Bathurst in 1890 are still in excellent health in the Zoological Society's Gardens. On the Gambia the natives often protect these birds, as they prove useful as scavengers, and they build in and around their villages. A tame one in Bathurst was an adept at rat-catching in the merchant's yard where he was confined.

PLECTROPTERUS GAMBENSIS.

DENDROCYGNA VIDUATA.

Shot some little distance up the river.

TRERON CALVA.

This bird was as valuable in West Africa as the Quail was formerly in the wilderness. During the rainy season there seems to be a constant flow of migrants from the S.W. Incredible numbers are shot, and every negro who has a gun lies in wait for them from sunrise to sunset. They are easy of approach and fall readily when hit. Personally I can vouch for their excellence on the table.

TURTUR AURITUS.

Not at all uncommon.

TURTUR SEMITORQUATUS.

Some of these Doves follow the same line of flight towards the N.E. as the *Treron calva*, but as a rule fly higher, and require much straighter shooting to bring them down.

CHALCOPELIA AFRA.

Common at all times.

CENA CAPENSIS.

A pair of these birds I gave to Mr. Meade Waldo when I left the Gambia in March, 1890; he found that they bore captivity well in Tenerife.

PTEROCLES TRICINCTUS.

Only on the mainland; they are found in wooded spots invariably, never in the open.

FRANCOLINUS BICALCARATUS.

I got one clutch of eggs of this bird. It frequents sparsely wooded and partially cultivated portions of the mainland. I never flushed it in the open "ground-nut" fields. A pair that I gave to Mr. Meade Waldo lived for months in his aviary. These birds are excellent eating.

PTILOFACHYS VENTRALIS.

PELIPERDIX LATHAMI.

Rare.

COTURNIX COMMUNIS.

Common in February and March on the mainland at Barra.

NUMIDA RENDALLI.

Although I both heard and saw this Guinea-fowl, during an expedition I made to Barcote in Foreign Combo, it was so wary, and the bush so thick, that I was unable to obtain a specimen. Friends of mine shot it frequently on the upper river; but, not being ornithologists, they plucked and did not skin their specimens.

FULICA ATRA.

Uncommon.

PARRA AFRICANA.

Seen only in Combo, on some fresh water.

EUPODOTIS MELANOGASTER.

For sportsmen on the Gambia this is the great prize. It

frequents the open ground-nut fields, near Barra especially ; it never runs, but rises like a Pheasant. It is most delicate eating.

SQUATAROLA HELVETICA.

A male shot on 26th October, 1889.

ÆGIALITIS CURONICA.

A female on 7th April, 1889.

HOPLOPTERUS SPINOSUS.

Common about the cultivated patches of ground on the mainland. Wary and hard to approach.

CHETTUSIA SENEGALLA.

Occasionally met with.

STREPSILAS INTERPRES.

Two shot, 22nd November, 1889.

HIMANTOPUS CANDIDUS.

A few were seen in company with other Waders following the ebbing tide on the river-banks.

TRINGA SUBARQUATA.

I shot three out of an immense flock feeding in a mangrove swamp at low water, 22nd October, 1889.

CALIDRIS ARENARIA.

Two obtained on 6th October, 1889.

TRINGOIDES HYPOLEUCUS.

This bird is found on every swamp.

TOTANUS CALIDRIS.

One only on 17th September, 1889.

TOTANUS GLAREOLA.

One on 2nd November, 1889.

TOTANUS CANESCENS.

A single specimen on 27th September, 1889.

NUMENIUS PHEOPUS.

Common, but very wary and hard to shoot. It was to be seen on every mangrove swamp. Excellent eating.

LARUS PHŒOCEPHALUS.

Specimens are always to be seen.

LARUS RIDIBUNDUS.

STERNA CASPIA.

Common all the year round.

HYDROCHELIDON NIGRA.

STRUTHIO CAMELUS.

A fine Ostrich lived in Bathurst for years, and I often saw it, but at last it grew sufficiently troublesome to be shipped off to the Jardin d'Acclimatation at Marseilles. It was brought when young from the upper river by native traders.

XVI.—*A List of Birds collected in Corea.*

By C. W. CAMPBELL, of H.B.M. Consular Service.

(Plate V.)

I. *Introductory Remarks.*

THE collection which forms the subject of this paper was made in 1888 and 1889 during my residence at Söul, the capital of Corea, and at Chemulpo, the western Treaty Port.

That the list of my collection does not contain a greater number of species is simply due to the fact that I could not induce the native hunters to assist me, although I frequently offered what appeared to me very tempting rewards for specimens. I had therefore to rely solely on my own efforts in leisure time. With the exception of, perhaps, half a dozen, all the specimens were shot by myself. The majority come from the neighbourhood of the two places where I lived—Söul and Chemulpo. During an extended journey which I made in the autumn of 1889 to the northern frontier of Corea, I noticed several species of which I have no examples, especially in the forests bordering the Yalu River, but the hurried nature of my progress through that region prevented any serious attempt at collecting.

I collected in all examples of 112 species. Of these, two—*Suthora fulvicauda* and *Suthora longicauda*—are new, and the following 14 are now for the first time recorded from Corea :—

<i>Pratincola maura.</i>	<i>Emberiza elegans.</i>
<i>Cettia minuta.</i>	— <i>passerina.</i>
<i>Acredula caudata.</i>	— <i>tristrami.</i>
<i>Lanius magnirostris.</i>	<i>Fuligula cristata.</i>
<i>Ampelis japonicus.</i>	<i>Larus canus.</i>
<i>Anthus japonicus.</i>	<i>Charadrius cantianus.</i>
— <i>rosaceus.</i>	<i>Podiceps nigricollis.</i>

Few of the birds common around Söul are unrepresented; I can remember only the following :—*Parus varius*, *Pica caudata*, *Aquila chrysaëtus*, *Haliaëtus albicilla*, *Falco subbuteo*, *Falco tinnunculus*, *Falco peregrinus*, and *Accipiter nisus*.

Thriponax kalinowskii is the only bird in the collection which is unknown beyond Korean limits.

I am deeply indebted to Mr. Henry Seeböhm for assistance and advice in the preparation of this paper.

II. List of previous Authorities.

The following papers have been consulted :—

“On a small Collection of Birds from Corea.” H. B. Tristram. *Ibis*, 1885, p. 194.

“Brief Notes on the Fauna of Corea &c.” H. H. Giglioli and T. Salvadori. *P. Z. S.* 1887, p. 580.

“Liste des Oiseaux recueillis en Corée par M. Jean Kalinowski.” L. Taczanowski. *P. Z. S.* 1887, p. 596.

“Liste supplémentaire des Oiseaux recueillis en Corée.” L. Taczanowski. *P. Z. S.* 1888, p. 450.

III. Localities mentioned and their Positions*.

Söul, the capital of Corea. Lat. 37° 34' N. and long. 127° 10' E.

Chemulpo, the port of Söul, lies on the coast at a distance of 25 miles S.W.

Orikol, a village halfway between Söul and Chemulpo.

Täi-p'yöng, a village 25 miles east of Söul.

* [See also Mr. Campbell's paper in *Proc. R. Geogr. S.* for March, 1892.—Ed.]

Ham-heung, a walled town, lat. $39^{\circ} 50'$ N. and long. $127^{\circ} 45'$ E.

Keum Kang San, or Diamond Mountains, in lat. $38^{\circ} 30'$ N. and long. 128° E.

Chyei-in Koan, a village three days' journey N.E. of Ham-heung.

Hyei-san, a village on the Yalu River, in lat. $41^{\circ} 30'$ N. and long. $127^{\circ} 40'$ E.

Päik-tu San, a celebrated extinct volcano in lat. 42° N. and long. $127^{\circ} 40'$ E.

IV. *List of Species.*

1. *MERULA NAUMANNI.*

One male and two female examples procured at Söul in January and March.

A winter visitor; very numerous. In the vicinity of the Yalu River, in latitude $41^{\circ} 30'$ N., I noticed that the passage of this Ouzel southwards commenced during the first week of October.

2. *MERULA OBSCURA.*

One example, a female, from Söul; May. I have seen the Dusky Ouzel on only one other occasion, in the forest region south of Päik-tu San (October 4th). These dates probably represent the two periods during which it passes through Corea from its breeding-grounds further north to its winter-quarters further south.

3. *ERITHACUS SIBILANS.*

A female example shot near Chemulpo on the 10th September, 1888, the only occasion on which I observed the species.

4. *CINCLUS PALLASI.*

An example shot on a stream near T'ai-p'yöng on 9th February. In September I have observed this Dipper in the Keum Kang mountains, at Chyei-in Koan, and on the Yalu River near Hyei-san.

5. *ACCENTOR MONTANELLUS.*

A male example bought at Söul in January.

I have only seen this species in winter; it was fairly common.

6. PRATINCOLA MAURA.

A Chat shot by me at Chemulpo in August 1888 was identified with this species by Mr. de La Touche, of the Chinese Imperial Maritime Customs. From my own observation, and from the fact that M. Kalinowski failed to collect it during his three years' residence in Corea, I am led to conclude that the Siberian Stonechat is by no means a common visitor.

7. RUTICILLA AUROREA.

A male and two female examples from Chemulpo; September.

A constant resident at Söul and Chemulpo; very common. It is a fearless bird at all times, but in winter it becomes almost tame. The note is clear, resonant, and piping.

8. TARSIGER CYANURUS.

Four females—two from Söul, obtained in April, and two from Chemulpo, in September and October.

Fairly common. I do not think it is resident at Söul during the severe winter months.

9. SIPHIA LUTEOLA.

In none of my examples is there any white on the tail. I have carefully compared them with examples in the British Museum and in the Swinhoe Collection, and Mr. Seebohm has pointed out that both Dr. Sharpe (Cat. Birds Brit. Mus. iv. p. 202) and he himself (Seebohm, Birds Jap. Emp. p. 60) were in error in describing both sexes of the Mugimaki Flycatcher as having white at the base of most of the tail-feathers. When the volume of the 'Catalogue of the Birds in the British Museum' which contains the Flycatchers was published, the Hume Collection had not been received, but now that it has been made accessible to ornithological students, many errors into which they had fallen from lack of specimens to examine have been corrected.

Siphia luteola may be regarded as the Chinese representative of the Himalayan *Siphia hodgsoni*, the female of which was unknown before the arrival of the Hume Collection. It has now been described as having no white at the base of the tail (Oates, 'Fauna of British India,' Birds, ii. p. 14), and this is doubtless also the case with its Chinese ally. The plumage described by Dr. Sharpe as that of the adult female is, no doubt, that of the immature male. The female appears never to have any white at the base of the tail, and adult females seem to differ from immature females in having white instead of buff tips to the greater wing-coverts.

10. *XANTHOPYGIA TRICOLOR*.

Four specimens shot in May at Söul, where it is common in summer.

11. *MUSCICAPA LATIROSTRIS*.

A female example shot at Chemulpo on the 16th October, 1888.

12. *MUSCICAPA SIBIRICA*.

A male from Söul, shot in May.

The Siberian and the Brown Flycatchers are not uncommon birds in Corea.

13. *PHYLLOSCOPUS CORONATUS*.

A male specimen from Chemulpo (April 21st).

14. *PHYLLOSCOPUS SUPERCILIOSUS*.

Two female examples obtained at Chemulpo in October, when it was common.

15. *CETTIA MINUTA*.

A female shot near Chemulpo on the 10th September, 1888.

I have seen this Bush-Warbler on the road to Yöng-heung, also in the middle of September.

My specimen is very slightly suffused with rust-colour on the forehead, and resembles examples from Chefoo and Formosa which have been recorded as *Cettia cantans minuta* (Seebohm, Cat. Birds Brit. Mus. v. p. 140).

Cettia minuta only differs in size from *Cettia canturiens*, exactly as *Cettia cantillans* differs from *Cettia cantans*. It has been suggested that the smaller examples are the females of the larger ones, but until a pair have been shot at the nest of each of these species this view must be regarded as somewhat doubtful. In both *Cettia minuta* and *Cettia canturiens* examples from South China, where the species are said to be resident, are much more rufous, especially on the forehead and upper tail-coverts, than examples from North China, where they appear to be migratory. The types of both species are in the Swinhoe Collection, and unquestionably belong to the rufous race of each species, which are resident within the Oriental Region. I propose to distinguish the less rufous race of *Cettia minuta*, which is a migratory bird breeding in the Palæarctic Region in Corea, Chefoo, &c., as *Cettia minuta borealis*; and the less rufous race of *Cettia canturiens*, which is also a migratory bird breeding in Russian Manchuria, and possibly in Central China, as *Cettia canturiens septentrionalis*.

16. *REGULUS CRISTATUS*.

Three females procured at Chemulpo in September and October, and one female at Söul in April.

Corean birds agree with other Asiatic examples in the slaty colour of the nape and upper back.

17. *PARUS PALUSTRIS*.

Two females from Söul, January. The Marsh-Tit of Corea has a very small bill (culmen .35 inch), like *Parus brevirostris*, a moderately long tail (2.25 inches), like *Parus borealis*; the black on the crown is intense and extends far down the nape. The grey of the upper parts is darker than in *Parus borealis* and *Parus japonicus*, and the pale underparts are much greyer. Taczanowski (P. Z. S. 1887, p. 604) identifies the Corean Marsh-Tit with the Ussuri-Valley race of that species, and records it under the name of *Parus palustris crassirostris*. My examples are much darker, both above and below, than examples from the Ussuri.

18. *PARUS ATER*.

Three examples, two males and one female, shot in September and October at Chemulpo.

In one or two of these there is an approach to the crest of *Parus pekinensis*.

19. *PARUS ATRICEPS MINOR*.

Two specimens procured in April and June at Söul, and one at Chemulpo (September), differ from *Parus atriceps*, the typical form, in having a yellowish-green mantle.

20. *ACREDULA CAUDATA*.

Two females and one male from Chemulpo (October) and a pair from Söul (December).

On the two or three occasions that I observed Long-tailed Tits in Corea, they travelled in bands of a dozen or so, flitting continuously from tree to tree and keeping up an incessant and distinctive harsh chirping note.

21. *TROGLODYTES FUMIGATUS*.

♂. Söul; 20th January.

This specimen bears the closest resemblance to one in General Prjevalsky's collection from "Chuan-che." It is paler than the Sikkim race, and not so rufous as the Japanese.

The Japanese Wren is resident in Corea and quite common. In winter, especially, its dark plumage makes the little bird very noticeable as it skims over the snow-covered ground. Its note is sharp, short, and piercing.

22. *CERTHIA FAMILIARIS*.

A pair collected at Söul in December and January.

I observed the Common Creeper only in winter, when it was fairly plentiful.

23. *SITTA CÆSIA AMURENSIS*.

Two female examples from Söul; March.

I have seen this Nuthatch only in winter. Both my specimens show, perhaps, more chestnut on the breast and belly than birds from the Ussuri.

24. *SUTHORA FULVICAUDA*, sp. nov.

♂ and ♀. Chemulpo; August.

A pair of these birds, which I shot on the coast, appear to belong to an undescribed species. They resemble *Suthora webbiana* and *Suthora suffusa* in being very small, in having chestnut outer webs to the quills, and in having the throat and breast pale vinous, without any dark centres to the feathers. They differ from both in having the head rather less rufous, and the rest of the upper parts, especially the tail, much more rufous. It is possible that this species may be identical with that recorded as *Suthora webbiana* from Japan (Salvadori and Giglioli, Mem. Ac. Tor. xxxix. p. 124).

25. *SUTHORA LONGICAUDA*, sp. nov.

A couple of these birds, which proved on dissection to be females, were shot about thirty miles due east of Söul in February. They do not agree with any of the species hitherto described. Their relationship is obviously with *Suthora bulomachus*. They resemble that species in being very small, in having chestnut outer webs to the quills, in having the throat and breast pale vinous with a darker central streak on each feather, and in having the lower back, rump, upper tail-coverts, and tail dusky brown. They differ from it in having the head, neck, and mantle much paler, and in having longer tails (2·6 to 2·7 instead of 2·2 to 2·3 inches). It is possible that this species may prove to be identical with that found in the valley of the Ussuri, recorded as *Suthora bulomachus* (Taczanowski, J. f. Orn. 1876, p. 196), and with that from Söul, recorded as *Suthora webbiana* (Taczanowski, P. Z. S. 1887, p. 604).

This species travels in bands of twenty or thirty in hedges and low bushes. Its presence is always brought to notice by a chorus of shrill piping notes. Like *Suthora fulvicauda*, it is a shy bird and is very adroit in concealing itself.

26. *LIMONIDROMUS INDICUS*.

♂ and ♀. Söul; May.

A summer visitor.

27. *ORIOLOUS DIFFUSUS*.

Three examples (two males and one female) from Chemulpo, obtained in June and July.

A summer visitor.

28. *CORVUS MACRORHYNCHUS JAPONENSIS*.

The Common Crow of Corea.

29. *CORVUS CORONE*.

An example from Söul.

The Carrion Crow is frequently seen in company with *Corvus macrorhynchus*.

30. *CORVUS PASTINATOR*.

In the neighbourhood of Söul I have observed flocks of Rooks only during the severe winter months. In large flocks I always saw numbers of a smaller and white-breasted species, which I took to be *Corvus dauricus*. I frequently tried to obtain a specimen, but was always baffled by the wariness of the bird. Both it and *Corvus pastinator* were highly suspicious of my European shooting-costume, and I had always to don a Corean robe (a white flowing garment and very conspicuous) before I could approach them.

31. *CYANOPOLIUS CYANUS*.

One example, shot at T'ai-p'yöng, a town twenty-five miles east of Söul.

The Blue Magpie is well known to the Coreans, who call it the *T'ai-ka-chi*, or Great Magpie. I observed it frequently in autumn and winter.

32. *LANIUS MAGNIROSTRIS*.

I shot a pair of this species, which was rare in my experience, in May 1888 near Söul.

33. *LANIUS BUCEPHALUS*.

A male example, shot in the grounds of H.B.M. Consul-General at Söul in March.

The Bull-headed Shrike is not a common bird in Corea.

34. *LANIUS LUCIONENSIS*.

Eight examples from Chemulpo and Söul, shot in May, June, and July.

Very common in summer.

35. *LANIUS SPHENOCERCUS*.

♀. Chemulpo; 20th September.

♂. Söul; 21st November.

♀. „ 22nd December.

♀. „ 9th February.

I have observed this very conspicuous Grey Shrike at all seasons near Söul.

36. *PERICROCOTUS CINEREUS*.

Two female examples shot on the crest of a hill near Söul; May.

A summer visitor on migration northwards.

37. *STURNUS CINERACEUS*.

A male from Söul; April.

Very numerous in spring.

38. *AMPELIS JAPONICUS*.

A band of these pretty Waxwings visited Söul in the spring of 1890. I identified one which was sent to me by Mr. A. Granzella, of the Chinese Imperial Maritime Customs, with this species as figured in David and Oustalet's 'Oiseaux de la Chine' under the name of *Ampelis phanicoptera*. M. Kalinowski did not obtain a specimen of this bird, and, though it should be very conspicuous, I never observed it myself.

This is the first record of its appearance in Corea.

39. *MOTACILLA BOARULA*.

Two examples, females, from Söul; 7th April.

A summer visitor. I have occasionally noticed the Grey Wagtail in small bands of half a dozen on the banks of shallow streams.

40. *MOTACILLA LUGENS*.

Three males from Söul procured in March and April, and one male from Chemulpo in July.

The Kamtschatkan Wagtail evidently breeds in Central Corea. It affects rice-fields rather than running water.

41. MOTACILLA LEUCOPSIS.

Two examples from Chemulpo; July and October.

42. ANTHUS JAPONICUS.

♀. Söul; 21st April.

Very rare. This specimen is the only one I saw during my two years' collecting. M. Kalinowski does not appear to have seen it in Corea.

43. ANTHUS ROSACEUS.

A female in winter plumage shot at Chemulpo on 4th November.

Specimens from Koko-nor in General Prjevalsky's collection assigned to *Anthus rosaceus* belong really to an Eastern form of *Anthus spinoletta*.

This Pipit is now for the first time recorded from Corea.

44. GALERITA CRISTATA.

The Crested Lark is subject to considerable climatic variation, and examples from Corea have been described as a distinct race under the name of *Galerita cristata coreensis* (Taczanowski, P. Z. S. 1887, p. 603). Three examples which I brought to this country are not distinguishable from the Chinese race *Alauda cristata leautungensis*, a rufous form of Crested Lark apparently unknown to Taczanowski, but described twenty-six years earlier (Swinhoe, Ibis, 1861, p. 256).

45. ALAUDA ARVENSIS.

The Sky-Lark is extremely abundant during the summer months.

46. COCCOTHAUSTES VULGARIS.

Four examples obtained in Söul in January, February, and March.

This Hawfinch is very numerous in winter.

47. EOPHONA MELANURA.

Two immature males shot in July at Chemulpo. Rare.

48. FRINGILLA SPINUS.

An example from Söul; January.

A winter visitor.

49. FRINGILLA MONTIFRINGILLA.

Four examples obtained in February and March at Söul.
Flocks of the Brambling are common during winter.

50. FRINGILLA SINICA.

Three examples from Söul; January and May.

51. PASSER MONTANUS.

The common Sparrow of Corea.

52. EMBERIZA FUCATA.

Four examples from Chemulpo, shot in July.

53. EMBERIZA RUTILA.

Three examples from Söul; May.

54. EMBERIZA CIOIDES.

A series of six specimens, comprising two males and a female from Söul (January and April), and three males from Chemulpo (July and September). The males range in length of wing from 3.0 to 3.15 inches, and are intermediate in size between the typical form and *Emberiza cioides castaneiceps*, of which *Emberiza gigliotii* is a synonym.

55. EMBERIZA RUSTICA.

Five examples obtained at Söul in December, January, and April.

56. EMBERIZA ELEGANS.

Three examples from Söul, procured in January and February.

57. EMBERIZA SPODOCEPHALA.

A solitary example obtained at Chemulpo in October.

58. EMBERIZA PASSERINA.

Three examples from Söul; January and February.

59. EMBERIZA TRISTRAMI.

A single example from Söul; May.

This Bunting appeared to be very rare.

60. *HIRUNDO RUSTICA GUTTURALIS*.

The common saying amongst the Koreans is that the Swallow comes from the south on the 3rd of their 3rd month, which corresponds roughly with the middle of April, and leaves on the 9th of the 9th month, or beginning of October. These dates are not very far out.

61. *GECCINUS CANUS*.

Two males and a female shot in December and January at Söul.

The Grey-headed Green Woodpecker is abundant in the neighbourhood of Söul.

62. *THRIPONAX KALINOWSKII*. (Plate V.)

Picus kalinowskii, Tacz. P. Z. S. 1887, p. 607.

Thriponax kalinowskii, Hargitt, Cat. B. xviii. p. 505.

My specimen of Kalinowski's Woodpecker was bought in the market at Söul in February. This bird is a close ally of *Thriponax richardsi*, a species found on Tsu-sima, a pair of islands in the Korean Strait. (See above, p. 94*.)

I observed this bird on two occasions on some hills to the south-east of Söul at an elevation of 1600 feet. It is by no means rare. My failure to procure more than one example was due to ill luck rather than to want of opportunity.

63. *PICUS MAJOR*.

Two specimens collected at Söul correspond with the Japanese variety.

64. *IYNGIPICUS DOERRIESI*.

Three females shot at Söul in December and January.

65. *UPUPA EPOPS*.

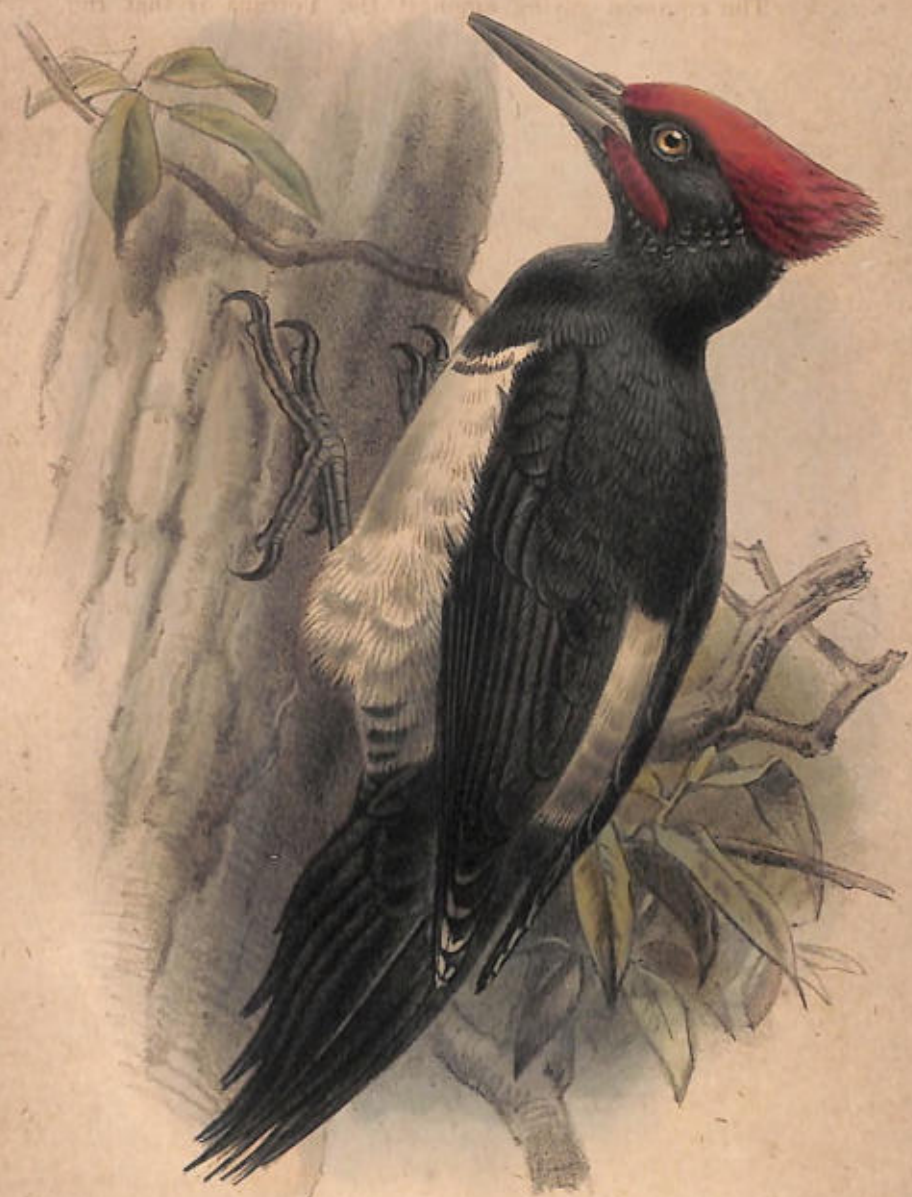
One specimen, a male, shot at Orikol in June. I also saw another at the same time.

The Hoopoe evidently breeds in Corea.

66. *COLUMBA RUPESTRIS*.

Two examples shot at Söul belong to the Eastern form of the Rock-Dove, with a broad white subterminal band across

* [See also the next article, p. 248.—Ed.]



J. G. Keulemans del. et lith.

Mintern Bros. imp.

THRIPONAX KALINOWSKII.

the tail. It was described and figured by Pallas as "*Columba oenas*, δ , *Columba (rupestris)*, *zona rectricum transversa*, *uropygioque albis*," from Dauria.

67. *TURTUR ORIENTALIS*.

The Eastern Turtle-Dove is quite common.

68. *CUCULUS CANORUS*.

A male from Orikol; June.

I also observed the Common Cuckoo as late as the beginning of September.

69. *ALCEDO ISPIDA BENGALENSIS*.

Very common throughout the summer.

70. *BUBO MAXIMUS*.

A male example bought in the market at Söul in January.

The Eagle-Owl is common in Corea, and many specimens have passed through my hands. One young bird, which was brought to me alive, grew so attached to H.M. Consulate at Chemulpo that after I set it free it returned daily for a week or ten days, and passed the heat of the day in a cool dark part of the verandah. I once saw a full-grown bird, which a Japanese kept as a pet at Chemulpo, pounce on and kill a sleeping cat so quickly that my assistance, hurried as it was, was too late to effect its object.

71. *NINOX JAPONICUS*.

A female shot in the grounds of H.B.M. Consul-General at Söul in May. A summer visitor.

72. *SCOPS SEMITORQUES*.

♀. Söul; January.

I bought this specimen in the market.

73. *FALCO AESALON*.

♀. Chemulpo; 1st October.

Hawking is a common pursuit throughout Corea. For this purpose, however, the Merlin is not used so much as the Peregrine and Kestrel, neither of which is represented in my collection.

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74. *PANDION HALIAËTUS*.

The Osprey is not often seen in Corea. In addition to the specimen obtained I saw one other hovering over the Yöng-heung River (at that time frequented by salmon) in September 1889.

75. *MILVUS MELANOTIS*.

A constant resident at Söul, where it is very numerous.

76. *BUTEO HEMILASIUS*.

A male specimen was obtained at Söul in December 1888. M. Kalinowski also killed a female at Söul on 15th January, 1888 (Proc. Z. S. 1888, p. 454).

The Siberian Buzzard has only been recorded once—by the Siebold Expedition, fully 60 years ago—from the neighbouring islands of Japan, and its occurrence in Corea is, therefore, an interesting fact.

77. *CIRCUS CYANEUS*.

A female example shot at Chemulpo in October.

Near Söul I have frequently observed the Hen-Harrier in autumn, winter, and spring.

78. *ARDEA CINEREA*.

Common, as also is *Ardea alba*, of which I have no example.

79. *CICONIA BOYCIANA*.

♀. Söul; 21st February.

I also shot an example of this species at Ham-heung in September.

The Corean Stork is not uncommon. It is by no means shy, and is easily approached and killed in the rice-fields.

80. *IBIS NIPPON*.

Examples obtained in December and January at Söul.

The Ibis is common in winter and spring. I once saw as many as a dozen perched in a grove of pines, but I usually observed it in dry rice-fields. It is a stupid, unsuspicious bird, and falls an easy prey to the gun. The cry is a loud, deep-sounding, trumpeting note, repeated at short intervals.

81. *CYGNUS MUSICUS*.

In mild seasons I have noticed that a number of these Swans pass the winter in a bend of the Han River, about three miles south of Söul.

82. *TADORNA RUTILA*.

Common in winter.

83. *ANAS CRECCA*.

Observed during the migrations in spring and autumn. One specimen obtained in March.

84. *ANAS FORMOSA*.

A visitor during the spring and autumn migrations.

85. *ANAS ACUTA*.

In mild seasons the Pintail may be seen the winter through in the neighbourhood of Söul.

86. *ANAS GALERICULATA*.

One female example; September.

This bird was shot near Ch'ang-An Sã, in the Keum Kang San. My attention was drawn to it by its curious behaviour for a duck; in fact, when I first saw it, it was on the top of a haystack. I did not notice the male.

87. *FULIGULA CLANGULA*.

A winter visitor.

88. *FULIGULA CRISTATA*.

A winter visitor.

The Tufted Duck is rarely absent from the Han or Söul River during winter.

89. *FULIGULA MARILA*.

A winter visitor.

90. *MERGUS MERGANSER*.

A winter visitor.

91. *MERGUS ALBELLUS*.

A winter visitor.

92. *LARUS CANUS*.

Two specimens from Chemulpo are very large, the wing from the carpal joint measuring in one 15 inches, and in the other $15\frac{1}{4}$ inches.

93. *LARUS CRASSIROSTRIS*.94. *STERNA SINENSIS*.

An example from Söul; May.

Very common in the late spring and early summer.

95. *CHARADRIUS CANTIANUS*.96. *CHARADRIUS HELVETICUS*.97. *CHARADRIUS MONGOLICUS*.98. *CHARADRIUS MINOR*.99. *LOBIVANELLUS CINEREUS*.

A female example shot on the 17th March; Söul.

100. *VANELLUS CRISTATUS*.

I have not found the Lapwing numerous in Corea.

101. *HÆMATOPUS OSCULANS*.

A specimen from Söul. The Oyster-catcher is plentiful in spring and early summer along the Han River.

102. *TOTANUS GLOTTIS*.

Extremely common in the rice-fields in spring and autumn.

103. *TOTANUS FUSCUS*.

I have shot the Dusky Redshank as early as 11th March at Söul.

104. *LIMOSA MELANURA BREVIPES*.

One example, a female, shot in a rice-field at Chemulpo on 6th September.

105. *TRINGA ALPINA*.106. *TRINGA RUFICOLLIS*.107. *SCOLOPAX GALLINAGO*.

The Snipe is always much more plentiful on the east coast

of Corea than on the west. In this my own observation is corroborated by the opinion of other European sportsmen.

108. *GRUS JAPONENSIS*.

The first blast of icy wind brings the Manchurian Crane down in small numbers from the north. This seems to be generally in October. Later on large flocks may be seen travelling in much the same formation as Geese, though more slowly and irregularly, and at a very great height. The piercing cry of these birds is often heard before they themselves are visible.

During the winter many are snared for export to China and Japan, where they are held in high estimation as birds of ornament.

109. *OTIS DYBOWSKII*.

A young male killed on 13th January near Söul.

This example does not show any appreciable difference from the European form (*O. tarda*), the lesser wing-coverts being mottled brown and black, just like the back. Perhaps the slate-grey wing-coverts, which are the principal distinguishing feature of the Eastern Great Bustard, are only present in adult specimens.

I have shot numbers of this bird during the winters of 1887, 1888, and 1889. In 1887 it was much more plentiful, probably because the winter was severe, than in succeeding years; flocks of thirty or forty were quite common. Its arrival at Söul varied, according to the severity or mildness of the season, from October to December, and I have seen it in the open fields between Chemulpo and Söul as late as the end of March. The largest Bustard I shot weighed 26lbs., and the smallest 7 or 8 lbs.

The Eastern Great Bustard is extremely timid and difficult to approach. I have never heard it utter a note, even when wounded. Its flight is not swift, but strong and steady, and it rarely keeps at a height of more than 30 or 35 yards from the ground.

110. *PODICEPS NIGRICOLLIS*.

A winter visitor.

111. PHASIANUS TORQUATUS.

This species is the common Pheasant of Corea.

112. TETRAO BONASIA.

The Hazel Grouse sometimes appears in the market at Söul, but not in any great numbers. I found it resident in the forests south of Päk-tu San, where it appeared to be plentiful.

XVII.—*Further Notes on the Birds of Tsu-sima, Japtan.*

By HENRY SEEBOHM.

IN the last number of 'The Ibis,' pp. 87-99, mention was made of fifty-nine species of birds of which specimens had been obtained on the island of Tsu-sima, in the Corean Straits.

Mr. Holst has sent me a second box of birds from that island, which enables me to add five more species to the list and to give some additional information concerning a sixth. As in the previous paper, the numbers placed before each name are those used in my 'Birds of the Japanese Empire.'

39. ACROCEPHALUS BISTRIGICEPS.

An example of Schrenck's Reed-Warbler, shot on the 24th of October, was probably passing through on migration.

132. PICUS RICHARDSI.

Mr. Holst was many months on the island before he succeeded in obtaining examples of this interesting species, but at last he procured two fine males. After repeated inquiries of the native hunters, he at length learnt that they were to be found on a mountain about nine miles from Kechi. As the name of the mountain is O-yama-mura, and the north point of the north island is marked Tojo-mura in the map, it is probably in the north island, "yama" being the Japanese term for mountain. Mr. Holst started early on the 15th of October in the company of a native hunter for the mountains, and succeeded in shooting a male of this Woodpecker on the 16th. The female was seen by the hunter, but was not obtained. The birds are said to be very rare,

but are easy enough to shoot. Although so large a bird, with such violently contrasting colours—white, black, and crimson—is very conspicuous, none of the inhabitants of Kechi who came to examine the spoil, and some of whom worked on the mountain where it was shot, had ever seen such a bird before, but on a reward being offered a second male was brought in about a week afterwards.

The most extraordinary fact connected with these two skins is that they afford conclusive proof of the identity of *Picus richardsi* with *Picus kalinowskii* of Corea, so that the island of Tsu-sima is not now known to have any bird peculiar to itself. Tristram's Woodpecker seems to vary somewhat in the amount of white on the tips of the primaries. One of Mr. Holst's examples from Tsu-sima appears to have the most white, the extent on the outer web of the third primary being nearly an inch and a half: in the type of *Picus kalinowskii* from Corea the white is described as being about an inch in extent (Taczanowski, P. Z. S. 1887, p. 608); in the second example from Tsu-sima (the one brought by the native hunter to Mr. Holst) it is about seven-eighths of an inch; whilst in the example recently presented to the British Museum by Mr. Campbell, who bought it in the market of Söul, the capital of Corea, it is about two-thirds of an inch*; and in Canon Tristram's type, which is a female, it is presumably still less. In the amount of white at the base of the quills I can see no difference between Mr. Holst's examples from Tsu-sima and Mr. Campbell's example from Corea.

There can be no doubt that the bird from Tsu-sima is of the same species as that from Corea, and that the trifling difference in the amount of white at the tips of the primaries is merely individual, or dependent upon age and sex, but has no geographical significance. The name of *Picus kalinowskii*, which dates from 1887, must therefore be regarded as a synonym of *Picus richardsi*, which dates from 1879.

* [This is the specimen figured above, Plate V. p. 242, as *Thriponax kalinowskii*.—Ed.]

Mr. Holst describes the irides as light yellow ; the bill as dusky grey, paler at the base of the under mandible and at the tip of both mandibles ; and the legs and feet as dark grey, with nearly white lines between the scales. The birds measured 20 inches from the tip of the bill to the tip of the tail before they were skinned, and 30 inches in expanse of wing. Both examples are in splendid plumage, with the forehead, crown, crest, and malar stripes scarlet-crimson, and the one shot on the 21st of October is moulting the first primary of each wing.

167. *Ninox scutulata*.

A female Brown Owlet does not differ from examples from Japan. It is a young bird, with its quills still in the pen, and was killed on the 7th of August.

168. *Scops semitorques*.

A female feather-toed Scops Owl, shot on the 14th of July, was accompanied by two young birds able to fly. The irides are described as orange-yellow, and the bill as greenish yellow, dusky at the tip of the upper mandible and the base of the under mandible.

191. *Accipiter nisus*.

A pair of Sparrow-Hawks appear to be identical with examples from Japan.

348. *Scolopax megala*.

A female example of Swinhoe's Snipe, shot on the 11th of August, was probably passing through the Straits on migration.

XVIII.—Ornithological Notes from New Zealand.

By J. C. McLEAN.

AFTER reading Sir Walter Buller's new edition of the 'History of the Birds of New Zealand,' I feel prompted to write the following short notes, which may be of interest.

The news that *Miro australis* and *Clitonyx albicapilla*,

which are considered almost extinct on the mainland*, are, at present, not uncommon in one part of the Northern Island of New Zealand, will, no doubt, be pleasing to those who take an interest in our fast-disappearing avifauna.

MIRO AUSTRALIS (Sparrm.).

It is just three years ago that I made the acquaintance of the Wood Robin, and on November 20, 1889, I was successful in taking a nest containing three fresh eggs, from the fork of a cabbage-tree (*Cordyline australis*) in thick manuka-scrub.

The bird is not uncommon in the locality; still I am afraid the time is not far distant when it will be so, for in the same strip of manuka I found two more nests in each of which the eggs had been destroyed. That rats did this I have not the slightest doubt; in the same locality I have found their "nests" in positions similar to those selected by the Robin, and a "nest," composed of a mass of leaves and grass, is often seen in a bunch of lawyer (a thorny creeper, *Rubus australis*) and in other dense-foliaged bush.

Seldom is the Greenfinch (*Fringilla chloris*) successful in hatching its eggs in a brier bush on this account, and it is rare in the locality in consequence.

CLITONYX ALBICAPILLA (Less.).

In the district frequented by *Miro australis* this is hardly a rare bird. It frequents the heavy manuka, and its sharp chattering notes enliven some of the almost deserted lighter bush. Towards the breeding-season single birds appear to wander from their usual haunts, and its trill or love-song at this period is very pretty.

From my note-book I take the following references to this species:—September 3, 1889, "Came on a flock of eight or ten White-heads in the thick manuka at the Lagoon, and, while having lunch under some large kowhai trees, a single White-head appeared hunting in the tree-tops, now and then stopping to sing a pleasing little song of half a dozen quickly repeated notes." Again on July 29, 1890, while shooting,

* See Buller, 'Birds of N Z.' 2nd ed. vol. i. pp. 35 & 54.

"Saw a flock of White-heads on a manuka flat, and shot male and female. They were feeding in the trees among the creepers, mingled with a flock of Blight-birds (*Zosterops cærulescens*), continually on the move, flying from tree to tree, and feeding in all possible positions; they chattered and called to each other, while occasionally one came to look at us in an inquisitive manner. Half a mile further on I shot a male White-head from a flock of about twelve individuals in the edge of the bush; they were moving forward in search of food in the tops of the smaller trees."

RHIPIDURA FLABELLIFERA (Gm.).

HALCYON VAGANS (Less.).

As showing the civilized tastes of some of our birds, two incidents in the nidification of these two species are worth recording.

In 1888, a pair of *Rhipidura flabellifera* built their nest in a V-shaped piece of twine, knotted to a rafter in the woolshed, at Te Mata. The nest (which I afterwards saw) was about twelve feet from one of the end doors, and only a few feet above the heads of some of the shearers; yet the Fantails came in and out and incubated the eggs while shearing, with its attendant noise, was being carried on.

In the case of the Kingfisher, I took, on January 8, 1884, a nest of this bird from the cut side of an old haystack, into which the bird had tunnelled in the same manner as it does in a sandy bank.

HIMANTOPUS LEUCOCEPHALUS, Gould.

HIMANTOPUS NOVÆ-ZEALANDIÆ, Gould.

Writing of *H. novæ-zealandiæ*, Sir Walter Buller says*:—"Mr. Seebohm suggests that this species is the result of an intermarriage of *Himantopus leucocephalus* with *H. melanopterus*, and he proposes to call it *Himantopus leucocephalus picatus*; but I think it would be extremely unsafe to adopt that view; for, as a matter of fact, no one has yet recorded an instance of the Black Stilt and the White-headed species

* 'Birds of N. Z.' 2nd ed. vol. ii. p. 26.

breeding together, which would follow as a matter of course on the supposition of hybridism."

I venture to place on record what I consider a case of the interbreeding of the two species.

While riding up the Tuki Tuki river-bed on December 27, 1888, we came upon a pair of Stilts that were evidently breeding. They flew round and at us, and did their best to lure us from their nest or young. One was a true *H. novæ-zealandiæ*, the other was apparently *H. leucocephalus*, but seemed to have slightly more black about the head and neck than usual. So, on December 29, we returned and found the birds in the same spot and flushed the black bird from the shingle, but unfortunately failed to discover the eggs or young. I shot the pied bird, but the black one was too wary and kept at a distance after the shot.

The bird shot was an adult female, and differs from typical examples of *H. leucocephalus* in that the black commences on the crown, ear-coverts, and throat, and extends uninterruptedly down the whole neck to the black of the back and the white of the breast; also the tail is ashy black. The white of the forehead, sides of face, and chin is mixed with grey as it reaches the black. The rest of the plumage is as in *H. leucocephalus*. Length 14·5, wing 9·5, bill 2·9, and tarsus 3·7 inches.

The two birds were certainly paired, but the eggs or young were not found. I traversed in three days (Dec. 17, 20, and 27) about twelve miles of the river-bed, taking four nests of *H. leucocephalus*, as well as eggs of *Larus dominicanus*, *Sterna frontalis* (from a colony consisting of only seven nests!), and *Phalacrocorax novæ-hollandiæ*, and during that time I only saw one pair of *H. novæ-zealandiæ*—some four miles below where the Stilts in question were located. Several pairs once bred on the river-bed, and I have taken a nest of the Pied Stilt within a short distance of two of the Black species.

On November 9, 1889, I took the nest of a pair of *H. leucocephalus*, and one of the birds seemed exactly similar to the Stilt described above.

DYSPORUS SERRATOR (Banks).

In the last volume of the 'Transactions of the N. Z. Institute' (vol. xxiii. p. 223), Mr. Cheesman states that on Norfolk Island *Sula cyanops* lays two eggs in the nest, while in the Kermadec Islands it lays only one. Again, Mr. North says* that in Australia the nest of *Dysporus serrator* usually contains two eggs. Now, in New Zealand, one egg is the usual number laid, and in a breeding-station that I have visited in four different years I have never seen more than one egg in each nest.

If this is really the case, why should *Dysporus serrator* and *Sula cyanops* lay more eggs in one locality than they do in another?

XIX.—The Bird-life of Adèle Island, North-west Australia.

By JAMES WALKER, R.N., H.M.S. 'Penguin.'

ABOUT 45 miles due north of the entrance of King Sound, North-west Australia, is a little island surrounded by extensive banks of sand and coral, which appears to have been first noticed by Commodore Baudin, during the voyage of the French discovery-ships 'Géographe' and 'Naturaliste' (1801), and named by him Adèle Island. It is incidentally mentioned in the narratives of the voyages of Captain P. P. King ('Survey of the Intertropical Coasts of Australia,' vol. ii. pp. 214, 215) and of Captain Stokes ('Discoveries in Australia,' vol. i. p. 184), but neither of these explorers appears to have landed on it, and all that seems to be known about the island is, that it is of very small extent (about three miles long, in a N.N.W. and S.S.E. direction, by about one mile broad), very low, sandy, and grassy, frequented by multitudes of sea-birds, and having a small patch of guano near its south-eastern extremity.

It being desirable to ascertain the position of this island with as much accuracy as possible, H.M. surveying-ship

* 'Descriptive Catalogue of the Nests and Eggs of Birds found breeding in Australia and Tasmania,' p. 363.

'Penguin,' on the morning of May 2nd, 1891, anchored at about a quarter of a mile from the edge of the surrounding reef, and nearly two miles from the island itself, which, at this distance, presented a very curious appearance—a long strip of bright yellow sand, surmounted by a straight narrow ribbon of green grass, being all that was visible. I left the ship with the observing party at 7.30 A.M., at which time the tide was rapidly falling, and our progress was soon stopped by the boat grounding on the reef. The water was fortunately as smooth as glass, and there was nothing else to do but to get out and wade to the shore, a distance of more than a mile. On the outside, the reef consisted almost entirely of dead coral, remarkably destitute of any living creatures, so far as I could see; and the superficial growth of small branching corals being very rotten in places, walking over it in about two feet of water was, to say the least, not very pleasant. Fortunately the coral soon ceased, and the bottom became clean firm sand; but the water gradually deepened as we approached the shore, until in places it was nearly up to our waists. More than once fair-sized sharks, besides several turtles, were noticed in this shallow water, and as I was armed with nothing more formidable than an insect-net, I was not sorry to get on dry land. To add to our discomfort, a heavy shower of rain passed over us as we were on our way ashore, so that, between fresh water above and salt beneath, we were all pretty thoroughly drenched. The rain-squall, however, was of brief duration, and the sky soon resumed the serene aspect usual in this region.

A walk of some fifty yards up a rather steep beach of fine sand brought me to high water-mark, and to the commencement of the dense but low vegetation which covers the little island, no part of which is more than eight feet above the level of the highest tides. This vegetation consists chiefly of a tall coarse grass with globular spiky "ears" (if I may use the expression) which is common on most sandy shores in this part of the world, and is here of particularly strong and luxuriant growth, and by no means easy to traverse.

It is varied by large beds of a handsome *Ipomœa*, with pale mauve-coloured convolvulus-like flowers, and with patches of a wild bean (*Phaseolus*, sp.), very like the familiar scarlet-runner. Very few other plants were to be seen, and a few bushes of an orange-flowered *Sida*, not exceeding six feet in height, were the only approach to a tree met with in the island, which is a mere sand-bank, in places somewhat mixed with an inferior quality of guano.

In the sand, especially close to the beach, were numbers of holes like rabbit-burrows on a small scale, which I found were the work of a small dark brown rat (*Mus* sp. inc.), of which several specimens were secured. These rats were evidently nocturnal in their habits, and proved very troublesome to the observing party which remained on shore for the night. I expected to meet with some lizards, but, curiously enough, did not see one, nor a butterfly of any sort. A few carrion and littoral beetles (*Dermestes*, *Saprinus*, *Trachyscelis*, &c.), some wasps (*Polistes*) and grasshoppers, and a few small moths—the widely-distributed *Deiopeia pulchella*, L., being common—comprised the whole of the insects observed with an exception presently to be noticed. The flies, that universal plague of North-west Australia, were on this occasion pleasantly conspicuous by their absence.

The sea-fowl formed by far the predominant and the most interesting part of the population of the island. As we approached it in the ship, the number of birds seen was much greater than had ever before been observed by us in this region, and as we were wading across the reef we could see them hovering over the island in a perfect cloud, the air being filled with their harsh cries. The sandy flats, miles in extent, left bare by the receding tide, were covered with large flocks of the handsome dark-mantled Lesser Sooty Tern, *Sterna anæsthes* (Scop.), which does, not, however, appear to breed on the island, though I have found it nesting abundantly on "Low Rocks" at the entrance of Admiralty Gulf, farther to the eastward. With them were small numbers of a black Noddy, probably *Anous stolidus* (Linn.),

and of the common Gull of these parts, *Larus novæ-hollandiæ*, Steph. Two or three other species of Terns were observed on the wing, notably the large and powerful *Sterna caspia*, Pall. (rarely), and *Sterna media*, Horsf., the latter being abundant and very noisy and restless. One magnificent old Pelican (*Pelecanus conspicillatus*, Temm.), in full plumage, was most conspicuous among the host of smaller birds, but I could not get within a quarter of a mile of him. I noticed that the shore-haunting Waders (*Esacus magnirostris*, *Hæmatopus fuliginosus*, *H. longirostris*, &c.), usually so abundant on the islands lying off this coast, were either very rare or quite absent; and only three examples of the Reef-Heron were seen. These, however, were somewhat remarkable as to colour, being of a peculiar light greyish ochreous tint, suggesting an intermediate form between the pure white *Demiegretta greyi*, Gray, and the slate-coloured *D. jugularis*, Forst.

On the beach, just above the line of the highest tides, and at intervals of a few yards apart, were little communities of two species of Gannets—the widely-distributed “Booby,” *Sula fiber*, Linn., and the fine dark brown and white *S. cyanops*, Sundevall—engaged in incubation. The two species usually kept separate, though occasionally one or two of one kind would be found in a group of the other, apparently not regarded as intruders. Both birds made very similar rude nests of seaweed, about two feet in diameter, and not exceeding three or four inches in height; but in many cases the eggs were deposited in a mere slight hollow in the sand, without any attempt at a lining. Two eggs were the usual number laid by each bird, those of the *S. cyanops* ($2\frac{1}{2}\frac{5}{10}$ by $1\frac{1}{2}\frac{5}{10}$ inch) being as a rule rather larger and more elongate in outline than those of the *S. fiber*, the average measurement of which was $2\frac{6}{10}$ by $1\frac{1}{2}\frac{5}{10}$ inch. Both were of the same greenish-white colour, with a dense white chalky coating. Very many of the nests contained young birds—some hatched only that morning and perfectly naked; others were half the size of the adults, and densely clothed with pure white down. The behaviour of the two birds, when

approached, was strikingly different—the *S. fiber* only giving vent to a feeble croak or two, and then scuttling awkwardly off the nest and away out to sea, returning, however, in a few minutes; the *S. cyanops*, on the other hand, made a fierce resistance, biting savagely at a stick presented to it, and uttering a succession of loud harsh croaks, or rather barks, while the bird had to be fairly shoved off the nest before it would quit its eggs or young. All the time hundreds of the Gannets, chiefly of the brown species, were on the wing, sailing overhead with the quietness of Owls, and often coming within two or three yards of me as I strolled along the beach.

A little way inland, on a spot comparatively open and bare of vegetation, was a breeding-station of Horsfield's Tern, *Sterna media*, Horsf. It was much too late to obtain the eggs of this bird, as the young ones, in a prettily spotted stage of plumage, were nearly as large as the adults, though as yet unable to fly, and they waddled along before me like so many ducklings. Only a few empty and broken egg-shells were to be found. There was a small patch of indifferent guano where these Terns were breeding, but I did not come across the main deposit of this substance, said to be from 6 to 24 inches in thickness, near the south-east end of the island.

Among some *Sida* bushes, not far from the centre of the island, was a breeding colony of Black-and-white Cormorants, *Phalacrocorax varius* (Gm.). The nests were rudely constructed of small twigs, and were built on the boughs of the *Sida*, about three feet from the ground. Each contained, in a very slightly defined hollow, three long-oval eggs ($2\frac{9}{20}$ by $1\frac{11}{20}$ inch), of a full bluish-green colour, with a very thick and rough chalky coating. Numerous dead fishes, some of quite large size, were strewn about here, and the aroma of the whole place was decidedly more pungent than agreeable. The birds themselves were somewhat shy, and did not admit of a very near approach before taking wing.

Last, and most interesting of all, came the breeding-place of the Frigate-birds, *Tachypetes minor* (Gm.). These fine

birds had been noticed while we were wading over the flats, soaring high above all the other Sea-fowl, many of them, indeed, reduced to mere black specks against the blue sky. Extending for more than half a mile along the middle of the island was a narrow strip of open land, almost free from the usual high grass, and covered chiefly with the *Ipomæa*. Here the nests of the Frigate-birds were to be seen in clusters or bunches of from five or six to as many as twenty together (very rarely singly), and built directly on the ground of stalks of grass and *Ipomæa*, small twigs, &c. The average dimensions of each nest were about a foot in height by a little more in diameter, though frequently the clusters of old nests, which were evidently used for a succession of years, formed masses of very considerable size. As in the case of the Gannets and Cormorants, the hollow in the nests was very slightly defined, and in each was deposited a single egg (never more than I could observe), averaging $2\frac{11}{20}$ by $1\frac{5}{20}$ inch, pure white in colour, very thin-shelled, with only a very slight limy coating. A few of the eggs were new-laid, and easily recognizable by their delicate and beautiful pink tinge; but the great majority were very "hard-set," and there were a great many young birds in the nests. These, when just out of the egg, were quite naked like the young Gannets, which they then greatly resembled; when more advanced they were covered with a scanty white down, and had a conspicuous saddle-shaped band of dark grey feathers across the back and scapular region. Nearly all the brooding birds were females, some of them in quite immature dress; but among them were many fine old cocks, conspicuous by their deep green-glossed black plumage and scarlet throat-pouches. A few stray Gannets, usually of the white species, had taken up their quarters for incubation among the Frigate-birds, but were evidently regarded with but little favour by the legitimate occupants of the ground.

The tameness, or rather the indifference, of these birds, especially of the females, was most surprising. As one walked among the nests, the sitting birds nearest at hand merely stretched out their necks, snapped their long slender

hooked beaks, and uttered a croak like that of the white Gannet, but very much more feeble; while, to obtain the egg, it was necessary to push the bird right off the nest, when it took wing without any apparent difficulty. The birds on the adjoining nests, little more than arm's length distant, meanwhile took absolutely no notice of the intruder. The young birds, when of any size, were much more vicious than their parents, and energetically resisted any attempt to take them up, croaking and snapping sharply with their bills. They were much infested with a large species of *Ixodes*, and a flat brown parasitic fly, closely resembling in general appearance the well-known *Hippobosca equina* of Europe, was plentiful about the nests, and was to be seen running over the feathers of the birds. A large number of the eggs were collected and, when boiled hard, turned out by no means bad eating; the "white," as is the case with the eggs of most sea-birds, being quite transparent and jelly-like, and the flavour not in the least degree rank or disagreeable.

While wandering about the island, I flushed, out of the long grass near the shore, two specimens of a Bittern, in all probability *Botaurus poicilopterus* (Wagl.). A Quail (most likely *Coturnix pectoralis*, Gould), which abounds on all the grassy islands hereabout, was also seen, but not by myself; and one or two small Warbler-like birds seen among the high grass, which I could not identify, completed the list of the birds observed on this occasion.

There were many recent tracks of Turtle on the sandy beach, and in the evening, when the tide began again to recede, the animals themselves were quite numerous on the reef, but were very wary. Two fine specimens were shot, one of which was a male weighing quite 200 lbs. Turtles of this sex are far less numerous, or at any rate less frequently seen, than the other on this coast, and the flesh is so rank as to be scarcely eatable, except after a long course of salt provisions.

The tide had risen sufficiently by 3 p.m. to enable the boats to come right up to the beach, thus saving the long and trying walk over the reef. As I was by this time nearly

ted out from scrambling through the thick high grass under a tropical sun, I returned to the ship, greatly pleased with the opportunity I had enjoyed of becoming acquainted with the interesting bird-life of this out-of-the-way little island.

Roebuck Bay, N.W. Australia,
16th September, 1891.

XX.—*On the Birds of Madagascar, and their Connection with Native Folk-lore, Proverbs, and Superstitions.* By the Rev. JAMES SIBREE, Jr., F.R.G.S.*—Part V.

[Concluded from p. 119.]

VIII.—THE WILD-FOWL, PELICANS, SEA-BIRDS, DIVERS,
AND EXTINCT SPECIES.

WHEN speaking, in the last chapter, of the Waders, it was remarked that the physical conditions of Madagascar rendered it well fitted to be a home of that Order of birds; and this is equally true of the next Order, according to Dr. R. Bowdler Sharpe's classification, that of the Wild-fowl. As will be seen by the tabular List (p. 270), there are ten species of Wild Ducks, Dwarf Geese, Diving Ducks, Teal, and Tree-Ducks living in this island, and these find appropriate conditions for their existence, as well as abundant food, in the numerous marshes and the many small lakes and meres found all over the country, as well as in the extensive lagoons of the eastern coast. Two of these Wild-fowl are peculiar species, but the rest belong to widely-spread kinds.

In some parts of the island the Wild Ducks are found in vast numbers, especially in the immense swamps which cover the greater part of the level country in the Antsihànaka province. These mark the former extension of a great lake, which in ancient times covered the whole valley, and of which the present Lake Alaotra is the still slowly diminishing remnant. In a journey round the north-western portion of the

* Reprinted from the 'Antananarivo Annual,' 1891, with additions and corrections by the Author.

province in the year 1874, I was much astonished at the immense numbers of Water-fowl we saw in every direction. Large clouds of them flew overhead as we crossed the marshy tracts, almost darkening the air.

An intelligent native who lived for three or four years in Antsihànaka thus describes the bird-life of the Alaotra and its neighbourhood:—

“The birds,” he says, “are exceedingly numerous, but those which go in the largest flocks are the *Takà* (a Tree-Duck) and the *Tsiriry* (an allied species). These are found in great abundance and go in flocks of from three to four hundred; so that at evening, when they settle down along the shore, one cannot walk by the water-side, for the ground is black with them. Next to these in numbers are the birds called *Vòrontsàra* (a species of Dwarf Goose) and *Sàdakèly* (a kind of Duck). These also go in flocks, but in smaller numbers, from twenty to thirty together. There are also other birds which go in flocks, but do not always remain on the lake, visiting it only in the summer and autumn; these are called *Sàma* (a species of Flamingo). The *Sàma* is a white bird, of beautiful plumage, tinged with light-pink shades. It is nearly twice the size of a Heron and stands much higher; it is found in lines along the shore, like a file of soldiers, and there it seeks its food. There are also many other birds on the Alaotra, such as the *Aròsy*, the *Fàralàm-botra*, and the *Angàka* (all species of Duck), the *Otrika* (a Coot), the *Talèvana* (a Blue Waterhen), the *Vòrombè-mainty* (a Heron), the *Famàkisifotra* (an Ibis), the *Miòmbonkòmana*, the *Vivỳ* (Lesser Grebe), and the *Kitànòtànò* (the name both of a Snipe and a Curlew). The bird called *Miòmbonkòmana*, when feeding, covers up its head with both wings until it has finished.”

Of the *Tsiriry* Tree-Duck (*Dendrocygna viduata*), which is common also to Tropical America and to Africa, M. Pollen says that “it is extremely plentiful in Madagascar, the Comoros, and the smaller neighbouring islands. At Anórontsànga I have seen a flock of a hundred of these Ducks on the sea-shore among other crowds of aquatic birds. They are very difficult

to take by surprise, for they swim and dive with great swiftness, and their flight is extremely rapid. Their piercing and whistling cry, uttered constantly when flying, consists of the syllables *pyswy, pyswy*. They attach themselves quickly to the places where they are fed; for instance, those kept in the Acclimatization Gardens at St. Denis, Réunion, are perfectly free, and do not fail to repair every evening to the sea-shore, yet they return every morning to the ponds where they are fed." This bird builds its nest on the hills among the grass, and the young are taken to the water as soon as hatched.

The Dwarf Goose, says M. Pollen, has a heavy flight, with none of the rapidity of the other Wild-fowl; but it is an excellent swimmer and diver, remaining all day on the water, except during the great heat, when it perches on the trees. These birds are extremely shy, and when alarmed dive immediately, only to reappear at a considerable distance, so that it is very difficult to catch them. Of this bird, however, Mr. Cory remarks: "Of all the Ducks I know, it is the hardest to shoot, on account of the pace at which it flies." And Mr. W. Wilson also says: "I always thought their flight was rapid, anyhow they are very difficult to shoot. This bird, apparently known elsewhere as *Vórontsàra* ('Handsome-bird'), is more often called at Itàsy *Tàtatsiry*, and in Imèrina *Vòronandriana* ('Royal-bird'), this latter name being probably given on account of the gorgeous markings on the neck and body of the bird."

Mr. Wilson says: "The *Tsiriry* is certainly the commonest water-bird. On the marshes and ponds near Mánandàza I have seen as many as 500 together. Probably from the swarms of this bird in that district arises its name of *Bètsiriry* ('Many-Tsiriry')."

Mr. Wilson also remarks: "The *Fàralàmboitra*, or Red-billed Wild Duck, which is perhaps the most tender of all the Ducks for eating, is sometimes termed the *Sàdakèly*, but more probably from ignorance than anything else. This bird is specially sought after round Antanànarivo for the Queen's table. All Her Majesty's birds must be shot with

small slugs of *iron wire*, and not with lead, lest by accident a little lead swallowed should lead to lead-poisoning !”

Mr. Cowan mentions that the numerous meres in the valley of Ihòsy (Ibàra) are the favourite haunts of Herons, Ducks, Grebes, and Rails. In an interesting paper by Mr. Baron in the ‘Annual,’ vi. p. 92, he has given a list of no less than thirty-four aquatic birds (by their native names) found on the Alaotra lake in Antsihànaka; of these nearly half are still undescribed and cannot at present be identified. In the little museum at the L. M. S. College at Antanànarivo there is, among other Malagasy birds’ eggs, a series of fifteen eggs from Antsihànaka, chiefly of Water-fowl on the Alaotra.

As for the native names of these Wild-fowl, many of them seem to be imitative of their screaming cry, as *Angàka* and *Akàky* (Meller’s Duck), *Rahàky* (Red-billed Duck), *Vóron-kóika* (Dwarf Goose), and *Tsiriry* and *Vivỳ*. Other names refer to their appearance, as *Fòtsièlatra*, “White Wings” (Red-billed Duck)*; *Vórontsàra*, “Handsome-bird” (Dwarf Goose), which is also called *Màroampinga*, “Many Shields,” and *Sóafify*, “Handsome-cheeks” (?) (this latter is also a name of the Hottentot Teal); and *Mahèrilóha*, “Strong-headed” (a Diving Duck). Some names of the Red Wild Duck seem to refer to its apparently bare appearance, for one means “Moulting” and another “Plucked.” Many other names are obscure, at least with our present knowledge of provincial Malagasy.

Before concluding this section I will add the following note, kindly given me by Mr. W. Wilson:—

“One of the smaller Ducks which frequent Lake Itàsy is known by the Queen’s gamekeepers near Antanànarivo as the *Tafiotra*, but at Itàsy it goes by the name of *Andràndra* [it is probably the *Thalassornis leuconota*]. It is a rather small Duck, of a reddish-brown colour, somewhat mottled with black on the breast, with a funny ‘dumpy’ appearance. It is not difficult to procure. The natives tell me that the female bird

* Mr. W. Wilson says: “The name of *Fòtsièlatra* is at Itàsy confined to the small Duck which is known as the *Kintokely* or *Sàdakely*, but never given to any other, to my knowledge.”

experiences some difficulty in the laying of her eggs, which are very large in proportion to the size of her body. Indeed, the passage of the egg is said to make the bird faint and become unconscious (*tòrana*). If found just at this time she may be taken off her nest with the hand. On account of this peculiarity this bird is *fâdy*, or tabooed, by all native women, who think that they would experience a similar difficulty in child-birth were they to eat the bird."

Mr. Mackay also says: "The *Tafiotra* lays the largest egg of any fowl on the Alaotra. It is generally known as the *Adàladàla* ('Foolish one'), as it does not fly away until one is very near it, and it is consequently very easily shot. They are generally fat and plump and very good eating (our own experience). General report says that it is *tòrana* (faint) when laying its eggs. One man, however, denied this to me with some vehemence."

The three families of the ninth Order of birds, including the Frigate-birds, Tropic-birds, and Pelicans proper, are all represented in Madagascar, although, the first two of these being oceanic birds, it might be more correct to say *around* the great island.

Little seems to have been observed in Madagascar of the two species of Tropic-bird. In habits and appearance they probably do not differ from the other species of this widely-spread oceanic bird. No native name, so far as at present known, has been given either to them or to the Frigate-bird.

The third family of this Order includes one Pelican, one Darter, one Cormorant, and a Gannet.

The African Cormorant is frequently seen on the rivers of the west coast, perched on the dead branches of the trees on the river banks. Here it watches the surface of the water, darting down like an arrow on any fish that may appear. It is not at all shy, and so can easily be approached near enough to be shot. But it is quite different when the bird is on the water, for it swims and dives rapidly, remaining a long time under the surface. The *Sàkalàva* give this bird the name of *Rénivoàny*, i. e. "Mother (or Guardian)-of-Crocodiles," for

they insist that it acts as a sentinel for these reptiles. They say that when one of the birds is seen perched on a tree by the river, one is certain to see, not far off, a number of crocodiles. Other and similar names for this bird are *Sakai-zamboà*, "Crocodiles'-friend"; and *Arondóvy*, "Guardian-of-the-enemy," i. e. the crocodile, the enemy *par excellence*, and the most feared of all the living creatures in the island. It is also termed *Vórompisáky*, which probably means the "Bird-that-takes (prey)-from-the-water"; and *Faméfakangàty*, "Shell-breaker" *.

As to the Darter, it is a curious fact that the Madagascar species is the same as that found in India, and is different from that of Africa (*Plotus levaillanti*), an example of Oriental affinities of which the Malagasy avifauna furnishes so many illustrations. In habits, food, and habitat the Darter resembles the Cormorant already described, except that it is more shy, is swifter in flight, and dives more adroitly. It also shares the name of *Rénivoà* with its cousin. As described in their English name, the Darters have remarkably long and flexible necks, with which they dart upon their finny prey. They usually sit solitarily, with the neck bent into the shape of an S, but there are always some others not far off. On getting a fish the Darters throw it up into the air and catch it by the head, which is devoured first.

In the previous chapter, when treating of the Ibises, it was noticed that the word *Manàrana* appears to be a generic name applied to several different species. Mr. W. Wilson remarks:—

"I have never known this name applied to any other bird but the Cormorant; certainly, at Itàsy and in the whole of the district 20 miles round the lake, the name is given only to this one bird, which sits all day long on some convenient rock or branch of an overhanging tree, watching for the small fishes, which are always abundant in the shallower parts of the lake. These birds and their cousins, the Snake-necks, or Darters, always throw the fishes they

* The *Angàty* is a black spiral freshwater shell, *Melanatria johnsoni*, E. A. Smith, P. Z. S. 1882, p. 383.

catch high up into the air, in order to 'bolt' them head foremost. The Cormorant is a regular 'gorger' (hence probably its name) and is easily shot, being seldom found with a partially empty stomach. It is not difficult to rear it in captivity, but it lives exclusively on fish."

As to the Gannet, M. Grandidier says that it is seen in parties of from eight to ten birds, fishing together; but it is often attacked by the Lesser Frigate-bird and compelled to disgorge its prey for the benefit of the more powerful bird. These Gannets make their nests and rear their young in all the smaller islands of the neighbouring seas.

Although in the last-mentioned Order there are, as we have seen, several species of oceanic birds, the tenth Order, according to Dr. R. B. Sharpe's classification, is that of Sea-birds proper, and includes nearly a score of widely-spread and powerfully-winged species belonging to the Terns, the Noddies, the Gulls, and the Petrels. Of these little need be here said, because, in the first place, not much has been noted with respect to their habits; and also because there is little, if anything, in which they differ from the Sea-birds which are found all over the world, and which have been described in so many books of travel and natural history.

The Roseate Tern is said to be very common on the islets and shoals of Cargados in the Indian Ocean; the Greater Tern is found in great numbers in the smaller islands, as Aldabra, Tromelin, Juan da Nova, and others; the Panayan Tern appears to be very rare in Madagascar waters; while the Noddy is said to come by thousands to roost in the cliffs and rocks of Réunion at certain seasons. Mr. Cory informs me that "one of the Terns (grey, with a black head and coral feet and bill) is very common in Imèrina. There are great numbers even in a pond close to Ambóhimànga, where I have shot them." It is also very common all round Itàsy, a lake nearly in the centre of Madagascar (150 miles from the sea), where it is known by the name of *Kaonkaona*, a word which means a howl, yelp, or cry. All these birds are known by the Sàkalàva under the general name of *Sambè*,

which M. Pollen affirms to be the same as the Malagasy word *sàmba* (ship), and refers to their being seen, like ships, far out at sea. I am, however, rather disposed to think that the two words are *not* identical, but I have no other solution to offer.

As will be seen by the tabular List (p. 272), about a dozen Gulls and nine species of Petrel have been met with in the seas surrounding Madagascar, but it is difficult to give their exact number and names without a much more intimate knowledge of the coast-line of the whole island than is yet available to naturalists. The Dusky-headed Gull is found not only on the coast, but far in the interior, as on the Lake Alaotra in Antsihànaka and the River Mangóky. Another Gull has been shot in the neighbourhood of Antanànarivo. The common name for the Gulls which visit Itàsy is *Hòlo-kòloka*, descriptive, say some, of the peculiar cry they utter, although it may be descriptive of their habits, as it means "crafty, trickish, guileful."

The last Order of birds, that of the Divers, will not detain us even so long as the one just noticed, as it only contains one species found in Madagascar. This is a form of Lesser Grebe, or Dabchick, which appears to be almost identical with the bird found over Europe, Africa, and part of Asia. It is very common wherever there are pools or any piece of fresh water, where it may be seen swimming, diving down at any alarm, to reappear in a minute or two at a considerable distance. It is known to the Malagasy by the name of *Vivỳ*, which is probably imitative of its plaintive little cry. (*Dendrocygna viduata* is also known by this name in the north-west of the island.) This Grebe is also called *Vòrombòatàvo*, i. e. "Gourd-bird," but why I cannot say.

Our review of the birds indigenous to Madagascar, and still to be found throughout its forests and plains and its rivers and sea-coasts, is now completed; but a few words may be added as to two or three species of birds now extinct,

but which, at no very distant period, scoured its plains, and must have been very prominent and striking members of its avifauna.

It was in the year 1850 that a very large bird's egg and some fragments of bones were first discovered by a M. Abadie in the southern part of Madagascar, and excited great interest among naturalists. Subsequently other eggs were found, and in 1868 M. Grandidier discovered in the marshy soil at Ambólintsàtrana, on the west coast of Madagascar, the tibia, femur, toe-bones, and some vertebræ of a bird, corresponding in size with the fragments previously obtained, and evidently, from their proximity, belonging to the bird which laid these great eggs. It became clear from the shape and structure of these portions of the skeleton that they were parts of a bird allied to the Ostrich, and still more nearly to the Moa or Dinornis of New Zealand. The egg is remarkable as far exceeding in size any previously known egg, for the longer axis is no less than $12\frac{1}{4}$ inches, with a smaller axis of $9\frac{3}{8}$ inches; while the size of the largest known Ostrich egg is only $6\frac{1}{8}$ inches by 5 inches. In capacity this Madagascar egg is therefore equal to six Ostrich eggs and to 150 average-sized Hen's eggs. This egg, however, does not appear to have been laid by the largest of known *birds*, living or extinct, for the leg- and toe-bones are not so long as those of the New-Zealand bird, which was, so far as our present information goes, the most gigantic of all feathered creatures*.

This Madagascar bird, which was named by Isidore Geoffroy Saint-Hilaire *Æpyornis*, appears to have been about as large as the largest Ostrich, but with extremely massive leg- and toe-bones, so that it was probably endowed with great speed on foot, but, like all the Struthionæ, would be incapable of flight. No complete skeleton has yet been discovered, and we still know nothing of the form of the cranium and of the vertebræ of the neck. Enough, however, has been ascertained from the other bones to enable it to be said that the *Æpyornis*

* So far as the evidence at present available allows us to judge, the Madagascar bird did not exceed 8 ft. 6 in. in height, while the Moas varied from 8 ft. 2 in. to 9 ft. 10 in.

Tabular List of Madagascar Birds.

(TABLE VI.)

English Name.	Scientific Name.	Hova or General Name.	Provincial Malagasy Names.
Order VIII. ANSERES. (WILD-FOWL.)			
Family ANATIDÆ. (DUCKS.)			
Meller's Wild Duck	<i>Anas MELLERI</i> *.	Angaka.	Akakamainty (Bs.), Akaky (T.).
Red-billed Wild Duck	<i>Anas erythrorhynchos</i> .	Fösielatra.	Rahaky, Sadakely, Firalambotra, Filamatra, Lovilovy (Sih.).
Bernier's Wild Duck	<i>Anas BERNIERI</i> .		Haké (T., N.B.).
Dwarf Goose	<i>Nettion auritus</i> .	Tatatsiry, Vononandriana.	Maroampinga (Ba.), Soafify (So.), Vononkôika, Vonon-tsara (Bm.).
Widowed Tree-Duck	<i>Dendrocygna viduata</i> .	Tsiriry; and so also in many dialects.	Viviv (N.S.).
Larger Tree-Duck	<i>Dendrocygna major</i> .	Tahia (T., N.B.).	Etsôa (So.).
African Humped Duck	<i>Sarcidionis africana</i> .	Arôsy, Ara.	Anrongo (Bs., T.), Ongongo (Ba.), Sivongo (N.S.), Kâboka, Kâvoko, Kasana (So.).

White-eyed Duck	<i>Fuligula nyroca.</i>		Ony, Onotra (Bm.), Hónjo (Sih.).
White-backed Diving Duck†..	<i>Thalassornis leucanota.</i>	Tafiootra, Andràndra, Bélióha.	Mañerilóha (N.S.), Ménamólotra (N.B.), Danamona, Tafiootra, Adaladala (Sih.).
Hottentot Teal.....	<i>Querquedula hottentota.</i>	Sadakely, Kintokely, Fotsièlatra.	Saafify (N.S.), Tàtaka (So.), Kasasa (N.B.), Kizazaka (Sih.).
Order IX. STEGANOPODES. (PELICANS.)			
Family FREGATIDÆ. (FRIGATE-BIRDS.)			
Lesser Frigate-bird	<i>Fregata minor.</i>		
Family PHAETHONTIDÆ. (TROPIC-BIRDS.)			
White Tropic-bird	<i>Phaethon candidus.</i>		
Red-tailed Tropic-bird	<i>Phaethon rubricauda.</i>		

* As in the first part of this paper (Ibis, 1891, p. 202), the names in small capitals show the genera and species of birds peculiar to Madagascar. The initials and contracted words in the last column are substitutes for the names of the different Madagascar tribes: see Ibis, 1891, p. 203.

† This name, a translation of the scientific one, is apparently a misnomer, for Mr. Cory says, "It has not a white back, and I have not seen a white-backed Duck in the island."

(TABLE VI., continued.)

English Name.	Scientific Name.	Hova or General Name.	Provincial Malagasy Names.
Family PELECANIDÆ. (PELICANS.)			
Red-backed Pelican.....	<i>Pelecanus rufescens.</i>		
Booby Gannet.....	<i>Sula piscator.</i>		
Black-bellied Darter.....	<i>Plotus melanogaster.</i>	Manàrana, Fìtsindrona, Tró- zona.	Ramangàra (Bs., Ba., T., Tm.), Rénivohy (N.S.), Vòmpisàky (Bs., Ba.), Fa- mèlakangàty, Ramangàvia (T.), Rénivohy (N.S., N.B.), Sakaizamboàty, Vòromboàty (So.).
African Cormorant.....	<i>Phalacrocorax africanus.</i>	Arondovy.	
Order X. GAVIÆ. (SEA-BIRDS.)			
Family LARIDÆ. (GULLS.)			
Caspian Tern.....	<i>Sterna caspia.</i>		Sambè.
Greater Tern.....	<i>Sterna maxima.</i>		Sambè.
Horsfield's Tern.....	<i>Sterna media.</i>		Sambè.
Roseate Tern.....	<i>Sterna dougalli.</i>		Sambè.
Panayan Tern.....	<i>Sterna anastheta.</i>		Sambè.
Hybrid Tern.....	<i>Hydrochelidon hybrida.</i>		Sambè.

White Noddy	<i>Gygis caudata.</i>		Sambè.
Thin-billed Noddy	<i>Anous tenuirostris.</i>		Sambè.
Stupid Noddy	<i>Anous stolidus.</i>		Sambè.
Dusky-headed Gull	<i>Larus pacirocephalus.</i>		Hôlokôloka.
Antarctic Skua	<i>Stercorarius antarcticus.</i>		Hôlokôloka.
Family DROMATIDÆ. (CRAB-POVERS.)			
Crab-Plover	<i>Dromas ardeola.</i>		Hôlokôloka.
Family PROCELLARIIDÆ. (PETRELS.)			
Sooty Petrel	<i>Procellaria fuliginosa.</i>		
Giant Petrel	<i>Ossifraga gigantea.</i>		
Blue Petrel	<i>Pteron vittata.</i>		
Black-bellied Petrel	<i>Fregatta melanogastra.</i>		
Oceanic Petrel	<i>Oceanites oceanicus.</i>		
Green-billed Albatross	<i>Diomedes chlororhyncha.</i>		
Black-browed Albatross	<i>Diomedes melanophrys.</i>		
Green-billed Shearwater	<i>Puffinus chlororhynchus.</i>		
Dusky Shearwater	<i>Puffinus obscurus.</i>		
Order XI. PYGOPODES. (DIVERS.)			
Family PODICIPITIDÆ. (GREBES.)			
Pelzel's Grebe	<i>Tachybaptus fluviatilis</i> PEL- ZELI.	Vivÿ, and so in most other dialects.	Vorombôatavo (T).

maximus was allied to the *Dinornis* and the *Apteryx*, "although it is distinguished from them by profound differences of internal organization, amongst others by the presence of highly developed air-passages, which allowed the air to penetrate into the thigh-bones."

M. Grandidier also discovered the bones of two other and smaller species of *Æpyornis*, one of the height of a Cassowary, and the other as large as a Bustard, so that it is probable that there were several species of this ancient genus formerly living in Madagascar. Most of the eggs of the largest species have been found in a small district in the extreme south-east corner of the island, between the River Mandrèry and a promontory called Andrahòmby. In this neighbourhood fragments of the eggs are said to be easily obtained, but perfect eggs are very rare and command a large price in Europe. Another specimen, described by Mr. G. Rowley, was found at Mānanjāra, on the south-east coast, at a depth of 45 feet, in a hill of ferruginous clay, by some natives who were digging for iron-ore. As these remains have thus been discovered at three different points on the southern coast of Madagascar, there can be little doubt that systematic exploration would reveal much more numerous relics of this big bird as well as of its eggs.

It is not at present possible to say exactly at what period these great Malagasy birds became extinct, but M. Grandidier believes that they were existing at a very recent epoch, since their remains are found in the newest formations, and that therefore they have been living during the period since man has inhabited Madagascar.

XXI.—*Notes on the Caprimulgidæ.* By ERNST HARTERT.

(Plate VI.)

ALTHOUGH the Cypselidæ and Caprimulgidæ are, in my opinion, somewhat allied families, and, in a systematic arrangement, should be placed near together, there can hardly be found a greater difference than in the dull and

simple coloration of the plumage of the Swifts, mostly very constant and liable to little variation, and the beautiful and richly coloured plumage of the Goatsuckers, varying in most of the species to a certain extent, and, in some cases, more than in almost any other family of birds. The colours of the Caprimulgidae are, as a rule, highly protective, and, as in other similar cases (for instance, *Alauda*, *Galerita*, &c.), vary much according to the surroundings, and especially in relation to the soil. So, as a rule, we find yellow, buff, and isabelline-coloured species in sandy deserts and desert-like localities, darker species in more wooded countries, and richly coloured ones in tropical forests. But even the same species varies much, according to the soil that it frequents, and therefore several species readily form more or less well-defined local races, often well worthy of subspecific rank. In many cases, of course, as usual, we do not understand the reasons why a certain form is differentiated, because we have so little knowledge of the influence of climate, the amount of rainfall, the surroundings, and the food. Still more puzzling are several other forms, because they undoubtedly occur in reddish and brownish or greyish phases, apparently independent of locality and age, as is the case with certain Owls, also birds of nocturnal habits.

Before an author writes about any group of birds he should make himself acquainted with their seasonal changes of plumage; and this I have tried to do as regards the Goatsuckers, but have unexpectedly found it very difficult. C. L. Brehm and also Naumann, whose statements generally stand like stone and iron, both assert that the Common Goatsucker moults twice in the year—the first time before it leaves Europe, and the second in its winter-quarters. All subsequent writers that touch upon the question at all also state that a double moult takes place. Until lately I had no reason to doubt this assertion, as the specimens of *Caprimulgus* that I have shot in Germany during the migration in autumn were, so far as I can remember, all without white tips to the lateral rectrices—a character which, according to the authors named above, is that of young specimens as well

as that of the adult bird after the summer moult. During my recent investigations, however, I have come to consider it very improbable that there really exists an entire summer moult in the Caprimulgidæ, as several specimens which I have examined seem to disprove its existence. Correspondence with several good field-ornithologists in my own country and personal inquiries among a number of my English friends have not satisfied me; at least nobody could state that he had undoubtedly observed a *total* moult. For the present, therefore, I must leave this question open, but I hope to be able to solve it during the current year. What I now believe is, that the Goatsuckers moult very slowly, like all birds which depend greatly on their powers of flight in procuring food; that there is no time to moult the wing- and tail-feathers between the breeding-season and their departure; that they do not moult them during their voyage to the south, and that therefore (though they may change parts of the body-plumage in Europe) they moult the quills and rectrices during their absence from Europe—so that *only one moult takes place in a year*. I should be extremely delighted if ornithologists could give me some evidence of the truth of this supposition or disprove it.

In working at the Caprimulgidæ in the British Museum I have had before me grand materials, as will be seen from the lists of specimens in the 'Catalogue of Birds'; but, besides these, I have tried to see as many specimens as possible of rare species and of such forms as are not represented in the British Museum, especially types and typical specimens. Herein I have been greatly assisted by Mr. F. A. Allen, Freiherr H. von Berlepsch, Messrs. J. Böttikofer, H. Dresser, R. Hertwig, Alfred Newton, Th. Pleske, O. Salvin, J. Stolzmann, Count Salvadori, Mr. Walter Rothschild, Mr. H. Seebohm, Canon Tristram, and others, who have rendered me most valuable help.

Having said thus much, I will proceed to give remarks upon certain obscure points as regards some of the species of this difficult group.

(1) *CAPRIMULGUS EUROPEUS* and its allies.

The Common Goatsucker is spread over Europe generally and the south-western parts of Siberia. There is no difference in plumage between specimens from various parts of Europe, except in the extreme east, where the plumage becomes paler and the dark markings less bold. If we proceed further to the east, to Eastern Persia, the Oxus, Afghanistan, and North-western India, we find this form more developed and more pronounced, so that specimens from these localities form a subspecies, *Caprimulgus unwini* of Hume. This form seems to be very distinct, if it is compared with specimens of *C. europæus* from Western Europe, but it is connected with the latter by a perfect series of intermediate forms. Therefore it is only possible to regard *C. unwini* as a paler and smaller subspecies of *C. europæus*, but it is not desirable to name any of the intermediate forms also, as there is no constancy among them. No advantage can be gained by naming such ill-defined intermediate forms as are connected with both extremes by an unbroken series.

The *Caprimulgus europæus unwini*, as I shall call this eastern form, is found in Eastern Persia, Afghanistan, the Northern Panjab, parts of Turkestan, and far into the East. It wanders south in winter to Sindh, and probably to Arabia.

Besides this well-known race there is another almost unknown form in Central Asia, *i. e.* the *Caprimulgus plumipes* of Prjevalski (Rowl. Orn. Misc. ii. p. 158). Through the kindness of Dr. Pleske, I have had the opportunity of examining one of Prjevalski's typical specimens of this bird from Mongolia and two perfectly similar specimens from Turkestan. It is a very distinct form, of a rufous-buff, or even sandy-rufous, colour, with narrow streaks of black along the crown, and with broad and regular pale rufous bands across the inner webs of the primaries. Comparison of a large material, however, shows that these characters are less constant than the first impression induces one to think. There are specimens of *C. unwini* that approach *C. plumipes*, and some of the latter that somewhat point to *C. europæus*. Therefore it seems preferable to consider *C. plumipes* as

another subspecies of *C. europæus*, but by no means intermediate between the latter and *C. unwini*. Besides the specimens of *C. plumipes* from Mongolia and Tschinas in Turkestan, from the St. Petersburg Museum, I have before me one from Kandahar, in Afghanistan, and one from the Dolan district, about thirty miles from Yarkand, collected by Dr. Scully. The latter specimen, which is as unmistakable as that from Kandahar, is mentioned in 'Stray Feathers' (iv. p. 133) under the name of *Caprimulgus ægyptius*; but a footnote by the editor clearly indicates that he was very uncertain about this identification, and there is no doubt that the mistake only happened from want of specimens of the true *C. ægyptius*. Although in the coloration of the upper surface *C. plumipes* has a faint resemblance to *C. ægyptius*, it can never be mistaken for that bird, the white (not pale rufous) bands or sinuations on the inner webs of the primaries and the quite different dark markings of the upper surface being sufficient to distinguish the latter.

But other Goatsuckers are found in Turkestan. The true *Caprimulgus ægyptius* occurs in the sandy plains of the north-western districts, as *C. arenicolor* of Severtzoff (types examined) is exactly similar to African specimens of this species.

The pale *C. europæus unwini*, as before mentioned, is not rare in several parts of Turkestan. The *C. e. pallidus*, Severtz., is the same as *C. e. unwini*, but among Severtzoff's specimens is at least one that is intermediate between *C. e. unwini* and *C. e. plumipes*.

But these are not the only Caprimulgidæ which inhabit Turkestan, as I have before me two specimens from the St. Petersburg Museum that are undistinguishable from dark western specimens of *C. europæus*! I have, however, reason to believe that this latter is not resident in Turkestan, but only occurs there as a wanderer, perhaps from S.W. Siberia. In Siberia probably both *C. europæus* and *C. e. unwini* are found breeding, although, of course, not in the same localities, the former being most likely met with more to the north and in the forests. *C. e. unwini* seems to grade into



Maxwell Brown, del.

CAPRIMULGUS EXIMIUS.

J. C. Maxwell, del. and col.

C. e. plumipes, as a specimen from Chami in Mr. Seebohm's collection somewhat points to the latter. More material is wanted in order to determine the areas of the several forms of *Caprimulgus* in Central and Northern Asia.

(2) *CAPRIMULGUS LENTIGINOSUS*, Smith.

When I wrote the 'Catalogue of the Birds in the Senckenberg Museum at Frankfort,' I believed *Caprimulgus tristigma*, Rüpp., to be a distinct species, and expressed my opinion to that effect in a footnote on page 120. But I had no specimen of the South-African *C. lentiginosus* to compare with it at the time, and judged only from the descriptions of the latter. After comparing Rüppell's type with the specimens of *C. lentiginosus* from South Africa in the British Museum, there can be no doubt that they are identical. The wings of the specimens in the British Museum vary from 7·2 to 7·6 inches, that of the type of Rüppell's *C. tristigma* measures 7·5 inches. The white spots on the primaries vary in size, and sometimes disappear on the third primary. Some specimens have large white spots on the outer rectrices, others are without them, the latter probably being the females.

(3) *CAPRIMULGUS EXIMIUS*. (Plate VI.)

Plate VI. represents one of the most beautiful species of the genus *Caprimulgus*, the rare and very little known *C. eximius*. The figure is taken from a typical specimen in the Frankfort Museum. Three specimens were brought home by the earliest ornithological explorer of Abyssinia, Rüppell. The species has been described and very badly figured in Temminck's 'Planches Coloriées.' There, and in Rüppell's 'Systematische Uebersicht,' *Sennaar* is given as its habitat. Absolutely nothing is known about the exact locality and the habits of this species. Herr Erckel, Rüppell's collector during his second voyage, has kindly informed me that the specimens were killed in 1823 or 1824 by Hey, Rüppell's collector during his first voyage, probably near the Bahr el Abiad, in Upper Nubia. There can be no doubt that this is a bird which inhabits desert or desert-like countries, for its colour is a beautiful adaptation to the yellow sands of the desert.

The species has never been procured since. Two specimens are at the Frankfort Museum and one at Leyden.

(4) *CAPRIMULGUS ASIATICUS*, Lath.

There is a very large series of this species in the British Museum: I have seen many more, and I brought several with me from India. Very exact descriptions of it are given in Legge's 'Birds of Ceylon.' This author states that the female has the spots on the 2nd, 3rd, and 4th quills buff, *in some examples wanting altogether*. Unless a great many specimens collected by the most reliable collectors are wrongly sexed, which cannot be supposed, this statement is not quite correct. I cannot distinguish the sexes in quite adult examples, and I have never seen a specimen without any spots on the quills. The white terminal patches to the outer tail-feathers vary in extent and are often not pure white; but this does not seem to be a sign of immaturity, nor is it peculiar to the male; to judge from the material that I have been able to examine, it is merely individual variation. Specimens from drier and more sandy districts are much paler and more isabelline than those from wooded countries; but it is not possible to separate these local forms. Oates (B. Burm. ii. p. 18) has suggested that *C. tamaricis* might be identical with *C. asiaticus*; but this is not the case. *C. tamaricis* of Tristram is identical with *C. nubicus*, Licht., and *C. infuscatus* of Rüppell, as has been already stated by Blanford in the 'Geology and Zoology of Abyssinia,' p. 336. This I have been able to verify by examining the types of these authors.

(5) *CAPRIMULGUS AFFINIS*, Horsf.

It has been admitted (*cf.* Salvadori, Ucc. Borneo, p. 116) that *C. affinis* occurs in Java, Sumatra, Borneo, Timor, and Lombock. A careful comparison of specimens from all the above-named localities has convinced me that they really belong to one species. But considerable doubts have existed as to whether *C. arundinaceus*, Jacq. & Pucher. (Voy. Pôle Sud, Ois. p. 93), the "Engoulevent des Roseaux" of Hombron and Jacquinot (figured pl. 21. fig. 2), is a distinct species. I

have not been able to examine the type in the Paris Museum, but the figure splendidly represents a female of *C. affinis*. It is true that the white patch on the throat seems to be extended too far in the middle, but this often occurs in skins if the feathers are a little displaced. It is also to be noted that Motley procured *C. affinis* at Banjermassing, the locality whence the type of *C. arundinaceus* came. Two very closely allied forms are seldom found in the same district.

Recently Dr. A. B. Meyer (Sitzungsber. u. Abhandl. Ges. Isis, 1884) has described as a new species *C. faberi* from West Sumatra. The author admits that his *C. faberi* closely resembles the figure of *C. arundinaceus*, but proceeds to point out some differences. These differences, however, cannot serve to distinguish the Sumatran form specifically. First, regarding the habitat: this has little value, since I find that a specimen from Sumatra is undistinguishable from *C. affinis* from other localities. The darker coloration of the upper surface in the supposed new species (*C. faberi*) is of no consequence, since rather dark and rather pale specimens occur in the same localities, as the series in the British Museum and several other specimens which I have seen clearly show. The lower abdomen and under tail-coverts in *C. affinis* are always uniform, the bands on the inner webs of the outer tail-feathers being occasionally absent on the inner margin in females from several localities (Lombok, Celebes). The minute and careful description of *C. faberi* clearly indicates that it is a female. The greatest value seems to be attached to the presence of wing-patches. I must, however, remark that several females before me have no spot on the outer web of the second primary, while others from the same locality have it well developed. Therefore there is no doubt in my mind that *C. arundinaceus* and *C. faberi* both belong to *C. affinis*.

(6) *CAPRIMULGUS ALBONOTATUS* and *C. MACRURUS*.

The close resemblance of *C. macrurus* to *C. albonotatus* has already been mentioned by A. O. Hume and E. W. Oates (B. Burmah, ii, p. 20). The latter has made the following

remarks :—"The 'Large Bengal Nightjar' is very similar to the 'Malay Nightjar,' and is liable to be confounded with it. The two species, in fact, grade into each other with respect to size, and had I more birds available for examination I should probably be led to unite them." If one compares a real *C. macrurus* from Malacca, Sumatra, or Java with specimens of *C. albonotatus* from N.W. India, he is easily convinced that they are two totally different species. But comparing a series of several dozens of each from the above-named localities he will make the remark that they vary much in colour; and on comparing a good series of birds from Tenasserim, Burmah, and Assam he will see that in the latter localities many intermediate phases occur, so that *it is impossible to draw an exact line between the two forms*. Still the extremes are very different, and therefore I am not prepared to follow one of the two ways which are the only possible ones, as Mr. Hume thinks ('Stray Feathers,' 1878, ii. p. 257, note), and which also Mr. Oates seems to regard as the only possible ones, *i. e.* either to unite them under one name or to keep them up as two different species, but I shall treat them as subspecifically distinct. If I were to unite them under one specific name, no doubt many subsequent writers would correct me and point out the differences between the two forms; and if I separated them specifically I should probably be corrected by those who have the opportunity of comparing very large series from different countries and seeing how they run into each other. In treating *C. albonotatus* as a subspecies of *C. macrurus*, I believe that I do full justice to the fact that there are two forms which, in a large area, where their habitats come together, form intermediate links, and cannot therefore be regarded as "good" species. Not only are the Australian specimens, as Oates justly mentions, very small, but all those from the islands (Java, New Britain, Aru Islands, &c.) are as small as those from Australia. I shall therefore call the southern form *C. macrurus*, Horsf., and the Indian race *C. macrurus albonotatus* (Tick.).

Specimens of *C. macrurus* from North Borneo are very

dark and small, and in the skins in the British Museum the narrow line running along the gape, which is more or less buffish in typical *C. macrurus*, is somewhat obvious and whitish. On account of these facts the bird inhabiting North Borneo was distinguished by Dr. Bowdler Sharpe under the name of *C. salvadorii*. Afterwards, when Mr. Everett had sent more specimens, Dr. Sharpe admitted the close resemblance of his *C. salvadorii* to *C. macrurus*, and now that more materials are available I believe that he does not insist on its specific distinctness. Comparing the series of specimens from North Borneo with the very large series of *C. macrurus* from other localities, I find it impossible to separate them. Specimens from Waigiou and Aru are perfectly similar to those from North Borneo; they belong to the very dark blackish island-form.

Again, specimens from the foot of the Himalayas, especially those from Nepal, differ from typical *C. albonotatus* from the plains in their brighter colours and more frequent dark markings, but are not so dark as *C. macrurus*. This may be due to the different and more covered soil rather than to the climate. They might, without much objection, be separated as a subspecies—*C. nipalensis*, Hodgs. (nom. nud.), but nothing can be gained by distinguishing such slightly differentiated and restricted forms. Indeed, this form from the mountains may be regarded as intermediate between the true *C. albonotatus* and *C. macrurus*.

(7) *CAPRIMULGUS INDICUS* and *C. JOTAKA*.

Mr. Hume, in several places in 'Stray Feathers,' has pointed out that the so-called *C. indicus* and *C. jotaka* are closely allied, and that almost all the distinguishing characters fail if large series are compared. He has therefore admitted ('Stray Feathers,' 1878, i. pp. 56, 57) that he was unable to discover an absolute distinction between the two, and that they might be merely races of one species. In vol. xi. of 'Stray Feathers,' however, he says that he believes that their notes are different. Oates, in vol. ii. of the 'Birds of British Burmah,' p. 21, also gives evidence of the close

affinity of the supposed species, but states that the size is different, and that the white on the tail-feathers in the male is terminal in *C. indicus*, but subterminal in *C. jotaka*, and that the females can only be separated by size. The character of the white spots to the tail-feathers being terminal or subterminal fails entirely on examination of the series now in the British Museum. As regards size, it is quite obvious that specimens from Japan and the Himalayas are very much larger than those from South India and Ceylon, the latter also being less rufous and very greyish. From what I had seen before I never thought it probable that these forms would run into each other; but after studying the grand series now before me I must confess that intermediate stages are common in India, and that therefore the large bird and the small are merely forms of one widely spread species, the smaller one being worthy of subspecific rank.

As regards the name *C. indicus*, Lath., there is no doubt that in 'Jerd. Ill. Ind. Orn.' it is first used for one of these forms; but it is not possible to decide whether Latham's bird was the large form from the Himalayas or the smaller, because Lady Impey, from whom he got the bird, had many forms from the Himalayas (such as *Lophophorus impeyanus*, among others), while others were apparently from the plains. The next oldest name is *C. cinerascens* of Vieillot. Vieillot only gives India as the habitat, and his description is not sufficient to decide which form he meant, although he probably intended the smaller one. Hodgson's name, *C. saturator*, no doubt applies to the Nepal bird, but it is a *nomen nudum*. The first name published with description and plates of both sexes, and about which there can be no doubt whatever that it refers to the large form, is *C. jotaka*, Temm. et Schleg. (Faun. Jap., Aves, p. 37, pls. 41, 42), and the first name referring to the smaller form from Ceylon is *C. kelaarti*. I therefore think it most convenient, and also right, according to the rules of nomenclature, to adopt as the specific name of this bird *C. jotaka*, and to regard the South-Indian small and grey form as a subspecies of it, which I shall call *C. jotaka kelaarti*. The name *C. indicus* should be dropped

altogether ; it possibly refers to some of the intermediate forms, but the description is so meagre that this is merely a probability. *C. jotaka* ranges from Eastern Siberia through Japan, China, Cochin China, Burmah, and along the Himalayas ; it becomes smaller and paler in India, smallest in the south of the Indian peninsula and in Ceylon, where it becomes typical *C. kelaarti*. The forms between the large and dark *C. jotaka* and the small and pale *C. kelaarti* cannot be distinguished, there being no permanent form between them, but an unbroken series of connecting links. The extreme forms, however, are very different, and therefore must be subspecifically distinguished. Stragglers or regular migrants occur very far south in the Malayan and Papuan Islands. The specimen from Penang mentioned by Salvadori (Orn. Papuasia, i. p. 531), and noted on the label as being compared and found identical with the type of *C. melanopogon*, is a specimen of *C. jotaka* of the larger and darker form. It was probably a wanderer from Burmah. Therefore *C. melanopogon* is a synonym of *C. jotaka*.

(8) CAPRIMULGUS CONCRETUS.

Dr. Bowdler Sharpe (P. Z. S. 1875, pp. 100, 101) has already shown that *C. borneensis* is identical with *C. concretus*. Some specimens are without the large white spots on the outer rectrices, and as they are apparently adult individuals there is hardly any doubt that they are females, though, unfortunately, they are not sexed. In its coloration this Goatsucker very much resembles the smaller species of *Lyncornis*, and therefore G. R. Gray, in his 'Hand-list,' placed it in the genus *Lyncornis* ; but a close examination shows that it is not a *Lyncornis*. In fact it is inseparable from *Caprimulgus*, though it must be admitted that the toes are rather short and powerful. This character does not seem to be sufficient to establish a new genus, but, at the same time, fresh specimens of this species require to be studied.

(9) Genus ANTROSTOMUS.

I have not been able to find a satisfactory generic distinc-

tion between the American species generally placed in the genus *Antrostomus* and the species of *Caprimulgus* from Europe, Asia, Africa, Australia, and Madagascar. This statement is not surprising, nor is it new, as several good ornithologists—Sclater, Baird, Lawrence, and Ridgway, among others—have remarked the same before; but, in spite of their own acknowledgments, most of these authors have continued to use the name *Antrostomus*. There is, however, no reason to retain the name for a genus which has no value whatever.

Caprimulgus carolinensis, the type of the genus *Antrostomus*, has, singularly enough, lateral filaments to the rectal bristles, but in every other respect it is so entirely similar to *Caprimulgus rufus* and other forms that it would be absurd to separate it generically from them on account of these small filaments.

(10) *CAPRIMULGUS MACROMYSTAX*, Wagl.

When I began to work on the American Caprimulgidæ in the British Museum, Mr. Salvin called my special attention to *Caprimulgus macromystax*, poorly described in the 'Isis' from a tailless specimen in the Munich Museum. From various notes by Slater and Salvin, and from the descriptions in Baird, Brewer, and Ridgway's 'North-American Birds,' and Ridgway's 'Manual N. A. B.,' it appeared to me that the form called *Antrostomus macromystax* by the American authors was probably not the same as that so called by English ornithologists. Professor R. Hertwig has been kind enough to lend me the type of *C. macromystax*, and this has enabled me (although the specimen is in poor condition) to ascertain easily enough that the specimens in the British Museum are correctly named, and further that they are identical with *Antrostomus vociferus arizonæ* of Brewster. The latter is well described in the 'Auk,' and is a very recognizable subspecies, although connected with *Caprimulgus vociferus* by intermediate forms. It must be called *Caprimulgus vociferus macromystax* (Wagl.) if trinomials are used.

The *Antrostomus macromystax*, Baird, Ridgway, &c. (nec

Wagl., ScL., &c.), is quite different, and at once distinguished from *C. vociferus* and its forms by the shape of the silky white tips to the outer rectrices, which are similar to those in *Caprimulgus sericeocaudatus*, a very distinct form from South America. As it has no name I propose to call it *Caprimulgus salvini*.

(11) Genus HYDROPSALIS.

The group of Goatsuckers with elongated tail-feathers show great variety in the form of the rectrices, which is different in almost every species. Some species have the outer rectrices extremely elongated, others the central and lateral rectrices moderately elongated, others, again, the central rectrices moderately elongated and the lateral much elongated, while in the African *Scotornis* only the central rectrices are elongated. If the American species of this group are associated in one genus, there remains no reason whatever to distinguish the African *Scotornis* generically. But probably it would not meet with general agreement among the authorities on African ornithology if *Scotornis* were united with the American *Hydropsalis*. Therefore I believe it will be more convenient to divide these birds into three groups, which are easily recognizable as follows:—

I. Lateral rectrices extremely elongated, the rectrices becoming gradually shorter to the middle, the central ones shortest; upper tail-coverts short. This is *Macropsalis*, and contains *M. lyra*, *M. forcipata*, and *M. segmentata*.

II. Lateral and central rectrices elongated; lowest upper tail-coverts elongated. This is *Hydropsalis*, and contains *H. climacocercus*, *H. torquata*, *H. schomburgki*, and *H. furcifera*.

III. Central rectrices only elongated, rectrices becoming gradually shorter to the sides, lateral ones shortest; central upper tail-coverts somewhat elongated. This is the African *Scotornis*.

(12) Genus SCOTORNIS.

The chief character given by Swainson (B. W. Afr. ii. p. 68) for his genus *Scotornis*, the variation in length of the

outer and inner toes, is absolutely worthless, as may be seen by comparing a *Scotornis* with a species of the genus *Caprimulgus*. But fortunately the shape of the tail in the type of *Scotornis* is so different, and so easy to describe and to recognize, that it may be wise to retain the genus *Scotornis*, for it is very convenient to isolate some of the numerous Goatsuckers which inhabit the Old World.

In my opinion there is only one species of *Scotornis*. The *Scotornis nigricans* of Salvadori is certainly very different in colour from the common phase of the West-African *Scotornis*, and at first sight seems to be founded on good grounds. But after a rather large number of specimens from different localities have been compared, it becomes obvious that *Scotornis* varies considerably in coloration, and that if *S. nigricans* is admitted there should, with almost equal right, be created a "*S. rufescens*" from the Niam-Niam country, a "*S. pallida*" from Khartoom, Accra, and other localities, and perhaps others. All the characters, such, for instance, as the differently barred tail of *S. nigricans* (which Dr. Finsch considers to be so important), will be found to have absolutely no value after a close comparison of a large series, and there remains nothing but the darker colour, which cannot be regarded as important in such variable birds. Should a certain country produce such dark forms only, then it would be probably an adaptation to the darker colour of the soil, and might be considered a subspecific form; but this does not seem to be the case. I therefore admit only one species of *Scotornis*.

XXII.—Remarks on *Lanius lahtora* and its Allies.

By H. E. DRESSER, F.L.S., F.Z.S.

In collecting materials for my Appendix to the 'Birds of Europe,' I have lately been busily employed in a careful re-examination of examples of *Lanius lahtora* and its allies. It may be of interest to ornithologists if I report progress and give them the results of my investigation.

In 1870 (P. Z. S. 1870, pp. 596-598) and in 1872 (in the 'Birds of Europe'), Dr. R. Bowdler Sharpe and I united under *Lanius lahtora* all the species which have been subsequently differentiated by Dr. Hans Gadow (Brit. Mus. Cat. B. viii. pp. 247-252, 1883) under the names of *Lanius lahtora*, *L. fallax*, *L. assimilis*, *L. hemileucurus*, *L. dealbatus*, and *L. elegans*, and I can only say that, after a careful examination of a very large series and a study of what has since been written on the subject, I have come to the conclusion that we were much more justified in lumping all these together than we should have been had we accepted the nearly endless subdivisions that are now so much in vogue. At the same time there are several local forms or subspecies of this bird which it may be advisable to recognize as such, in order to indicate the distinctions, slight as they are; besides which, I think that the eastern and western forms may well be kept apart. Mr. Oates has pointed out (B. of Brit. Ind. i. p. 458) a distinction which had escaped us, and which, though scarcely constant, is of considerable value in distinguishing *Lanius lahtora* of India from the western form. This is the colour of the lesser wing-coverts, which in *Lanius lahtora* is either black or black with slight grey edgings, whereas in the western form the lesser wing-coverts are either entirely grey or grey with a little black at the base of the feathers. Also, as a rule, typical *Lanius lahtora* has the black frontal band much broader than in the western form; but this character is of little value, as I have at present before me specimens from India which have scarcely any trace of this black frontal band, and others from North Africa in which this band is very well developed. Mr. Oates separates *Lanius lahtora* into three species (or subspecies), viz. *Lanius lahtora*, *L. assimilis*, and *L. fallax*. To this, on the whole, I agree; but it appears to me that *L. assimilis* should bear Swainson's name, *L. elegans*, as there is no doubt that Swainson's type is conspecific with the form described by Oates as *L. assimilis*. This I have ascertained by a careful comparison of it with a specimen in my collection from Transcaspia.

In Europe north of the Mediterranean the only Shrike

belonging to the present group to be met with is *Lanius meridionalis*, which is easily distinguishable from its allies by its dark upper parts, white superciliaries, vinous underparts, dark grey and black lesser wing-coverts, and by having the inner web of the secondaries blackish, slightly margined with dirty white. This species inhabits only the Iberian peninsula and the south of France. In Morocco, Algeria, and Tunis *L. meridionalis* is replaced by *Lanius algeriensis*, which differs only in having the underparts dark grey instead of vinous, and in lacking the white superciliary stripe.

Throughout the whole of North Africa, from Algeria to the White Nile, *Lanius elegans* occurs, and its range extends eastwards far into Asia, according to Dr. Gadow as far as the Amoor, but I have not met with specimens from districts so far east as that. This form, like *Lanius lahtora*, is subject to considerable individual variation in the amount of white in the plumage, and has on these grounds been split up into several species—*Lanius assimilis*, *L. hemileucurus*, *L. dealbatus*, and *L. elegans*. But after a most careful examination of all the specimens in the British Museum and in my own collection, I cannot find any valid reason for according even subspecific rank to any of them. I have in my own collection specimens from North-western Africa which agree closely with all these supposed species. To one of these specimens from Algeria Dr. Gadow refers (Cat. of B. Brit. Mus. viii. p. 251) as being a typical *L. elegans*, and on again comparing the two specimens I fully agree with Dr. Gadow on this point. Another old bird from Algeria is, I find, in every respect similar to the specimen figured by Dr. Gadow (*op. cit.* pl. vi.) as *Lanius dealbatus*.

Another form, which inhabits North-eastern Africa, is *Lanius fallax*, which is a much darker bird than *Lanius elegans*, has the underparts tinged with grey, the lesser wing-coverts more intermixed with black, and the inner webs of the secondaries much blacker. The western range of this form is, so far as we at present know, as follows:—There is no instance of its occurrence in Africa west of the Nile, but, as I have ascertained from a comparison of eight specimens

from the Canaries in Canon Tristram's and my own collections with the specimens of *Lanius fallax* in the British Museum, this form is the "Grey Shrike" which inhabits the Canaries, and which has been referred to by authors on the ornithology of those islands as a pale form of *Lanius algeriensis*. One specimen from Fuerteventura is absolutely identical in every respect with the type of *Lanius fallax*, except that it has a somewhat shorter wing, as I have ascertained by careful comparison. *Lanius fallax* is also found in Palestine, and, according to Mr. Oates, in Mesopotamia, Muscat, and Afghanistan. He also refers to the same form a specimen procured by Mr. Blanford in Baluchistan, and another obtained by Lieut. Burgess, probably in the Deccan.

Lanius fallax, like the other allied forms, is subject to a considerable amount of variation, both as to tint of colour on the upper and under parts, and also as to the amount of grey on the lesser wing-coverts. Some specimens from the Canaries are lighter and others darker; some have the lesser wing-coverts almost entirely grey, whereas others (especially one, a female, from Guia, Teneriffe, in Canon Tristram's collection) have them black, with very slight grey tips. All, however, differ from *L. algeriensis*, not only in having the upper and under parts much paler, but also in having a narrow white superciliary stripe, and in having the chin and throat white, and not grey. Specimens from Abyssinia vary somewhat, though scarcely so much as those from the Canaries, and one from Muscat in the British Museum has the lesser wing-coverts entirely grey. Specimens from the Canaries have a shorter wing than those from other localities, the length averaging only about 3.85 to 3.9 inches. *Lanius uncinatus*, from Socotra, is at best a very doubtful species, differing from typical *L. fallax* merely in having a somewhat stouter and more hooked bill; but there are a good many intermediate specimens, and I have no hesitation in uniting this form with *L. fallax*.

Specimens of *Lanius fallax* from Palestine agree closely with dark examples from the Canaries and with Abyssinian specimens, but as a rule they have more black and less grey

on the lesser wing-coverts, and in that respect approach more nearly to *Lanius lahtora*, from which, however, this species is distinguishable by its darker colour, grey underparts, and darker inner webs to the secondaries. Of *Lanius grimmi* I have not been able to examine sufficient specimens to hazard an opinion as to its being a good species, but it appears to me to be a pale isabelline form of *Lanius lahtora*, just as *Lanius mollis* is of *Lanius excubitor*.

In the present paper I have not mentioned the American small Grey Shrike (*Lanius ludovicianus*), as I have taken only those inhabiting the Palæarctic Region into consideration, nor have I included *Lanius excubitor* and its allies, as I propose to treat of them on a future occasion. But I may here remark that, as pointed out by Dr. Sharpe and myself (*l. c.*), *Lanius lahtora* and its allies may readily be distinguished from *Lanius excubitor* by the thick rough leg, as well as by the somewhat smaller size.

It is, in the case of such very closely allied forms, by no means easy to give a reliable key by which they may be readily distinguished, but the following attempt will, I think, be found useful for that purpose:—

- A. Lesser wing-coverts black, or black slightly tipped with grey; upper parts pale grey, underparts white; the alar patch moderately large; black frontal band, as a rule, clearly defined; secondaries with the inner webs chiefly white: culm. 0·8 to 0·85, wing 4·1 to 4·3, tail 4·4 to 4·7, tarsus 1·15 to 1·25 inch . (1) *L. lahtora*.
- B. Lesser wing-coverts chiefly grey, or grey and black intermixed:
 - a. Upper parts very dark grey; underparts grey; no white superciliary stripe; a narrow black frontal line; alar patch very small; inner webs of secondaries blackish, narrowly margined and tipped with white: culm. 0·8 to 0·9, wing 4·1 to 4·25, tail 4·4 to 4·6, tarsus 1·2 to 1·25 inch (2) *L. algeriensis*.
 - b. Upper parts very dark grey, underparts vinous; a distinct white superciliary stripe; no frontal black band; alar patch

very small; the inner webs of the secondaries blackish, narrowly margined and tipped with dull white: culm. 0·8 to 0·9, wing 4·2 to 4·4, tail 4·6 to 5·0, tarsus 1·15 to 1·2 inch

(3) *L. meridionalis*.

c. Upper parts rather dark grey, but much paler than in *L. algeriensis*; underparts white, washed with grey; a somewhat indistinct white superciliary stripe; black frontal line very narrow or obsolete; alar patch usually rather small; inner webs of the secondaries chiefly blackish: culm. 0·75 to 0·9, wing 3·8 to 4·3, tail 4·1 to 4·3, tarsus 1·15 to 1·25 inch

(4) *L. fallax*.

C. Lesser wing-coverts entirely grey; upper parts pale grey, underparts white; alar patch usually large; frontal band usually very narrow or absent; secondaries with the inner webs chiefly white: culm. 0·73 to 0·8, wing 4·1 to 4·3, tail 4·0 to 4·5, tarsus 1·12 to 1·25 inch

(5) *L. elegans*.

XXIII.—On two small Collections of Birds from Bugotu and Florida, two of the smaller Solomon Islands. By H. B. TRISTRAM, D.D., F.R.S.

DURING the course of last year I received from my friend Dr. P. H. Metcalfe, of Norfolk Island, two small but very interesting collections of birds which had been made for me by two gentlemen of the Melanesian Mission during their visits to two of the smaller islands of the Solomon group—Bugotu and Florida.

Bugotu is a small island lying a little to the south of Ysabel, and Florida is in the channel between Guadalcanar and Malayta. The avifauna of both of them would naturally be closely allied to that of Ysabel; but, as the list shows, there are several species in the series which have not been as yet reported from Ysabel, and three forms in Bugotu which do not appear to have been previously described.

For the collection from Bugotu I am indebted to the

zeal and kindness of Dr. Welchman; for that from Florida to the kind efforts of the Rev. J. H. Plant, M.A. All Dr. Welchman's birds are skinned and the sexes are marked. The smaller birds from Mr. Plant were received in spirits. I subjoin a list of both collections. To all the specimens the native names were attached.

I. *Birds from Bugotu, collected by Dr. Welchman.*

1. *GRAUCALUS ELEGANS*, Rams.

♂. Native name *Usi*. Originally described by Mr. Ramsay from Guadalcanar.

2. *GRAUCALUS NIGRIFRONS*, sp. nov.

♂. Griseo-cærulescenti-plumbeus, loris et fronte nigris; alis nigris, primariis exterius stricte, secundariis late, tertiariis latius cærulescenti-plumbeo marginatis; subalaribus et axillaribus fasciis schistaceis et albis transversim striatis; rectricibus supra omnino nigris, subtus schistaceis.

Long. tot. 9.1 poll. Angl., alæ 5.2, caudæ 4.6, tarsi 0.85, rostri a rictu 0.75.

Hab. Bugotu, Inss. Salomonis.

♂. Native name *Usi-ravu*.

This species is very closely allied to *G. axillaris*, Salvad., and to *G. pusillus*, Rams. From the latter it may be distinguished by its larger dimensions and by the axillary barring being ashy grey instead of black. From the former, found on Mount Arfak, New Guinea, it is separable by its much paler colour, its much shorter and broader bill, and the lighter colour of its axillary striation. From both its congeners it may be known by the pure black on the median rectrices without any tinge of ashy or grey.

3. *GRAUCALUS [ARTAMIDES] WELCHMANI*, sp. nov.

♂. Saturate plumbeus, loris nigris; subalaribus concoloribus; remigibus nigris, inferius canescentibus; cauda nigra.

Long. tot. 12.9 poll. Angl., alæ 7.0, caudæ 6.0, tarsi 1.0, rostri a rictu 1.3, rostri alt. 0.62.

Hab. Bugotu, Inss. Salomonis.

♂ & pull. Native name *Pukusui*.

This species is very near *G. caledonicus*, but is smaller in all

the measurements except the tarsus, while the beak is more massive than in any other species of the group. The nestling is extremely interesting, the whole plumage being uniformly striated transversely with white and black from the beak to the tail; the remiges black, with white edgings and tips; and the black stripes on the breast and abdomen being more sparse than on the back.

4. *PACHYCEPHALA ASTROLABI*, Hombr. & Jacq.

Native name *Kuajo*. One male specimen. I have previously received this species both from San Cristoval and from Russell Island.

5. *POMAREA CASTANEIVENTRIS*, Verr.

Native name *Sesese*. Two specimens, male and female. I have also received examples of this species from Guadalcanar. It is represented by a nearly allied form in San Cristoval.

6. *RHIPIDURA RUBRO-FRONTATA*, Rams.

Native name *Pia pilau-na-gari*. One female specimen. Mr. Ramsay's type was from Guadalcanar. Mr. Ramsay remarks (Proc. Linn. Soc. N. S. W. vi. p. 178) that it is undoubtedly the same as my *R. russata*. In this he is in error, not having seen *R. russata*. It is impossible to confound the two birds when seen together. *R. russata* is from the western island of San Cristoval.

7. *MYIAGRA FERROCYANEA*, Rams.

Native name *Biubirukoilo*. One female specimen. The type was from Guadalcanar.

8. *MYZOMELA LAFARGII*, Hombr. & Jacq.

Native name *Bibiruniu*. One male specimen. This is a bird of extreme interest. It was originally described in the 'Voyage au Pôle Sud,' published in 1853, and recorded as having been obtained in the Solomon Islands, without any further statement of the exact locality. The solitary type-specimen in the Paris Museum has remained for nearly forty years unique, until this second has at last been obtained in Bugotu. The criticism by M. Oustalet of the plate in the

'Voy. Pôle Sud,' sent to Mr. W. A. Forbes (cf. P. Z. S. 1879, p. 265), is exactly borne out by my specimen.

9. *CALORNIS METALLICA* (Temm.).

Native name *Gothe*. Several specimens.

10. *PODARGUS OCELLATUS*, Quoy & Gaim.

Native name *Bauroo*. One male specimen. This species, originally described in the 'Voy. de l'Astrolabe' from Dorey, has since been found in all parts of New Guinea, in Aru, and in Waigiou. But this is the first time it has been recorded so far to the east.

11. *COLLOCALIA ESCULENTA* (L.).

Native name *Pupuri*. Two specimens, male and female. I name these on the authority of Herr Hartert, who has recently studied the group.

12. *HALCYON SAUROPHAGA*, Gld.

Native name *Gio-gio*. ♂ & pull. The nestling has none of the feathers yet out of the sheath; all show white only.

13. *GEOFFROYUS HETEROCLITUS* (Hombr. & Jacq.).

Native name *Kiekigne*. One female adult. The type was from the island of Ysabel.

14. *NASITERNA NANINA*, Tristr.

Native name *Guigulitauna*. One female, which I described, Ibis, 1891, p. 608. The only other species of *Nasiterna* reported from the Solomon Isles are:—(1) *N. pusio*, Sclat. (P. Z. S. 1865, p. 620), sent by Dr. Krefft, but without stating from which island it was procured. It has, however, since been frequently received from New Britain and Duke of York Island; and both Dr. Sclater and Count Salvadori are satisfied that these islands, and not the Solomons, are its true habitat (Salvad. Aggiunte alla Orn. Papuas. p. 29; Sclater, P. Z. S. 1883, p. 347). (2) *N. finschi*, Rams. (Proc. Linn. Soc. N.S.W. vi. p. 180), described, like the present, from a female, nor does it satisfactorily appear from Mr. Ramsay's remarks (*op. cit.* p. 720) that he has subsequently obtained the male, which is still unknown to Count Salvadori. Five specimens of *N. finschi* have passed through my hands, but all were females.

But though generally similar in coloration, the remarkable discrepancy in size prevents the possibility of this species being confounded with *N. nanina*. (3) *N. aolæ*, Grant (P. Z. S. 1888, p. 189, pl. x.). This species from the island of Guadalcanar, though smaller than *N. finschi*, can be at once distinguished from *N. nanina* by the azure-blue cap on the top of the head in both sexes. Mr. Ramsay's species *N. mortonis*, from San Cristoval and Ugi (Pr. L. Soc. N. S. W. vi. p. 721; Salvadori, Aggiunte alla Orn. Papuas. p. 29), does not appear to be separable from *N. finschi* and is much larger than *N. nanina*. So far, then, as our present knowledge extends, we have one species (*N. finschi*) in San Cristoval, the south-westernmost of the Solomons, and in its little adjacent isle of Ugi; another species (*N. aolæ*) in the next island, Guadalcanar; and a third (*N. nanina*) in the islet of Bugotu and therefore probably in Ysabel.

15. *ASTUR WOODFORDI*, Sharpe.

Native name *Tuitui*. One male, in immature plumage. The type was from Aola, Guadalcanar. See P. Z. S. 1888, p. 183.

16. *ARDEA SACRA*, Gm.

Native name *Sou*. One nestling in black plumage.

17. *BUTORIDES JAVANICUS* (Horsf.).

Native name *Sologogo*. One male.

18. *CALONAS NICOBARICA* (L.).

Native name *Giano*. One female.

19. *MACROPYGIA AROSSIANA*, Tristr.

Native name *Manusigo*. One female. The type was from San Cristoval, and the same specimen served as the type of *M. rufo-castanea*, Rams.

II. *Birds from Florida Island, collected by
the Rev. J. H. Plant.*

1. *DICEUM AENEUM*, Pucher. & Jacq.

Native name *Pia Petaka Bognoro*. One male specimen. The type was from St. George's, Solomons. I had previously

received this bird from Florida, and Cockerell obtained it in Guadalcanar.

2. *POMAREA CASTANEIVENTRIS*, Verr.

Native name *Sesese*. Two specimens, not sexed.

3. *RHIPIDURA COCKERELLI* (Rams.).

Native name *Pia*. One specimen. The type was from Lango, Guadalcanar. I am not aware of this bird having been found elsewhere.

4. *MYZOMELA SHARPEI*, Grant.

One male specimen. The type, which I believe is the only specimen hitherto known, was from Aola, Guadalcanar. See P. Z. S. 1888, p. 197.

5. *CALORNIS METALLICA* (Temm.).

Native name *Gole*. Three specimens, two males, one female.

6. *MINO KREFFTI* (Sclat.).

Native name *Bilikokio*. One male. "Has a remarkably rich note" (*J. H. P.*). The type was from the Solomons; but the range of this species extends thence over New Britain, New Hanover, and New Ireland.

7. *HALIASTUR GIRRERENA* (Vieill. et Oud.).

Native name *Tava*. One specimen. "Sea and Land Hawk. Feeds on *bêche-de-mer* and octopi." (*J. H. P.*)

8. *BUTORIDES JAVANICUS* (Horsf.).

Native name *Teo*. One specimen.

9. *CARPOPHAGA PISTRINARIA*, Bp.

"Has no native name" (*J. H. P.*). One specimen. Has been procured from San Cristoval and Ugi.

10. *PTILOPUS LEWISI*, Rams.

Native name *Kavuku*. Three specimens, two males, one female. Described from Guadalcanar, and also received from Malayta and from Marran.

11. *ESACUS MAGNIROSTRIS* (Geoffr.).

Native name *Koekuli*. One specimen. "Lives chiefly on hermit-crabs, cracking the shell on a stone and apparently swallowing the crab whole" (*J. H. P.*).

Mr. Plant also encloses a single specimen (male) of *Myzomela pulcherrima*, Rams., from the main island of Santa Cruz. The type was received from Ugi.

XXIV.—On the Birds collected by Mr. F. J. Jackson, F.Z.S., during his recent Expedition to Uganda through the Territory of the Imperial British East-African Company. By R. BOWDLER SHARPE, LL.D., F.L.S., &c. With Notes by the Collector.—Part IV.*

(Plate VII.)

In this paper I conclude the enumeration of the *Passeres* and *Picariæ* of Mr. Jackson's collection.

Fam. PYCNONOTIDÆ.

146. *XENOCICHLA KIKUYUENSIS*.

Xenocichla kikuyuensis, Sharpe, Ibis, 1891, p. 118.

No. 32. Sotik, Aug. 29, 1889.

Fam. CAMPOPHAGIDÆ.

147. *GRAUCALUS PURUS*.

Graucalus purus, Sharpe, Ibis, 1891, p. 121.

No. 304. ♂. Mount Elgon, Feb. 24, 1890.—Iris dark brown, almost black; feet and bill black. In thick forest.

Nos. 317, 318. ♂ ♀. Mount Elgon, Feb. 25, 1890.

The *Cebilepyris cæsia* of Salvadori's paper on the Shoa collection is most likely the same as the Elgon bird, although the Count did not think that his single specimen, a female, differed from South-African examples (*cf.* *Salvad. Ann. Mus. Genov.* [2] vi. p. 531, 1888).

* For Part III., see pp. 152-164.

Fam. MUSCICAPIDÆ.

148. *ALSEONAX MURINA*.

Alseonax minima (nec Heugl.), Shelley, P. Z. S. 1885, p. 225 (Kilimanjaro).

Alseonax murina, Fischer & Reichenow, J. f. O. 1884, p. 54 (Maeru Mts.); Fischer, Zeitschr. ges. Orn. i. p. 354 (1884; Great Aruscha).

No. 20. Sex? Sotik, Aug. 24, 1889.

No. 87. ♂. Sotik, Oct. 7, 1889.—Legs slate-colour; iris brown.

Compared with the type in the Berlin Museum and identified for me by Dr. Reichenow. I find on examining the specimens that they are identical to all appearance with the brown Flycatcher of Kilimanjaro, of which two very poorly prepared skins were sent to the Museum by Mr. H. H. Johnston. On looking over Heuglin's description of his *A. minima* I have come to the conclusion that Capt. Shelley was mistaken in regarding the Kilimanjaro birds as *A. minima* of Heuglin, for the latter is described as "suprà griseo-fuscescens," and the under wing-coverts as shaded with the same colour as the back. In *A. murina* the upper surface is dark chocolate-brown, and the under wing-coverts are tawny buff.

149. *DIOPTRORNIS FISCHERI*.

Dioptrornis fischeri, Fischer & Reichen. J. f. O. 1884, p. 53 (Maeru Mts.); Fischer, Zeitschr. ges. Orn. i. p. 355 (Great Aruscha); id. J. f. O. 1885, p. 128 (Naiwascha).

Muscicapa johnstoni, Shelley, P. Z. S. 1884, p. 555 (Kilimanjaro).

No. 10. ♂. Sotik, Oct. 5, 1889.

No. 38. ♂. Sotik, Sept. 4, 1889.—Bill horn-blue at base, black at tip; feet black; iris brown.

No. 240. Savé, Mt. Elgon, 6000 feet, Feb. 8, 1890.—Bill horn-blue, the lower mandible lighter; feet black; iris brown. Common.

These specimens have been compared by Dr. Reichenow and myself with the types of *Dioptrornis fischeri* and found to be

identical. They are also the *Muscicapa johnstoni* of Shelley, which name becomes a synonym of *D. fischeri*.

150. *PLATYSTIRA JACKSONI*. (Plate VII. fig. 2.)

Platystira jacksoni, Sharpe, Ibis, 1891, p. 445.

No. 85. ♀ ad. Sotik, Oct. 7, 1889.—Irides brown; shield above the eye bright orange-red; legs slate-colour.

This interesting new species resembles *Platystira cyanea*, but is easily distinguished by the entire absence of white on the wings. I add a detailed description of the type:—

Adult male. General colour above glossy blue-black; scapulars like the back, with concealed greyish white bases; lower back and rump ashy grey, washed with blue-black, with concealed greyish-white bases to the feathers on the sides of the rump; upper tail-coverts blue-black; lesser and median coverts like the back; greater coverts black, edged with blue-black; bastard-wing, primary-coverts, and quills black, with blue-black edges to the inner secondaries; tail-feathers black, glossed and edged with blue-black like the back; head and sides of face and sides of neck exactly like the back; cheeks and under surface of body white, with a blue-black band across the chest, the sides of the body ashy grey; thighs black. Total length 5·3 inches, culmen 0·65, wing 2·7, tail 2·05, tarsus 0·75.

From *P. peltata*, which the new species resembles in the absence of white on the wings, *P. jacksoni* may be easily distinguished by the indigo-blue (instead of green) shade of the upper parts.

151. *PACHYPRORA ORIENTALIS*.

? *Platystira senegalensis* (nec L.), Fischer, Zeitschr. i. p. 352 (1884; Pangani).

? *Batis senegalensis*, Fischer, J. f. O. 1885, p. 129 (Zanzibar: Bagamoyo; Mombasa: Malindi).

Batis orientalis, Salvad. Ann. Mus. Genov. (2) i. p. 125 (1884; Shoa), vi. p. 236 (1888).

Pachyprora orientalis, Shelley, Ibis, 1888, p. 298 (Manda Island).

No. 11. Ukambani.

152. *PACHYPRORA MOLITOR*.

Batis molitor (H. & K.); Sharpe, Cat. B. Brit. Mus. iv. p. 137.

No. 113. ♂. Machako's, March 27, 1889.

No. 229. ♀. Savé, Mount Elgon, 6000 feet, Feb. 6, 1890.

—Iris bright pea-green, fading into a yellow band round the pupil; feet and bill black. Plentiful.

No. 260. ♂. Savé, Feb. 13, 1890.—Plentiful from 6000 to 8000 feet.

No. 334. ♀. Kimangitchi, Feb. 26, 1890.

Compared with South-African specimens of *P. molitor*, those collected by Mr. Jackson are decidedly darker, smaller in size, and the females have not quite so much white at the end of the outer tail-feathers; but, as this seems to be a variable character, it would be rash to found a specific difference upon it.

153. *TARSIGER ORIENTALIS*.

Tarsiger orientalis, Fischer & Reichen. J. f. O. 1884, p. 57 (Pangani); Fischer, Zeitschr. ges. Orn. i. p. 306 (1884); id. J. f. O. 1885, p. 142; Shelley, P. Z. S. 1889, p. 361 (Kilimanjaro).

No. 16. ♀. Kikuyu.—Irides brown; bill horn-blue; feet pale horn-blue.

No. 30. ♀. Kikuyu, Aug. 29, 1889.—Irides brown; bill black; feet pale dusky.

Nos. 286, 287. ♂. Bamboo-forest on Mount Elgon, at 7000 feet, Feb. 21, 1890.—Iris brown; legs pale horn-blue.

With regard to the disputed position of the genus *Tarsiger* in the natural system, it should be noted that Mr. Jackson, in his diary, calls it a "Flycatcher."

154. *PARISOMA LUGENS*.

Sylvia lugens, Rüpp.; Heugl. Orn. N.O.-Afr. i. p. 311.

Parisoma lugens, Sharpe, Ibis, 1891, p. 443, note; cf. also Hartert, J. f. O. 1891, p. 305.

No. 309. ♂ ad. Mt. Elgon, Feb. 25, 1890.—Bill black; legs dull horn-blue; irides brown.



J. G. Keulemans del. et lith.

Mintern Bros. imp.

1. TROCHOCERCUS ALBONOTATUS.
2. PLATYSTIRA JACKSONI.

Herr Hartert, who happened to be in London when I was at work on the present collection, identified the above specimen with the *Sylvia lugens* of Rüppell, which he had left in the genus *Sylvia* in his recent 'Catalogue' of the Senckenberg Museum (No. 884), though he doubted whether this was the correct position of the species. He quite agreed with me that the bird is not a *Sylvia*, and at first sight it certainly looks like a species of the genus *Euprinodes*, but its large wings locate it in *Parisoma*, though whether the latter genus is rightly placed in the Muscicapidae or Sylviidae can be settled only when we know more of the economy of the genus. Mr. Jackson, in his diary, calls this bird a "Warbler."

I add a full description of the specimen in question:—

Adult male. General colour above dark chocolate-brown; the upper tail-coverts a little washed with ashy; wing-coverts brown like the back; bastard-wing and primary-coverts blackish brown; quills dusky brown, externally ashy brown, the second and third primaries fringed with white; tail-feathers blackish brown, all but the centre ones tipped with white, which increases in extent towards the outermost feather, which is entirely white along the outer web and at the tip of the inner one, leaving the shaft blackish; head like the back; lores dusky blackish; sides of face and ear-coverts light chocolate-brown, the cheeks and feathers below the eye hoary white, varied with small blackish spots; throat hoary white with a few black spots as on the cheeks; sides of neck chocolate-brown; fore neck, chest, and sides of body pale ashy brown, the flanks with a fulvescent tinge; breast and abdomen white; thighs ashy white; under tail-coverts pale fulvescent; under wing-coverts light fulvous, those near the edge of the wing white; quills below dusky, ashy along the inner edge. Total length 5·4 inches, culmen 0·5, wing 2·65, tail 2·35, tarsus 0·95.

155. *TROCHOCERCUS ALBONOTATUS*. (Plate VII. fig. 1.)

Trochocercus albonotatus, Sharpe, Ibis, 1891, p. 121.

No. 288. ♀ ad. Mount Elgon, Feb. 22, 1890.—First seen to-day in thick forest. Iris brown; bill black; legs horn-blue.

This species is quite distinct from *T. bivittatus* (Fischer & Reichen. Orn. Centralbl. 1879, p. 168), which is the only other species of *Trochocercus* known from East Africa.

156. *TERPSIPHONE CRISTATA*.

Terpsiphone cristata (Gm.); Sharpe, Cat. B. Brit. Mus. iv. p. 354; Salvad. Ann. Mus. Genov. (2) i. p. 124 (1884; Shoa), vi. p. 234 (1888); Shelley, Ibis, 1888, p. 292 (Taveta), p. 293 (Pangani); id. P. Z. S. 1889, p. 360.

Terpsiphone ferreti (Guér.); Fischer, Zeitschr. i. p. 353 (1884; Mañui, Nguruman, Great Aruscha); id. J. f. O. 1885, p. 129 (Zanzibar: coast from Bagamoyo to Lamu; Wapokomo-land); Reichen. J. f. O. 1887, p. 63 (Kagehi).
No. 29. ♂ ad. River Voi, Teita, Dec. 20, 1888.
No. 35. ♂ ad. On the march to Kikumbuliu, Dec. 26, 1888.

No. 132. ♂ ad. Turquel, Sük, Dec. 23, 1889.—Iris brown; legs slaty blue; eyelids slaty blue.

157. *ELMINIA TERESITA*.

Elminia teresita, Antin.; Sharpe, Cat. B. Brit. Mus. iv. p. 364; Shelley, P. Z. S. 1888, p. 27 (Wadelai).

No. 242. ♀. Savé, Mt. Elgon, 6000 feet, Feb. 10, 1890.—
"Blue Flycatcher." Iris brown; legs and bill black.
Scarce; only the second one seen.

Nos. 326–328. ♂ ♀. Kimangitchi, Feb. 27, 1890.

158. *CASSINIA SEMIPARTITA*.

Cassinia semipartita (Cass.); Sharpe, Cat. B. Brit. Mus. iv. p. 468.

Bradyornis semipartita, Reichen. J. f. O. 1887, p. 62 (Wembaere; Nassa).

No. 101. ♂. Kavirondo, Oct. 23, 1889.—Iris brown; legs dark olive. Two seen.

No. 139. ♂. Kavamoja, Sük, Dec. 26, 1889.—"Grey Flycatcher." First noticed in Lower Kavirondo. Always seen by itself in pairs in the wilderness amongst the acacia trees. Habits like those of a Common Flycatcher.

No. 151. ♀. Turquel, Jan. 3, 1890.

Fam. HIRUNDINIDÆ.

159. HIRUNDO ARCTICINCTA.

Hirundo arcticincta, Sharpe, Ibis, 1891, p. 119.

Nos. 291, 292. ♂ ♀. Mount Elgon, 7000 feet, Feb. 22, 1890.—Legs brown; irides brown. Found a colony breeding in a cave.

160. HIRUNDO SMITHII.

Hirundo filifera, Steph.; Fischer, J. f. O. 1885, p. 128 (Zanzibar Town; Lindi; Tschara; Wapokomo-land); Salvad. Ann. Mus. Genov. (2) i. p. 120 (1884; Shoa).

Hirundo smithii, Sharpe, Cat. B. Brit. Mus. x. p. 150 (1885); Salvad. Ann. Mus. Genov. (2) vi. p. 231 (1888); Emin, J. f. O. 1891, p. 59 (Ugogo).

No. 5. Kikuyu, Aug. 13, 1889.

161. HIRUNDO SENEGALENSIS.

Hirundo senegalensis, L.; Sharpe, Cat. B. Brit. Mus. x. p. 168 (1885); Salvad. Ann. Mus. Genov. (2) i. p. 120 (1884; Shoa), vi. p. 231 (1888); Reichen. J. f. O. 1887, p. 62 (Kawanga; Ussure; Usukuma).

Nos. 3, 4. ♂ ♀. Uganda, May 18, 1890.—Bill black; legs dark brown; iris brown. This pair was evidently about to breed, as one was carrying a feather in its bill. Plentiful in Uganda.

162. HIRUNDO MONTEIRI.

Hirundo monteiri, Hartl.; Sharpe, Cat. B. Brit. Mus. x. p. 169 (1885); Fischer, Zeitschr. i. p. 358 (1884; Komboko on Kilimanjaro); id. J. f. O. 1885, p. 128 (Bagamoyo; Pangani; Melindi; Tana River; Little Aruscha).

A single specimen was in Mr. Jackson's first collection from Teita, but it had no label indicating the exact locality.

163. COTILE MINOR.

Cotile minor, Cab.; Sharpe, Cat. B. Brit. Mus. x. p. 103 (1885); Salvad. Ann. Mus. Genov. (2) i. p. 122 (1884; Shoa), vi. p. 233 (1888).

No. 46. Naiwascha Lake, Sept. 10, 1889.—In small numbers by water. Irides brown.

I refer the single specimen of a Sand-Martin obtained by Mr. Jackson to the present species. It is too dark brown for *C. paludicola*, but it does not entirely agree with the specimens of *C. minor* in the British Museum, having none of the silvery grey appearance on the throat which I considered to be the character of the latter species. It is quite possible, however, that I may be mistaken, and that the grey shade is due to the abrasion of the plumage.

164. *COTILE RUFIGULA*.

Cotile rufigula, Fischer & Reichen. J. f. O. 1884, p. 53 (Naiwascha Lake); Fischer, Zeitschr. i. p. 358 (1884; Naiwascha); Salvad. Ann. Mus. Genov. (2) i. p. 122 (1884; Shoa), vi. pp. 233, 531 (1888); Sharpe, Cat. B. Brit. Mus. x. p. 107 (1885).

No. 173. ♂. Turquel, Sük, Jan. 15, 1890.—Iris brown; legs dusky. Saw several amongst the hills. Stomach contained small beetles.

Nos. 261, 262. ♂ ♀. Savé, Mt. Elgon, 6500 feet, Feb. 13, 1890.—“Crag-Martin.” Iris brown; legs pale flesh-colour; feet brown. This Martin was found in a small colony on a precipitous crag, where they evidently breed. I saw two or three nests fastened on to the face of the rock, like the nests of the Edible Swift.

No. 325. ♂. Mount Elgon, Feb. 25, 1890.—Iris brown; legs brown.

165. *PSALIDOPROCNE ALBICEPS*.

Psalidoprocne albiceps, Sharpe, Cat. B. Brit. Mus. x. p. 206 (1885); Reichen. J. f. O. 1887, p. 62 (Ugaia; Kawanga).

No. 62. ♂. Makarungu, Jan. 27, 1889.

No. 76. Jun. Makarungu, Feb. 17, 1889.

The young bird has the head blackish like the back, but interspersed with some white feathers.

Plentiful on the Ulu Mountains in Ukambani (cf. Jackson, Ibis, 1889, p. 584).

166. *PSALIDOPROCNE ORIENTALIS*.

Psalidoprocne petiti orientalis, Reichen. J. f. O. 1889, p. 277 (Usambara).

Psolidoprocne petiti (nec S. & B.) ; Shelley, P. Z. S. 1889, p. 359 (Taveta).

No. 28. ♂. Sotik, Aug. 29, 1889.

No. 267. ♂. Mount Elgon, Feb. 14, 1890.—Plentiful at 8000 feet.

Nos. 284, 290. ♂ ♀. Mount Elgon, 7000 feet, Feb. 20, 1890.—Bill black; feet brown; iris brown. Found a colony of these birds breeding inside a large cave. Nest made entirely of *Orchella*-weed, placed inside small recesses in the sides of the cave. Eggs two, pure white.

Although my friend Dr. Reichenow has considered this to be only an eastern race of *P. petiti*, I look upon it as quite a distinct bird and worthy of full specific rank. It is almost entirely *greenish black*, not *brown*, as is *P. petiti*, though it has light-coloured under wing-coverts, as in the latter species. This is doubtless the "smaller" black Swallow spoken of by my late friend Colonel Grant. (Cf. Sharpe, P. Z. S. 1870, p. 291.)

Mr. Hunter's specimen from Taveta (cf. Shelley, *l. s. c.*) is in worn and moulting plumage, and it was therefore not easy to determine the species to which it belongs. Having compared it with the examples of *P. orientalis* obtained by Mr. Jackson, I find that it is undoubtedly identical with them.

Order PICIFORMES.

Fam. PICIDÆ.

[N.B.—All the Woodpeckers have been identified for me by my friend Mr. E. Hargitt.]

167. CAMPOTHERA NUBICA.

Campothera nubica (Gm.) ; Hargitt, Cat. B. Brit. Mus. xviii. p. 93 ; Fischer, J. f. O. 1885, p. 126 (Kau ; Barawa ; Usaramo ; Pangani) ; Reichen. J. f. O. 1887, p. 60 (Irangi) ; Shelley, Ibis, 1888, p. 296 (Mashundwani) ; id. P. Z. S. 1889, p. 356 (Useri River) ; Emin, J. f. O. 1891, p. 59 (Ugogo).

Stictopicus nubicus, Salvad. Ann. Mus. Genov. (2) i. p. 88 (1884 ; Shoa), vi. p. 211 (1888).

No. 249. ♂. Savé, Mt. Elgon, 6000 feet, Feb. 11, 1890.—Irides dull crimson ; bill dusky slate-colour ; legs dull pea-green.

168. *THRIPIAS NAMAQUUS*.

Mesopicus namaquus, Fischer, Zeitschr. i. p. 368 (Little Aruscha); id. J. f. O. 1885, p. 125 (Muniuni; Nguru Mts.; Usegua).

Thripias namaquus, Hargitt, Cat. B. Brit. Mus. xviii. p. 306 (1890).

No. 60. Nzoni, Jan. 24, 1889.

169. *MESOPICUS GOERTAN*.

Mesopicus goertan (Gm.); Hargitt, Cat. B. Brit. Mus. xviii. p. 368 (1890).

No. 143. ♂. Turquel, Sük, Dec. 27, 1889.—Irides brown; legs and bill horn-blue.

170. *IYNX PECTORALIS*.

Iynx pectoralis, Vig.; Hargitt, Cat. B. Brit. Mus. xviii. p. 565; Fischer, Zeitschr. i. p. 364 (1884; Naiwascha Lake).

No. 252. ♂. Savé, Mt. Elgon, 6000 feet, Feb. 12, 1890.—Bill dusky horn-colour; legs dull pale green; iris light brown.

Order SCANSORES.

Fam. INDICATORIDÆ.

171. *INDICATOR INDICATOR*.

Indicator indicator (Gm.); Shelley, Cat. B. Brit. Mus. xix. p. 5.

Indicator sparrmani, Steph.; Fischer, Zeitschr. i. p. 365 (1884; Maurui; Naiwascha Lake); id. J. f. O. 1885, p. 124 (Ualimi); Salvad. Ann. Mus. Genov. (2) i. p. 90 (1884; Shoa); Reichen. J. f. O. 1887, p. 59 (Ussure).

No. 31. ♂. Chindimi, Kikumbuliu, Feb. 22, 1888.

172. *INDICATOR MAJOR*.

Indicator major, Steph.; Shelley, Cat. B. Brit. Mus. xix. p. 6 (1891); Fischer, Zeitschr. i. p. 365 (1884; Litema Mts. near Little Aruscha); id. J. f. O. 1885, p. 124; Shelley, P. Z. S. 1888, p. 356 (Teita).

No. 17. ♀ juv. Mararu, Teita, Dec. 12, 1888.

No. 99. ♂ ad. Machako's, March 20, 1889.

173. INDICATOR VARIEGATUS.

Indicator variegatus, Less.; Fischer, J. f. O. 1885, p. 124 (Ualimi); Shelley, Cat. B. Brit. Mus. xix. p. 7 (1891).

No. 254. ♀. Savé, Mt. Elgon, 6000 feet, Feb. 12, 1890.—Irides brown; legs dull olive-green.

174. INDICATOR EXILIS.

Indicator exilis (Cass.); Shelley, Cat. B. Brit. Mus. xix. p. 11 (1891).

No. 78. ♀. Sotik, Oct. 5, 1889.—Iris brown. A fully-formed egg inside.

Apparently quite identical with a specimen from Landana, on the Congo, in the British Museum.

Fam. CAPITONIDÆ.

175. MELANOBUCCO ÆQUATORIALIS.

Melanobucco æquatorialis, Shelley, Cat. B. Brit. Mus. xix. p. 19, pl. i.

Nos. 237, 238. ♂ ♀ ad. Savé, Mt. Elgon, 6000 feet, Feb. 8, 1890.—Bill white; bare skin round eye yellow; legs dark olive.

176. MELANOBUCCO LEUCOCEPHALUS.

Melanobucco leucocephalus (De Fil.); Shelley, Cat. B. Brit. Mus. xix. p. 21 (1891).

No. 122. ♂. Kavirondo, Dec. 11, 1889.—First seen on this day. Irides brown; legs slate-colour.

177. MELANOBUCCO IRRORATUS.

Pogonorrhynchus irroratus, Cab.; Fischer, Zeitschr. i. p. 370 (1884; Pangani); id. J. f. O. 1885, p. 125 (Wanika-land).

Melanobucco irroratus (Cab.); Shelley, Cat. B. Brit. Mus. xix. p. 25 (1891).

An adult from Ukambani.

178. TRICHOLEMA STIGMATOPHORAX.

Tricholema stigmatophorax, Cab.; Fischer, Zeitschr. i. p. 371 (1884; Pangani to Nguruman and Mossiro); id. J. f. O. 1885, p. 125 (Paré; Little Aruscha); Shelley, Cat. B. Brit. Mus. xix. p. 29, pl. ii. fig. 1 (1891).

Pogonorhynchus stigmatothorax, Shelley, P. Z. S. 1889, p. 357 (Useri River).

No. 3. ♂. Butzsuma, Teita, Dec. 3, 1888.

179. GYMNObUCCO CINEREICEPS.

Gymnobucco cinereiceps, Sharpe, Ibis, 1891, p. 122.

No. 305. ♀. Mount Elgon, Feb. 24, 1890.—Iris creamy yellow; feet and bill dusky black. Plentiful.

Nos. 306, 307. Mount Elgon, Feb. 24, 1890.

180. BARBATULA LEUCOMYSTAX, sp. n.

B. similis B. simplici, F. & R., sed fasciâ latâ mystacali albâ distinguenda. Long. tot. 3·8, culm. 0·4, alæ 2·1, caudæ 1·25, tarsi 0·6.

No. 73. ♂. Sotik, Oct. 3, 1889.—Iris brown. Very plentiful in the Mau forest, where it is constantly heard, but seldom seen.

181. TRACHYPHONUS ELGONENSIS.

Trachyphonus elgonensis, Sharpe, Ibis, 1891, p. 122.

No. 298. ♂. Mount Elgon, Feb. 23, 1890.—Iris crimson; feet dusky horn-brown; bill and bare skin round eye bright yellow. In thick forest. Call like the first note of a Cuckoo—viz., *coo-coo-coo*.

Nos. 320, 321. Mount Elgon, Feb. 25, 1890.

182. TRACHYPHONUS ERYTHROCEPHALUS.

Trachyphonus erythrocephalus, Cab. J. f. O. 1878, p. 218, taf. 2. figs. 1, 2; Shelley, Ibis, 1888, p. 291 (Taveta); id. P. Z. S. 1889, p. 357 (Taveta; Kilimanjaro); id. Cat. B. Brit. Mus. xix. p. 102 (1891).

No. 30. ♀. On march to Kikumbulu, Ukambani, Dec. 22, 1888.

No. 53. ♂. Kitina, Jan. 21, 1889.

Plentiful at Ulu in Ukambani (*cf.* Jackson, Ibis, 1889, p. 584).

The female of this species differs from the male in having the spots on the upper surface tinged with reddish, in wanting the median streak of black down the centre of the throat, but more especially in the colour of the crown, which is not black, as in the male, but is vermilion, with black tips to the

feathers. It is not a little remarkable that the very differences which are sexual in the present species are specific in the smaller Barbets of this genus, *T. boehmi* and *T. arnaudi*. At present, however, I must consider the latter two species to be distinct, on the evidence before us, as the skins in the British Museum do not warrant me in uniting them, though I should never be surprised to learn that they were merely sexes of one species. Mr. Jackson's specimen of *T. arnaudi* is a female, and so is the only sexed specimen received from Emin Pasha. On the other hand, the specimens of *T. boehmi* obtained by Mr. Jackson are males. Mr. Hunter, however, has procured birds identified as males and females of *T. boehmi* on Kilimanjaro, and the distribution of the two birds so far points to their being of separate species.

183. *TRACHYPHONUS BOEHMI*.

Trachyphonus boehmi, Fischer & Reichen. J. f. O. 1884, p. 179 (Paré Mountains, Aruscha, Ukamba, Barawa); Fischer, Zeitschr. i. p. 371 (1884); id. J. f. O. 1885, p. 125 (Wapokomo-land; Wanika-land); Shelley, Cat. B. Brit. Mus. xix. p. 104; id. P. Z. S. 1889, p. 357 (Teita; Useri River); Emin, J. f. O. 1891, p. 59 (Ugogo).

No. 54. ♂. Kitina, Jan. 21, 1889.

No. 125. ♂. Machako's, April 9, 1889.

See remarks on *T. erythrocephalus* (above).

184. *TRACHYPHONUS ARNAUDI*.

Trachyphonus arnaudi, Reichen. J. f. O. 1887, p. 60 (Kagehi); Shelley, Cat. B. Brit. Mus. xix. p. 105 (1891).

No. 146. ♀ ad. Turquel, Sük, Dec. 30, 1889.—Plentiful in scrub-plain.

Agrees with specimens from Lado collected by Emin Pasha.

Order PSITTACIFORMES.

Fam. PSITTACIDÆ.

185. *PŒOCEPHALUS RUFIVENTRIS*.

Pionias rufiventris (Rüpp.); Hengl. Orn. N.O.-Afr. ii. p. 741; Fischer, Zeitschr. i. p. 372 (1884; Paré); id. J. f. O. 1885, p. 122 (Pangani River from Mkaramo to the Litema

mountains on the Ronga River); Salvad. Ann. Mus. Genov. (2) i. p. 78 (1884; Shoa), vi. p. 207 (1888); id. Cat. B. Brit. Mus. xx. p. 372 (1891).
 No. 126. ♂. Nzoni, April 12, 1889.

186. *PŒOCEPHALUS MASSAICUS*.

Pœocephalus massaicus, Fischer & Reichen. J. f. O. 1884, p. 179 (Great Aruscha, Maeru Mts.); Fischer, Zeitschr. i. p. 372 (1884); Reichen. J. f. O. 1887, p. 55 (Lake Mbaringo); Salvad. Cat. B. Brit. Mus. xx. p. 367 (1891).

No. 63. ♂. Mau, Sept. 19, 1889.—Iris red, with an inner ring of yellow between the red and the pupil; upper mandible whitish horn-colour, the lower one slate-colour; legs yellowish white; bare skin round eye yellow.

Nos. 64, 65. ♂ ♀. Mau, Sept. 19, 1889.

187. *PŒOCEPHALUS MEYERI*.

Pœocephalus meyeri (Rüpp.); Fischer, Zeitschr. i. p. 372 (Mkaramo, Paré, and Ronga River); id. J. f. O. 1885, p. 122; Salvad. Cat. B. Brit. Mus. xx. p. 373 (1891).

Nos. 125, 136. ♂ ♀ ad. Turquel, Sük, Dec. 24, 1889.—Iris orange-yellow; bill dusky horn-blue.

188. *AGAPORNIS PULLARIA*.

Agapornis pullaria (L.); Salvad. Cat. B. Brit. Mus. xx. p. 510 (1891).

No. 847. ♂. Kitosh, March 2, 1890.—Iris brown; upper mandible yellowish pink, lower one yellowish white; feet pale green. One of a pair, the only examples seen.

Order COCCYGES.

Fam. MUSOPHAGIDÆ.

189. *TURACUS HARTLAUBI*.

Corythaix hartlaubi, Fischer & Reichen. J. f. O. 1884, p. 52 (Maeru Mts.); Fischer, Zeitschr. i. p. 363 (1884; Great Aruscha); Reichen. J. f. O. 1887, p. 57 (Kikuyu Mts., Sigaeïjo); Shelley, P. Z. S. 1889, p. 358 (Kilimanjaro); id. Cat. B. Brit. Mus. xix. p. 445 (1891).

- No. 3. ♂. Kikuyu forest, Aug. 11, 1889.—Irides brown; eyelids bright coral-red; bill dusky carmine.
- No. 71. Sotik, Oct. 2, 1889.
- No. 263. ♂. Mt. Elgon, Feb. 13, 1890.—Very plentiful in the forest from 7000 to 9000 feet.
- No. 268. ♂. Mt. Elgon, Feb. 14, 1890.
- No. 270. ♂. Mt. Elgon, Feb. 14, 1890.
- No. 271. ♀. Mt. Elgon, Feb. 14, 1890.

190. *TURACUS LEUCOLOPHUS*.

Turacus leucolophus, Heugl.; Shelley, Cat. B. Brit. Mus. xix. p. 444 (1891).

- No. 131. ♂. Turquel, Sük, Dec. 23, 1889.—Bill yellow; eyelid coral-red; irides brown; feet black. Plentiful along wooded water-courses in Kasamoja.
- No. 164. ♀. Turquel, Jan. 9, 1890.
- No. 227. ♂. Savé, Mt. Elgon, 6000 feet, Feb. 5, 1890.—Bill pale yellow at base, greenish yellow towards the tip; eyelid bright coral-red; iris brown. Plentiful in Savé.
- No. 344. ♀. Southern slopes of Mount Elgon, March 1, 1890.

191. *GALLIREX CHLOROCHLAMYS*.

Gallirex chlorochlamys, Shelley, P. Z. S. 1881, p. 590 (Ugogo); Fischer, Zeitschr. i. p. 363 (Maurui); id. J. f. O. 1885, p. 123 (Pangani, Manderu, Usaramo, Nguru Mts., Lufidschi); Reichen. J. f. O. 1887, p. 57 (Ungu, Kagehi); Shelley, P. Z. S. 1889, p. 358 (Duruma); id. Cat. B. Brit. Mus. xix. p. 447 (1891).

- No. 3. Teita, Nov. 16, 1888.—Bill black; eyelids coral-red; legs black:
- Nos. 91, 92, 94. Machako's, March 10, 1889.
- No. 129. Mauvesa, April 22, 1889.

192. *MUSOPHAGA ROSSÆ*.

Musophaga rossæ, Gould; Reichen. J. f. O. 1887, p. 57 (Mori River; Karatschongo); Shelley, Cat. B. Brit. Mus. xix. p. 448 (1891).

Nos. 126, 127. ♂ ♀. Mt. Elgon, Dec. 13, 1889.—Irides brown; bill bright yellow, shading into orange-red on the top of the mandible, lower mandible dull carmine; legs black.

No. 138. ♂. Kavamoja, Dec. 25, 1889.—Bill and shield and bare skin of eye bright yellow, the top of the shield shading into orange-carmine. Always seen in pairs.

No. 257. ♀. Savé, Mt. Elgon, 6000 feet, Dec. 12, 1890.

193. *SCHIZORHIS ZONURA*.

Schizorhis zonura, Rüpp.; Shelley, Cat. B. Brit. Mus. xix. p. 451; Reichen. J. f. O. 1887, p. 56 (Kagehi, Kabondo).

Nos. 218, 219. ♂. Turquel, Sük, Feb. 1, 1890.—Irides brown; bill pale pea-green; feet black. First seen here, but plentiful. Habits like those of *S. leucogaster*. Feeds on young shoots of *Acacia* &c.

No. 348. ♀. Kitosh, March 1, 1890.—Bill pale greenish yellow; feet olive; iris brown. Very plentiful in Kitosh, one march from Kimangitchi.

194. *SCHIZORHIS LEUCOGASTER*.

Schizorhis leucogaster (Rüpp.); Shelley, Cat. B. Brit. Mus. xix. p. 452; Fischer, Zeitschr. i. p. 364 (1884; Mkaramo); id. J. f. O. 1885, p. 122 (Massa, Paré, Little Aruscha, Matiom, Angáruka); Salvad. Ann. Mus. Genov. (2) i. p. 90 (1884; Shoa), vi. p. 216 (1888); Reichen. J. f. O. 1887, p. 56 (Kijungu, Masai); Shelley, Ibis, 1888, p. 298 (Merereni, Kilimanjaro); id. Cat. B. Brit. Mus. xix. p. 452 (1891).

No. 59. Nzoni, Jan. 24, 1889.

No. 151. ♀ ad. Turquel, Sük, Jan. 3, 1890.—Bill dull pea-green; feet black; iris brown. Plentiful among the *Acacia* trees on the River N'gatol, Kavamoja.

195. *GYMNOSCHIZORHIS LEOPOLDI*.

Gymnoschizorhis leopoldi, Shelley, Ibis, 1881, p. 117, pl. 2; Reichen. J. f. O. 1887, p. 56 (Masai, Ungu, Irangi, Simiu River, Gasa Mt., &c.); Shelley, Cat. B. Brit. Mus. xix. p. 456 (1891).

No. 76. Kikuyu country.

Fam. CUCULIDÆ.

196. CUCULUS SOLITARIUS.

Cuculus solitarius, Steph.; Salvad. Ann. Mus. Genov. (2) vi. p. 214 (1888; Shoa); Shelley, Cat. B. Brit. Mus. xix. p. 258 (1891).

No. 303. ♂. Mt. Elgon, Feb. 24, 1890.—Iris brown; bill dark olive-green; gape orange; eyelids lemon-yellow; feet pale yellow. First seen at this date in thick forest.

No. 46. ♂. Njemps, Lake Baringo, July 16, 1890.—Iris brown; eyelid yellow; bill black; gape and a line down the side of the lower mandible yellow; feet yellow. Plentiful.

197. CHRYSOCOCCYX SMARAGDINEUS.

Chrysococcyx smaragdineus (Swains.); Fischer, J. f. O. 1885, p. 124 (Nguru Mts.); Salvad. Ann. Mus. Genov. (2) i. p. 91 (1884; Shoa); vi. pp. 212, 529 (Shoa), 1888; Emin, J. f. O. 1891, p. 59 (Ugogo); Shelley, Cat. B. Brit. Mus. xix. p. 280 (1891).

Nos. 22, 23. ♂. Mararu, Teita, Dec. 14, 1888.

198. CHRYSOCOCCYX CUPREUS.

Chrysococcyx cupreus (Bodd.); Fischer, Zeitschr. i. p. 367 (1884; Maurui, Paré, Aruscha, Mationi, Naiwascha); id. J. f. O. 1885, p. 124 (Zanzibar, Lindi, coast district of Lamu, Wapokomo-land, Nguru Mts.); Reichen. J. f. O. 1887, p. 58 (Kagehi; Victoria Lake, east of Kagehi); Shelley, Ibis, 1888, p. 298 (Tangani); id. Cat. B. Brit. Mus. xix. p. 285 (1891). No. 67. ♂. Makarungu, Ukambani, Feb. 5, 1889.

199. COCCYSTES GLANDARIUS.

Coccytes glandarius (L.); Fischer, Zeitschr. i. p. 367 (1884; Mwrentät, W. of Naiwascha); Salvad. Ann. Mus. Genov. (2) i. p. 94 (1884; Shoa), vi. p. 215 (1888); Reichen. J. f. O. 1887, p. 58 (Victoria Nyanza); Shelley, Cat. B. Brit. Mus. xix. p. 212 (1891).

No. 118. ♂. Machako's, April 3, 1889.

200. CENTROPUS MONACHUS.

Centropus monachus, Rüpp.; Shelley, Cat. B. Brit. Mus.

xix. p. 359; Salvad. Ann. Mus. Genov. (2) i. p. 96 (1884; Shoa).

No. 37. ♀. Kikuyu, Aug. 4, 1889.—Legs dark horn-blue; iris crimson.

Order CORACIIFORMES.

Fam. CORACIIDÆ.

201. CORACIAS CAUDATUS.

Coracias caudatus, L.; Fischer, Zeitschr. i. p. 359 (Zanzibar, Maurui); id. J. f. O. 1885, p. 127 (Bagamoyo, Takaungu, Wito, Pangani); Salvad. Ann. Mus. Genov. (2) i. p. 115 (1884; Shoa); Shelley, P. Z. S. 1889, p. 358 (Useri River); Emin, J. f. O. 1891, p. 59 (Ugogo); Sharpe, Cat. B. Brit. Mus. xvii. p. 21 (1892).

No. 68. ♂. Machako's, Feb. 6, 1889.

No. 116. ♂. Machako's, April 3, 1889.

202. CORACIAS NÆVIUS.

Coracias navius, Daud.; Salvad. Ann. Mus. Genov. (2) i. p. 114 (1884; Shoa), vi. p. 223 (1888); Sharpe, Cat. B. Brit. Mus. xvii. p. 24 (1892).

Coracias pilosa, Lath.; Reichen. J. f. O. 1887, p. 61 (Soboro).

No. 87. ♂ ad. Machako's, Feb. 28, 1889.

Fam. ALCEDINIDÆ.

203. CERYLE SHARPII.

Ceryle sharpii, Gould; Sharpe, Cat. B. Brit. Mus. xvii. p. 120 (1892).

No. 216. ♂ ad. River Kilim, Suk, Feb. 1, 1890.—Plentiful.

Iris dark brown.

The occurrence of this form of the great African Kingfishers so far east is interesting, as showing the intimate connection between the avifauna of the Gaboon and Congo regions with that of the Mount Elgon district.

204. ISPIDINA PICTA.

Ispidina picta (Bodd.); Fischer, Zeitschr. i. p. 361 (1884; Nguruman); id. J. f. O. 1885, p. 126 (Zanzibar, Usegua,

Mombasa, Malindi); Salvad. Ann. Mus. Genov. (2) i. p. 113 (1884; Shoa), vi. p. 223 (1888); Reichen. J. f. O. 1887, p. 60 (Simiu River); Sharpe, Cat. B. Brit. Mus. xvii. p. 191 (1892).

No. 134. ♂ ad. Kasamoja, Dec. 24, 1889.—Bill vermilion; legs bright coral-red; iris brown.

205. HALCYON SEMICÆRULEUS.

Halcyon semicæruleus (Forsk.); Fischer, Zeitschr. i. p. 361 (1884; Maurui, Great Aruscha, Nguruman); id. J. f. O. 1885, p. 126 (Zanzibar, Bagamoyo, Usaramo, Pangani, Mombasa, Wapokomo-land); Salvad. Ann. Mus. Genov. (2) i. p. 113 (1884; Shoa); Reichen. J. f. O. 1887, p. 60 (Kagehi); Shelley, Ibis, 1888, p. 297 (Fungarthombo); Emin, J. f. O. 1891, p. 59 (Ugogo); Sharpe, Cat. B. Brit. Mus. xvii. p. 232 (1892).

No. 191. ♂ ad. Turquel, Suk, Jan. 21, 1890.—Iris brown; bill dark vermilion; feet dark vermilion, brown in front of tarsus and tops of the toes. Fairly plentiful.

Fam. BUCEROTIDÆ.

206. BUCORAX ABYSSINICUS.

Tmetoceros abyssinicus (Gm.); Fischer, Zeitschr. i. p. 361 (Highlands of Ussambá; Maurui); id. J. f. O. 1885, p. 126 (Bagamoyo, Usaramo); Reichen. J. f. O. 1887, p. 60 (Usegua, Ungu, Ruwana River, Mori River).

Bucorvus abyssinicus, Salvad. Ann. Mus. Genov. (2) i. p. 101 (1884; Shoa), vi. p. 217 (1888).

Bucorax abyssinicus, Ogilvie Grant, Cat. B. Brit. Mus. xvii. p. 349.

No. 189. ♂ ad. Turquel River, Jan. 20, 1890.—Iris dull pale yellow; wattles &c. bright crimson-red.

207. BYCANISTES SUBQUADRATUS.

Bycanistes subquadratus, Cab.; Ogilvie Grant, Cat. B. Brit. Mus. xvii. p. 419 (1892).

No. 77. ♂ ad. Mt. Elgon, Feb. 22, 1890.

No. 302. ♂ ad. Mt. Elgon, Feb. 24, 1890.—Iris crimson-brown; feet black. First seen at Savé, where I got a

pair. Plentiful in the thick forest on the south side of the mountain from 6000 to 8000 feet.

208. *LOPHOCEROS MELANOLEUCUS*.

Lophoceros melanoleucus (Licht.); Fischer, J. f. O. 1885, p. 126 (Bagamoyo, Lindi, Usegua, Usaramo, Pangani, Wito); Shelley, Ibis, 1888, p. 292 (Lamu, Taveta); Emin, J. f. O. 1891, p. 59 (Ugogo); Ogilvie Grant, Cat. B. Brit. Mus. xvii. p. 399 (1892).

No. 230. ♂ ad. Savé, Elgon, 6000 feet, Feb. 6, 1890.—Iris dull yellow; feet black; bill dull carmine (blood-colour).
No. 246. ♀ ad. Savé, Elgon, 6000 feet, Feb. 10, 1890.

209. *LOPHOCEROS EPIRHINUS*.

Lophoceros nasutus, (nec L.); Fischer, J. f. O. 1885, p. 126 (Wanika-land); Emin, J. f. O. 1891, p. 59 (Ugogo); Ogilvie Grant, Cat. B. Brit. Mus. xvii. p. 408 (1892).

No. 175. ♀ ad. Turquel, Sük, Jan. 15, 1890.—Iris brown; feet black; upper mandible creamy white at base, purplish carmine at tip, the lower mandible black, with transverse white stripes; bare cheeks yellow.

210. *LOPHOCEROS ERYTHORHYNCHUS*.

Rhynchaceros erythrorhynchus (Temm.); Fischer, J. f. O. 1885, p. 125 (Usegua, Nguruman, Mossiro).

Tockus erythrorhynchus, Salvad. Ann. Mus. Genov. (2) i. p. 103 (1884; Shoa), vi. p. 219 (1888).

Lophoceros erythrorhynchus, Emin, J. f. O. 1891, p. 59 (Ugogo); Ogilvie Grant, Cat. B. Brit. Mus. xvii. p. 409 (1892).

No. 178. ♀ ad. Turquel, Sük, Jan. 16, 1890.—Bill dull carmine; the half-bare cheeks dull carmine.

211. *LOPHOCEROS JACKSONI*.

Lophoceros jacksoni, Ogilvie Grant, Ibis, 1891, p. 127; id. Cat. B. Brit. Mus. xvii. p. 416, pl. xiii. (1892).

No. 144. ♂ ad. Turquel, Sük, Dec. 27, 1887.—Iris light yellowish brown. Plentiful.

Fam. UPUPIDÆ.

212. UPUPA MINOR.

Upupa decorata, Hartl.; Fischer, Zeitschr. i. p. 359 (1884; Maurui, Nguruman); id. J. f. O. 1885, p. 127 (Little Aruscha).

Upupa africana, Emin, J. f. O. 1891, p. 59 (Ugogo); Salvin, Cat. B. Brit. Mus. xvi. p. 14 (1892).

No. 84. ♂ ad. Machako's, Feb. 23, 1889.

No. 192. ♀ ad. Turquel, Sük, Jan. 21, 1890.—Feet slate-colour; bill dusky; iris brown. Very plentiful in the open bush country of Turquel.

213. IRRISOR JACKSONI.

Irrisor jacksoni, Sharpe, Ann. & Mag. Nat. Hist. (6) vi. p. 503; Salvin, Cat. B. Brit. Mus. xvi. p. 21, pl. iii. fig. 1 (1892).

Nos. 49, 50. ♂ ♀. Kikuyu, Sept. 19, 1889.—Iris orange; feet coral-red; bill carmine.

214. RHINOPOMASTES CABANISI.

Irrisor cabanisi, De Fil.; Fischer, Zeitschr. i. p. 360 (Mossiro); Reichen. J. f. O. 1887, p. 61 (Salandia); Emin, J. f. O. 1891, p. 59 (Ugogo); Salvin, Cat. B. Brit. Mus. xvi. p. 26 (1892).

Rhinopomastus cabanisi, Fischer, J. f. O. 1885, p. 127 (Barawa).

No. 1. ♂ ad. Butzsuma, Teita, Dec. 3, 1888.

Fam. MEROPIDÆ.

215. MEROPS APIASTER.

Merops apiaster, L.; Salvad. Ann. Mus. Genov. (2) i. p. 107 (1884; Shoa); Sharpe, Cat. B. Brit. Mus. xvii. p. 63 (1892).

No. 61. ♂ ad. Makarungu, Ukambani, Feb. 5, 1889.

No. 79. ♀ imm. Sotik, Oct. 5, 1889.—Iris crimson.

No. 80. ♀ juv. Sotik, Oct. 5, 1889.—Iris brown.

216. MELITTOPHAGUS CYANOSTICTUS.

Melittophagus cyanostictus, Cab.; Fischer, Zeitschr. i. p. 360 (1884; Pangani, Sigirari, Nguruman); id. J. f. O. 1885,

p. 127 (Bagamoyo, Mombasa, Galla-land, Lamu); *Salvad. Ann. Mus. Genov.* (2) i. p. 110 (1884; Shoa), vi. p. 221 (1888); *Reichen. J. f. O.* 1887, p. 61 (Ussure, Irangi); *Shelley, Ibis*, 1888, p. 296 (Mpecatoni, Kilimanjaro); *id. P. Z. S.* 1889, p. 358 (Teita); *Emin, J. f. O.* 1891, p. 59 (Ugogo); *Sharpe, Cat. B. Brit. Mus.* xvii. p. 48 (1892).
 No. 327. ♀ ad. Mount Elgon, Feb. 23, 1890.—Bill black; feet dull scaly brown; iris crimson.

217. *MELITTOPHAGUS ALBIFRONS.*

Melittophagus albifrons (Cab.); *Fischer, Zeitschr.* i. p. 360 (Súsua); *id. J. f. O.* 1885, p. 127 (Naiwascha); *Sharpe, Cat. B. Brit. Mus.* xvii. p. 53 (1892).

Nos. 60, 61. ♂ ♀ ad. Masai-land, Sept. 16, 1889.

No. 80. ♂ ad. Foot of Mt. Logonot, Masai-land, July 29, 1889. Iris brown; feet and bill black.

218. *MELITTOPHAGUS OREOBATES*, sp. n.

Adult male. General colour above grass-green, slightly washed with blue; wing-coverts like the back; primaries green, dusky towards the ends, and fawn-colour along the inner web; secondaries fawn-colour for the most part, externally green, with a broad band of black before the tip, which is ashy whitish; inner secondaries bluish green, like the back; centre tail-feathers bluish green, the remainder fawn-coloured on the inner web, green externally, with a broad black band before the tips, which are ashy whitish; crown of head green, like the back, with a very narrow line of bright blue along the base of the forehead, extending backwards over the eye; lores, feathers below the eye, and ear-coverts black; cheeks and throat golden yellow; the hinder cheeks whitish; a blue-black patch on the lower throat; fore neck and chest bright chestnut; rest of under surface fawn-colour, with a slight wash of olive-green; sides of body deep cinnamon-rufous, like the under wing-coverts and quill-lining; edge of wing washed with green; under tail-coverts pale fawn-colour, washed with green, the long ones entirely green: bill black; feet dusky brown; iris crimson. Total length 8·5 inches, culmen 1·5, wing 4·0, tail 3·5, tarsus 0·35.

No. 253. ♂ ad. Savé, Elgon, 6000 feet, Feb. 12, 1890.—
Iris crimson. First seen on Mt. Elgon in pairs.

No. 331. ♂. Kimangitschi, Feb. 27.—Bill black; iris
crimson; feet scaly brown.

This new species belongs to the section of the genus *Melitophagus* which embraces *M. lafresnayi* and *M. variegatus*. It is more nearly allied to the latter bird, as it has only a narrow blue supercilium, and lacks the blue forehead of *M. lafresnayi*. It differs from both, however, in having a large black patch on the lower throat. Although this patch has a slight wash of blue, yet it is not *bright blue*, as in the two species above mentioned, and *M. oreobates* further differs in the much less conspicuous amount of fawn-colour on the wings and tail.

Fam. TROGONIDÆ.

219. HAPALODERMA NARINA.

Hapaloderma narina (V.); Fischer, Zeitschr. i. p. 368 (Pangani); id. J. f. O. 1885, p. 124 (Wito; Tana River; Bagamoyo; Usaramo; Nguru Mts.); Salvad. Ann. Mus. Genov. (2) i. p. 116 (1884; Shoa), vi. p. 223 (1885); Ogilvie Grant, Cat. B. Brit. Mus. xvii. p. 477 (1892).

No. 217. ♂. River Kilini, Sük, N. of Mount Elgon, Feb. 1, 1890.—Bill yellow, shading into yellowish green at base; bare skin of face soft blue-green.

No. 236. ♀. Savé, Elgon, 6000 feet, Feb. 8, 1890.—Bill greenish yellow; feet flesh-colour; iris bright light brown; bare skin of face bluish green.

No. 310. ♀. Mount Elgon, Feb. 25, 1890.—In thick forest. Iris brown; bare skin near the ears pale blue; feet scaly flesh-colour.

220. HAPALODERMA VITTATUM.

Hapaloderma vittatum, Shelley, P. Z. S. 1882, p. 306, 1889, p. 359 (Kilimanjaro; Kahé); Ogilvie Grant, Cat. B. Brit. Mus. xvii. p. 480, pl. xvi.

No. 12. ♂. Sotik, Aug. 17, 1889.—Iris crimson-brown; feet pale flesh-colour; bare spot in front of ears yellow.

Fam. CAPRIMULGIDÆ.

[The Goatsuckers and Swifts have been named for me by my friend Herr Hartert.]

221. CAPRIMULGUS INORNATUS.

Caprimulgus inornatus, Heugl.; Hartert, Cat. B. Brit. Mus. xvi. p. 556 (1892).

No. 61. ♂. Makarungu, Jan. 27, 1889.

222. CAPRIMULGUS POLIOCEPHALUS.

Caprimulgus poliocephalus, Rüpp.; Hartert, Cat. B. Brit. Mus. xvi. p. 546 (1892).

No. 335. ♂ juv. Kimangitchi, Feb. 28, 1890.—Legs fleshy brown; iris brown.

223. CAPRIMULGUS FRÆNATUS.

Caprimulgus frænatus, Salvad. Ann. Mus. Genov. (2) i. p. 118 (1884; Shoa); Hartert, Cat. B. Brit. Mus. xvi. p. 533 (1892).

No. 115. ♂. Machako's, April 3, 1889.

Fam. CYPSELIDÆ.

224. CYPSELUS ÆQUATORIALIS.

Cypselus æquatorialis, Müll.; Salvad. Ann. Mus. Genov. (2) vi. p. 227 (1888).

Micropus æquatorialis, Hartert, Cat. B. Brit. Mus. xvi. p. 441 (1892).

Nos. 84, 88. ♂. Sotik, Oct. 6, 1889.

225. CYPSELUS STREUBELI.

Micropus streubeli (Hartl.); Hartert, Cat. B. Brit. Mus. xvi. p. 452 (1892).

♂. Jinji, Uganda, April 6, 1890.

[To be continued.]

XXV.—*Descriptions of new Species of Birds discovered by Mr. C. Hose on Mount Dulit in N.W. Borneo.* By R. BOWDLER SHARPE, LL.D., F.L.S., &c.

IN the next number of 'The Ibis' I shall have the pleasure of publishing a list of the birds procured on Mount Dulit, in the northern part of Sarawak, by Mr. Charles Hose

during his recent expedition to that mountain. In the meantime I add descriptions of some of the new species represented in his collection.

Fam. PODARGIDÆ.

BATRACHOSTOMUS HARTERTI, sp. nov.

Adult male. Similar to *B. auritus*, but much smaller and darker, the prevailing colour dusky chestnut, with a few rufous bars on the head; the inner secondaries chestnut, with wavy cross-bars of black instead of the broad whitish rufescent bars which are seen in *B. auritus*. The principal differences, however, between the two species are seen on the under surface, the throat in *B. harterti* being dark vinous-chestnut, which overspreads the chest, with very few lighter bars, while the flanks and sides of the body are dull ashy, with a few arrow-head bars of vinaceous white, the latter colour occupying the greater part of the lower flank-feathers, which are consequently only slightly mottled with ashy grey. Total length 13·5 inches, culmen 1·25, wing 8·7, tail 5·6, tarsus 0·7.

Fam. MELIPHAGIDÆ.

ZOSTEROPS SQAMIFRONS, sp. nov.

Adult male. General colour above olive-brown, the feathers of the forehead tipped with white, each feather with a blackish subterminal bar; wings and tail dusky brown, washed externally with olive; lores and a narrow eyelid whitish; ear-coverts and hinder cheeks ashy; the fore part of the cheeks white; throat and fore neck ashy white, slightly tinged with yellow; remainder of under surface of body light sulphur-yellow; thighs ashy; under wing-coverts white, tinged with yellow; quills below sepia-brown, whitish along the inner web. Total length 3·6 inches, culmen 0·4, wing 2·0, tail 1·15, tarsus 0·55.

Fam. TURDIDÆ.

GEOCICHLA EVERETTI, sp. nov.

Adult female. General colour above uniform olive-brown; the lesser and median wing-coverts like the back; quills and tail-feathers more reddish brown than the back; lores and

feathers behind the eye whitish; ear-coverts hoary grey, spotted with dark brown; cheeks white, mottled with dusky margins to the feathers, with an indistinct dusky line along the gape, and with a broad blackish malar stripe below; throat whitish, with a slight orange tinge; the rest of the under surface of the body orange-rufous, the lateral breast-feathers tipped with dusky brown; lower breast and abdomen white; thighs externally ashy brown; under tail-feathers orange; axillaries white, with black tips; under wing-coverts brown, with the edge of the wing white, as well as a band along the base of the quills. Total length 7·5 inches, culmen 1·0, wing 4·4, tail 2·6, tarsus 1·3.

Fam. CAPITONIDÆ.

MESOBUCCO EXIMIUS, sp. nov.

Adult male. General colour above grass-green; wings and tail like the back, with a bluish shade round the edge of the wing and on the primary-coverts; quills blackish, externally green; tail green, with a bluish shade along the inner web; a broad frontal band of black slightly washed with blue, this band followed by a broad band of crimson across the centre of the crown; lores, feathers above and below the eye, as well as the ear-coverts, verditer-blue; above the gape a golden-yellow spot; fore part of cheeks black, followed by a spot of crimson; hinder cheeks yellowish green, like the sides of the neck; throat black, with a mark of verditer-blue on each side of the lower throat; on the fore neck a large spot of crimson; rest of under surface yellowish green, lighter on the abdomen; under wing-coverts and quill-lining ochreous-buff, the edge of the wing showing greenish blue. Total length 6·2 inches, culmen 0·6, wing 3·15, tail 2·0, tarsus 0·7.

XXVI.—*On a Collection of Birds from Central Nicaragua.*

By OSBERT SALVIN and F. DUCANE GODMAN.

MR. W. B. RICHARDSON, who has for some time past been diligently collecting birds in Central America, has recently sent

us a series of skins from Matagalpa and its neighbourhood, in the Republic of Nicaragua. As several species are represented in this collection which are of considerable interest as regards their distribution, we lose no time in writing the following notes concerning them, leaving a fuller account for a future occasion.

Matagalpa is situated at an elevation of about 4000 feet above the sea, at some distance to the north-eastward of the Lake of Managua. The surrounding mountains attain a considerably higher elevation, and this fact, as also the presence at no great distance of dense forest spreading to the lowlands, brings about an interesting state of affairs as regards the ornithology of the district. The highlands, connected as they are with the highlands of Guatemala, are inhabited by a number of the upland birds of the countries lying to the northward, while in sight of them, as it were, are the lowland birds belonging to the southern fauna, and found here at nearly their extreme northern limit, as the upland species are at their extreme southern limit. Unfortunately, as yet, we have no notes of the physiography of this district, and none of the limits of the forests and open country, but we can see that it is a district that requires closely mapping with regard to these points, and the result would, we feel sure, explain the peculiarities of the ornithology as exhibited by the collection now before us.

Fam. CERTHIIDÆ.

There is a single specimen of *Certhia* in the collection which is rather whiter on the under surface than Guatemalan examples attributed to *C. mexicana*. The presence of *Certhia* in Nicaragua shows a considerable extension of its southern range.

Fam. MNIOTILTIDÆ.

Of this family the following species are represented, all of which have hitherto been recorded only from more northern localities, viz.:—*Dendræca occidentalis*, *D. chrysoparia*, *D. townsendi*, and *Peucedramus olivaceus*. All of these agree accurately with northern examples. There is

also a specimen of *Basileuterus delatirii*, of which we have recently received other examples from Chinandega, in Nicaragua; these appear to be strictly conspecific with Costa Rican specimens, and to be the true *B. delatirii* of Bonaparte, as Mr. Cherrie has recently suggested (Pr. U.S. Nat. Mus. xiv. p. 340). The relative value of these very closely allied forms, however, requires further examination, which we defer for another occasion. So far as we can see at present, two forms occur in Guatemala, of which the bird found in the vicinity of Dueñas and the Volcan de Fuego is not separable from the Nicaraguan *B. delatirii*. The Vera Paz bird, which spreads northwards to Teapa, in the Mexican State of Tabasco, differs in the greater extent of white on the chin, this colour spreading under the eye, and in the chestnut ear-coverts. This is Mr. Cherrie's *B. salvini*.

Fam. TANAGRIDÆ.

There are several specimens of *Calliste laviniæ* in the collection, but this bird has already been noticed in the province of Chontales. Specimens of a *Chlorospingus* seem undistinguishable from *C. postocularis* of Southern Guatemala.

Fam. FRINGILLIDÆ.

A *Spizella* is referable to *S. pinetorum*, this bird having already been noticed in Honduras (Ridgway, Pr. U.S. Nat. Mus. x. p. 587) and in the island of Ruatan (Salv. Ibis, 1888, p. 262). Worn specimens of a *Hæmophila* are referable to *H. rufescens*, though the crown does not show the mesial stripe so distinctly as in freshly moulted birds. A *Pyrgisoma* is the true *P. leucote*, and not the northern form, *P. occipitale*—a noteworthy fact.

Fam. TYRANNIDÆ.

Specimens of a *Mitrephanes* belong to the northern form, *M. phæocercus*.

Fam. COTINGIDÆ.

Mr. Richardson sends two male specimens of *Chasmo-*

rhynchus tricarunculatus, carrying the range of this species much further north than has been hitherto recorded.

Fam. DENDROCOLAPTIDÆ.

Several specimens of a *Xiphocolaptes* agree with the true *X. emigrans* of Guatemala.

Fam. TROCHILIDÆ.

Thirteen species are represented of this family; of these we find the following northern upland species all strictly agreeing with Guatemalan specimens, viz.:—*Eupherusa eximia*, *Cyanomyia guatemalensis*, *Basilinna leucotis*, and *Tilmatura duponti*, and two female examples which we believe to belong to *Abeillia typica*. *Microchera parvirostris*, already noticed in Chontales, is also represented. Other species are more widely spread in Central America, and lastly we have a beautiful new species of *Delattria*, which we propose to call

DELATTRIA SYBILLE, sp. nov.

D. viridipallenti proximè affinis, sed pectore et hypochondriis viridibus nec albis gula fere concoloribus; tectricibus subcaudalibus et rectricibus pallide griseis et dorso imo viridi nec cupreo tincto facile distinguenda. Long. tota 4·5 poll. Angl., alæ 2·6, caudæ rectr. med. 1·3, rectr. lat. 1·7. ♀ adhuc ignota.

Hab. Nicaragua, Matagalpa (*W. B. Richardson*).

Mr. Richardson has sent us six male specimens of this beautiful species, all obtained near Matagalpa at an elevation of about 4000 feet above the sea-level.

The bird is a true *Delattria*, allied to *D. viridipallens*, with the characteristic postocular white stripe.

Fam. PICIDÆ.

Colaptes mexicanoides is represented by several specimens which agree closely with others from Guatemala, from which country alone this bird has as yet been recorded.

Fam. RHAMPHASTIDÆ.

We also find specimens of the Guatemalan and Mexican *Aulacorhamphus prasinus* precisely like the typical form.

Fam. PSITTACIDÆ.

Amongst the Parrots are several specimens of a *Conurus* resembling in every respect *C. holochlorus*, except that the chin and upper throat are scarlet. It thus becomes *C. rubritorquis*, Schl., described from a menagerie specimen from an unknown locality (P. Z. S. 1886, p. 538, pl. 56). In his recent Catalogue of the Psittaci, Count Salvadori (Cat. Birds Brit. Mus. xx. p. 190) has placed this name as a synonym of *C. holochlorus*; but now that we find the distinctive character localized in this part of Central America, this verdict must be reconsidered.

ACCIPITRES.

A pair of an *Accipiter* agree precisely with a Venezuelan example of *A. salvini* (Ridgway), but it is questionable whether this form is really distinct from *A. chionogaster* (Kp.).

COLUMBÆ.

A specimen of *Geotrygon albifacies* agrees exactly with Mexican and Guatemalan examples, and proves that the species has a wider southern extension than has been hitherto supposed. *Columba fasciata* is also represented.

GALLINÆ.

A female specimen of a *Penelopina* may belong to *P. nigra*, but more specimens are necessary to decide whether this is so, or whether it should be referred to a distinct species. Anyhow, this is the first instance of the genus *Penelopina* being recorded outside the limits of Guatemala.

XXVII.—Notices of recent Ornithological Publications.

[Continued from p. 179.]

28. *Barboza du Bocage on the Birds of St. Thomas, West Africa.*

[Oiseaux de l'Île St. Thomé. Par J. V. Barboza du Bocage. Journ. Sci. Math. Phys. e Nat. Lisboa, 2^a ser. no. 6, p. 77, 1891.]

M. F. Newton visited several localities in the Island of

St. Thomas, which lies nearly under the line, on the west coast of Africa, in 1890, and obtained examples of 44 species of birds, which are enumerated in this paper*. *Lanius (Fiscus) newtoni* is described as new. Besides these 44 species, 14 others are known to be found on this island, so that the avifauna embraces at least 58 species. Of these several are restricted to the island.

29. Bendire on Collecting Birds' Eggs.

[Directions for Collecting, Preparing, and Preserving Birds' Eggs and Nests. By Charles Bendire. Part D of Bull. U.S. Nat. Mus. no. 29.]

This is an excellent companion to Mr. Ridgway's Directions for collecting birds, of which we have already spoken (see above, p. 175). It has been prepared by one of the leading American authorities on the subject, and cannot fail to be useful to oologists in every country. The author commences, we are pleased to see, with insisting on the primary importance of the careful identification of all specimens of eggs, a point not always sufficiently considered, we fear, by young collectors.

30. Blasius on Birds at the German Light-Station.

[Vogelleben an den Deutschen Leuchthürmen, 1885-1890. Von Professor Dr. Rudolf Blasius. 8vo. Wien: 1891. Pp. 248.]

Dr. R. Blasius sends us a set of his reports on the birds met with at the German light-stations in the Baltic and on the coast of the North Sea, altogether 40 in number, which deserve a few lines of commendation. The first report published was for 1885—those for 1889 and 1890 are given in the last article. They contain a mass of information about our migratory species, which, however, will become more generally available when some sort of analysis or *résumé* is made of them. This will, no doubt, ultimately be done.

* Cf. notices of previous papers on this subject, *Ibis*, 1888, p. 361, and 1890, p. 248.

31. *Buller on rare Birds of New Zealand.*

[An Exhibition of New and Interesting Forms of New-Zealand Birds, with Remarks thereon. By Sir Walter L. Buller. Trans. and Proc. New-Zealand Inst. xxiii. p. 36, 1891.]

Sir Walter Buller has adopted the excellent plan of exhibiting at the Meetings of the Wellington Philosophical Society specimens of rare and remarkable birds of the avifauna of New Zealand, on which he is our leading authority, and of reading notes on their peculiarities, thus keeping our knowledge of the birds of New Zealand up to date. In the present communication on this subject we have notes on *Miro traversi*, *Sphenæacus fulvus*, *Larus novæ-hollandiæ*, *Ocydromus earlii*, *Æstrelata mollis*, *Æ. affinis*, and other rare species. *Puffinus zealandicus*, Sandager, is stated to be the same as *P. bulleri*, Salvin. A thirteenth species of New-Zealand Penguin has been discovered, but not yet identified.

32. *Buller on a new Albatross.*

[On the Wandering Albatross; with an Exhibition of Specimens, and the Determination of a new Species (*Diomedea regia*). By Sir Walter L. Buller. Trans. and Proc. New-Zealand Inst. xxiii. p. 230, 1891.]

Sir Walter Buller has come to a conclusion that the belief he has long entertained that two large Albatrosses of the New-Zealand seas have been confounded under the name *D. exulans* is undoubtedly correct. He now proposes to call the one distinguishable by its larger size and white head and neck *D. regia*. Both species breed in the Auckland Islands, but in separate spots, and not quite at the same season. Sixteen specimens of the new species "of both sexes and of all ages" have been examined.

33. *Bund on the Birds of Worcestershire.*

[A List of the Birds of Worcestershire and the adjoining Counties. By J. W. Willis Bund, F.L.S., F.Z.S., &c. 8vo. Worcester: 1891. Pp. 53.]

As in many other cases, the boundaries of Worcestershire by no means coincide with the areas of distribution of the birds of that county. Mr. Willis Bund has therefore in-

cluded Herefordshire, Gloucestershire, Oxfordshire, Warwickshire, Staffordshire, and Shropshire in his subject. Within these limits the presence of only 200 species of birds has been as yet recorded, but more, no doubt, remain to be added. We agree with the author that the alleged occurrence of the Abyssinian Roller in Great Britain is exceedingly doubtful, and we are not surprised that the compilers of the B. O. U. List did not even allude to it.

34. *Butler on the Birds of Indiana.*

[The Birds of Indiana, with Illustrations of many of the Species. Prepared for the Indiana Horticultural Society, and originally published in its Transactions for 1890. By Amos W. Butler. 8vo. Brookville: 1891. Pp. 135.]

This is a list of the birds of Indiana, originally published as an appendix to the 'Transactions of the Indiana Horticultural Society' for 1890. It is illustrated with woodcuts taken from Coues's 'Key.' The Act of the General Assembly of the State "for the protection of Birds, their nests and eggs," is prefixed, also a Bibliography of previous works on the subject. The arrangement and nomenclature are that of the code of the A. O. U. The recognized species of birds of Indiana are 305, besides 79 "hypothetical."

35. *Büttikofer on Birds from Flores, Samao, and Timor.*

[On a Collection of Birds from Flores, Samao, and Timor. By J. Büttikofer. Notes Leyden Mus. xiii. p. 210.]

Mr. Büttikofer gives us an account of a small collection of birds made in the islands of Flores, Samao, and Timor by Dr. H. ten Kate. They are referred to 29 species. *Tropidorrhynchus neglectus*, from Flores, Sumbawa, and (probably) Lombok, is separated, as a new species, from *T. timoriensis*.

36. *Chapman on the Avifauna of the Bahamas.*

[The Origin of the Avifauna of the Bahamas. By Frank M. Chapman. Amer. Nat. 1891, p. 528.]

Mr. Chapman discusses the avifauna of the Bahamas in a

very complete and exhaustive manner. There are 54 species and subspecies of land-birds known to breed in the Bahamas, to which may be added two species of water-birds restricted to the group. These 56 birds are divisible into two categories, the first (32) being those of general distribution, and the second (24) those peculiar to the Bahamas. After a full consideration of these birds, especially of the latter class, and of the sources whence they appear to have been derived, Mr. Chapman shows that the Bahaman avifauna is comparatively of recent origin, and has been mainly derived from Cuba. "The Bahamas," he says, "are largely West-Indian in their affinities, and may claim the rank of a fauna of the Antillean Region (*lege* Subregion), characterized by the presence of forms different from their West-Indian ancestry, and by the infusion of a slight Floridan element."

37. *Chapman on the Tail-coverts of Colaptes auratus.*

[On the Color-Pattern of the Upper Tail-Coverts in *Colaptes auratus*. By Frank M. Chapman. Bull. Amer. Mus. Nat. Hist. iii. p. 311.]

Mr. Chapman calls attention to the wide range of variation shown in the colour-pattern of the upper tail-coverts in *Colaptes auratus*. Similar variations occur in the other species of the genus, but a larger series of specimens is required before this can be properly shown. *Chrysoptilus* shows its relationship to *Colaptes* in having the tail-coverts similarly barred, and corresponding variations appear to occur in other genera.

38. *Chapman on Birds from Texas.*

[On the Birds observed near Corpus Christi, Texas, during parts of March and April 1891. By Frank M. Chapman. Bull. Amer. Mus. Nat. Hist. iii. p. 315.]

The present paper is designed to supplement one on the same subject by the late Mr. Beckham, which appeared in 1887 (Proc. U.S. Nat. Mus. x. p. 633). Beckham gave a list of 139 species of birds to be met with near Corpus Christi. Mr. Chapman made notes and collections in the dis-

trict round that city in March and April 1891 for the American Museum of Natural History. He found birds abundant both in species and individuals. Of the 190 odd species observed, at least 85 were common, but the "demand for birds for millinery purposes" has sadly thinned their ranks. A flock of 200 specimens of *Larus franklini* was seen on April 24th. *Cardinalis cardinalis canicaudus* is described as a new subspecies from S.W. Texas and N.E. Mexico. The species and subspecies added to Beckham's list were upwards of sixty.

39. *Cheeseman on the Birds of the Kermadec Islands.*

[On the Birds of the Kermadec Islands. By T. F. Cheeseman. Trans. and Proc. New-Zealand Inst. xxiii. p. 216, 1891.]

The Kermadec Islands lie in the Pacific Ocean, some 250 miles north-east of New Zealand. In a previous paper on this subject Mr. Cheeseman gave the names of 22 species of birds as found there. He now raises the total to 40. The land-birds of the Kermadecs are, without exception, also found in New Zealand, and the sea-birds are either met with in the New-Zealand seas or "are common on the coasts of Australia or Polynesia." There are no endemic species, and not more than 12 or 15 permanent residents. It would seem, however, that a Megapode (*Megapodius* sp. inc.) formerly inhabited the crater of the volcano in Sunday Island, one of the group.

40. *Cherrie on new Costa-Rican Birds.*

[Description of new Genera, Species, and Subspecies of Birds from Costa Rica. By George K. Cherrie. Proc. U.S. Nat. Mus. xiv. p. 337.]

Mr. Cherrie describes, principally from specimens contained in a small collection of birds brought by him from Costa Rica, the following new species and subspecies:—*Lophotriccus squamicrostus minor*, *L. zeledoni*, *Pachyrhamphus ornatus*, *Deconychura typica* (a new genus and species of Dendrocolaptidæ allied to *Sittasomus* and *Glyphorhynchus*), *Vireo superciliaris*, *Basileuterus salvini* (from Guatemala) = *B. delatirii*, auctt. nec Bp., *Grallaria lizanoi*, *Pachyrhamphus*

similis (named hypothetically), *Arremon aurantirostris saturatus* (also named hypothetically), and *Myrmeciza intermedia*. Besides these a new genus (*Premnoplex*) is instituted for *Margarornis brunnescens*.

41. Cherrie's Notes on Costa-Rican Birds.

[Notes on Costa-Rican Birds. By George K. Cherrie. Proc. U.S. Nat. Mus. xiv. p. 517.]

In the present paper Mr. Cherrie gives a series of critical notes upon the remainder of the collection from which the new species were described, as recorded in the previous paper. Amongst the rarities mentioned are examples of *Vireo pallens*, and of *Myrmeciza stictoptera* of Lawrence, a species unfortunately overlooked by the compiler of the 15th volume of the B. M. Catalogue! *Picolaptes gracilis*, Ridgway, is believed to be hardly different from *P. compressus*; but see Ridgway himself on this point.

42. Forbes on the Date of Extinction of the Moa.

[Notes on the Disappearance of the Moa. By H. O. Forbes. Trans. and Proc. New-Zealand Inst. xxiii. p. 373, 1891.]

Mr. Forbes has recently explored a cavern near Sumner, Canterbury, New Zealand, and has found fragments of the eggs of *Dinornis* in the kitchen-middens of its former occupants, together with objects undoubtedly made by Maoris. He concludes that the Maoris ate the Moa's eggs for food, and consequently agrees with those authorities who believe that the Moa was *not* extinct when the Maoris arrived in New Zealand.

43. Frivaldszky on the Birds of Hungary.

[Aves Hungariæ. Enumeratio Systematica Avium Hungariæ, cum notis brevibus biologicis, locis inventionis virorumque a quibus oriuntur. E mandato Commissionis Hungariæ Secundi Ornithologorum Universalis Congressus conscripsit Joannes Frivaldszky. 8vo. Budapestini: 1891. Pp. 197.]

This is a catalogue of the 325 known species of the birds of Hungary, with short Latin notes on their exact localities

and modes of occurrence, prepared specially for the International Congress at Budapest. After each species is added a list of the specimens of it in the National Hungarian Museum at Budapest, with occasional references to those in other collections.

44. *Jäckel and Blasius on the Birds of Bavaria.*

[Systematische Uebersicht der Vögel Bayerns, mit Rücksicht auf das örtliche und quantitative Vorkommen der Vögel, ihre Lebensweise, ihren Zug und ihre Abänderungen. Von Andreas Johannes Jäckel. Herausgegeben von Prof. Dr. Rudolf Blasius. 8vo. München und Leipzig: 1891. Pp. 392.]

Andreas Johannes Jäckel, who died in 1885, was a well-known worker on the Birds of Bavaria, and author of numerous papers and memoirs on its ornithology. The present work, which contains a *résumé* of all his previous contributions to the ornithology of Bavaria in one complete volume, was finished ready for the press in 1882, but received corrections and additions up to the date of his last illness. It is now published as a worthy memorial to an indefatigable and excellent naturalist, under the editorship of his friend Dr. Rudolf Blasius, who commences the volume by a portrait and memoir of the author.

According to Jäckel's observations the avifauna of Bavaria contains 312 species, of which many interesting particulars are given as regards their habits, modes of occurrence, and variations in the kingdom of Bavaria.

45. *MacFarlane on Birds and Eggs from Arctic America.*

[Notes on and List of Birds and Eggs collected in Arctic America, 1861-1866. By R. MacFarlane, F.R.G.S. Proc. U.S. Nat. Mus. xiv. p. 413.]

This is a very interesting series of notes on the birds met with from April 1862 to June 1866 in the district of Fort Anderson, a former Hudson's Bay Co.'s station on the right bank of the Anderson River (lat. 68° 30' N., long. 128° W.), now abandoned. The nomenclature and arrangement are those of the A. O. U. Check-list. Here, during

the breeding-season, *Colymbus adamsi* "abounds"; "quite a large number" of nests of *Xema sabinii* were found, and numerous nests of *Calcarius lapponicus* and *C. pictus* were obtained. *Chordeiles virginianus* occurs as an occasional straggler.

46. *Menzbier and Severtzow on the Ornithology of Turkestan.*

[Dr. N. A. Severtzow. Ornithologie du Turkestan et des Pays adjacents. Par M. le Docteur M. A. Menzbier. Livr. 3. Text and Atlas. Folio. Moscou: 1891.]

The third livraison of this interesting, but somewhat slowly progressing, work was issued last year, and continues the account of the Diurnal Raptores, amongst which several forms almost unknown to European ornithologists are introduced. *Hierofalco altaicus*, so far as we are aware, now described for the first time, is said to be allied to *H. labradorus*. The species figured in the accompanying "Atlas" are *Circus spilonotus*, *Scops brucei*, *Calliope pectoralis*, and *Otis dybowskii*.

47. *Merriam on Birds from Idaho.*

[Results of a Biological Reconnaissance of South-Central Idaho. Annotated List of Birds, with Description of a new Owl. By Dr. C. Hart Merriam. North-American Fauna, no. 5, p. 89.]

Idaho is not a familiar name to ornithologists, and our information relating to its natural history generally is so scanty that our friend Dr. Merriam did well in selecting it for a "biological reconnaissance" in 1890. What a pleasant trip he must have had, accompanied by his chief field-naturalist and two assistants! What would *our* Treasury say if Prof. Flower were to ask them to send four naturalists and suite on a "biological reconnaissance" to Mount Dinkit or Mount Kenia or some other *terra incognita* within the "British sphere of influence"? We will not, however, indulge in envy, but will congratulate Dr. Merriam on his good fortune, and express a hope that many more reconnaissances of the same description may be authorized. Dr. Merriam's report relates principally to mammals, to

which he appears to have devoted special attention. But it contains an "Annotated List of Birds," and in this is a description of a new subspecies of "Dwarf Screech-Owl," proposed to be called "*Megascops flammeolus** (sic!) *idahoensis*," founded on a single specimen.

48. *Meyer on Birds from New Guinea and New Britain.*

[Ueber Vögel von Neu-Guinea und Neu-Britannien. Von A. B. Meyer. Abhandl. k. zool. u. anthrop. Mus. Dresden, 1890-91, no. 4.]

The subjects of this essay are selected from collections made in New Guinea and New Britain by the well-known naturalist Kubary and the brothers Geisler, and forwarded to the Dresden Museum. Among 89 birds included in the list, 12 species and subspecies are characterized as new to science. These are *Geoffroyus orientalis*, *Lorius salvadorii*, *Tanysiptera galatea rubiensis*, *Monarcha melanonotus auran-tiacus*, *Graucalus stephani*, *Rhectes brunneicaudus*, *Ælurædus geislerorum*, *Carpophaga zoeæ orientalis*, *C. westermanni astro-labiensis*, *Megapodius brunneiventris*, *Talegallus longicaudus*, and *Porphyrio neobritannicus*. All these new forms are from Kaiser-Wilhelm's-land, except the *Tanysiptera*, which was obtained at Rubi, in the Bay of Geelvink, and the *Porphyrio*, which is from New Britain. Critical notes and exact localities are given concerning the remaining species. The memoir is of a like nature with, and supplementary to, the paper by the same author published in this Journal for 1890 ('Ibis,' 1890, p. 412).

49. *North on Australian Nests and Eggs.*

[Supplement to the Catalogue of "Nests and Eggs of Birds found breeding in Australia and Tasmania." By A. J. North. Records of the Austr. Mus. vol. i. no. 6. Sydney: 1891.]

In these notes the nesting of several interesting species is

* "*Flammeola*" is a substantive—a diminutive of "*flamma*." There is no such word in Latin as "*flammeolus*." Even according to the principles of the A. O. U. (which decline to conform to the recognized rules of grammar), it would be incorrect to make this change, as Kaup called the typical species *Scops flammeola*. (See Trans. Zool. Soc. iv. p. 226.)

described for the first time. Well-identified eggs of the Cat-bird (*Elurædus viridis*) have now been obtained, former specimens referred to this species having turned out to be non-authentic. The breeding-places of the Australian White Ibis (*Threskiornis strictipennis*) in the Polygonum-bushes in the interior of New South Wales have been visited and their eggs collected. The nests and eggs of *Elurædus viridis* and *Sphecotheres maxillaris* are figured.

50. *Pycraft on Malformations of the Bill in Birds.*

[Notes on some Malformations of the Bill in Birds. By W. F. Pycraft. 8vo. Leicester: 1891. Pp. 12. Reprinted from the Trans. Leicester Lit. & Phil. Soc. iii. pt. 8.]

This is a well-written essay upon a subject which has, as yet, scarcely been treated, except in a desultory way, and is quite worthy of perusal. We cannot, however, agree in the author's objections to the use of the terms "upper and lower mandible" as applied to birds. No doubt they are not quite correct, but they are sanctioned by long usage, very convenient, and quite unmistakable.

51. *Reiser on the Birds of the Museum of Sarajevo.*

[Die Vogelsammlung des bosnisch-hercegovinischen Landesmuseums in Sarajevo. Enthaltend die während der Jahre 1887-1891 gesammelte Avifauna des Occupations-Gebietes. Bearbeitet von Custos O. Reiser. 8vo. Budapest: 1891. Pp. 148.]

The advance made by Bosnia and Herzegovina since their delivery from the grasp of the Turk is well shown by the Museum of Sarajevo, which, as will be seen by the memoir now before us, already possesses a fine and well-arranged collection of the birds of the "occupied" provinces. The 268 species hitherto recorded as having been met with within their limits are represented by 1718 specimens, of which a list, with localities and authorities, is given by Herr Custos Reiser.

52. *Ridgway on a new Goatsucker.*

[Description of a new Species of Whippoorwill from Costa Rica. By R. Ridgway. Proc. U.S. Nat. Mus. xiv. p. 465.]

Mr. Ridgway describes a new species of *Antrostomus* from Costa Rica under the name *A. rufo-maculatus*. It agrees with *A. vociferus* in size and proportions, but seems to come somewhat near *A. sericeo-caudatus* in coloration. Mr. Salvin informs us that Mr. Ridgway has recently sent him for inspection the type of this species, and that it proves to be identical with his *Antrostomus saturatus* (P. Z. S. 1870, p. 203).

53. *Ridgway on new and rare Birds from Honduras.*

[Notes on some Birds from the Interior of Honduras. By Robert Ridgway. Proc. U.S. Nat. Mus. xiv. p. 467.]

From specimens in a collection of nearly two hundred birds from the interior of Honduras recently acquired by the U.S. National Museum, Mr. Ridgway characterizes as new subspecies *Platypsaris aglaiae hypophæa* and *Pithys bicolor olivascens*. He also describes the female of *Gymnocichla chiroleuca*, and records the occurrence of other species not previously known in this locality.

54. *Ridgway's 'Notes on some Costa Rica Birds.'*

[Notes on some Costa Rica Birds. By Robert Ridgway. Proc. U.S. Nat. Mus. xiv. p. 473.]

These notes are based upon a small collection of birds sent by the Director of the Costa-Rica National Museum, Dr. Anastasio Alfaro, to Mr. Ridgway. The young of several interesting species are described, amongst them a specimen of a *Picolaptes*, which shows that in all probability *P. gracilis* is only the young of the well-known *P. compressus*.

The new birds described are *Platypsaris aglaiae* and *Scytalopus argentifrons*, the latter introducing a new species and a new family into the Central-American ornith.

55. *Ridgway on Pachyrhamphus albinucha.*

[Note on *Pachyrhamphus albinucha*, Burmeister. By Robert Ridgway. Proc. U.S. Nat. Mus. xiv. p. 479.]

Mr. Ridgway has made a very interesting discovery. In the stores of the U.S. National Museum he has found a specimen of the *Pachyrhamphus albinucha* of Burmeister, described by that author in 1868 (P. Z. S. 1868, p. 635), but since absolutely overlooked. This curious form has a pycnaspidean tarsus, and must consequently belong to the Cotingidæ, being probably most nearly allied to *Casiornis*. Mr. Ridgway proposes the new generic term *Xenopsaris* for it. It is found, according to Dr. Burmeister, in the sedge of the shores of the Rio de la Plata*.

56. *Ridgway on two new Thamnophili.*

[Description of two supposed new Forms of *Thamnophilus*. By Robert Ridgway. Proc. U.S. Nat. Mus. xiv. p. 481.]

Mr. Ridgway characterizes two new species of *Thamnophilus* from specimens in the U.S. National Museum. These are *T. albicrissus* and *T. trinitatis*. The last is certainly from Trinidad, the first apparently so.

57. *Ridgway on a new Ammodramus.*

[Description of a new Sharp-tailed Sparrow from California. By Robert Ridgway. Proc. U.S. Nat. Mus. xiv. p. 483.]

A new subspecies is described as *Ammodramus caudacutus becki*, from Santa Clara county, California.

58. *Sharpe's 'Monograph of the Paradiseidæ.'*

[Monograph of the Paradiseidæ, or Birds of Paradise, and Ptilonorhynchidæ, or Bower-Birds. By R. Bowdler Sharpe, LL.D., F.L.S., &c. Part I. Folio. London: H. Sotheran & Co., 1891.]

The first part of Dr. Bowdler Sharpe's new monograph of

* Since this notice was written we have observed that Dr. Cabanis (Allg. deutsche Gesellsch. Berlin, Bericht ix. p. 4) has proposed another generic term (*Prospoietus*) for the same bird, which he considers to belong to the Tyrannidæ, near *Serpophaga*.

the Paradise-birds is now before us, and contains ten plates. Amongst these many old friends from Gould's works are recognizable, but several of the illustrations are new, and both sexes of *Prionidura newtoniana*—a remarkable form of Bower-bird from Queensland*—are now figured for the first time.

Tectonornis is proposed as a new generic name for *Scenopæus dentiostriis*, in consequence of *Scenopæus* being preoccupied. The following species are figured:—

<i>Lycocorax pyrrhopterus.</i>	<i>Paradisea apoda.</i>
<i>Parotia lawesi.</i>	<i>Prionodura newtoniana.</i>
<i>Cicinnurus regius.</i>	<i>Xanthomelus aureus.</i>
<i>Craspedophora magnifica.</i>	<i>Chlamydodera orientalis.</i>
<i>Epimachus meyeri.</i>	<i>Tectonornis dentiostriis.</i>

59. Sharpe on the Birds of Yarkand.

[Scientific Results of the Second Yarkand Mission; based upon the Collections and Notes of the late Ferdinand Stoliczka, Ph.D. Aves. By R. Bowdler Sharpe, LL.D., F.L.S., F.Z.S., &c. Published by order of the Government of India. Folio. London: 1891.]

After a long delay, caused mainly by unavoidable circumstances, we have before us a complete and satisfactory account of the ornithological collections formed by the late Dr. Ferdinand Stoliczka during the Second Yarkand Expedition of 1873-74. Stoliczka, it will be recollected, died under somewhat tragic circumstances on his way back from Yarkand to India on this expedition†. The collections that he made were placed in Mr. Hume's hands, and Mr. Hume, we are told, had actually prepared an account of them, which was unfortunately destroyed while still in MS. The collections were ultimately brought to England along with the great Hume Collection by Dr. Bowdler Sharpe, to whose unwearied exertions we are now indebted for the present memoir. In order to increase the value of the report, Dr. Sharpe has included in his list all the species of which specimens were obtained by Dr. Henderson during the first Yarkand Expedition, and

* Cf. *Ibis*, 1890, p. 264.

† See '*Nature*,' vol. x. p. 185 (1874).

by Dr. Scully during the second expedition, and has added extracts from Colonel Biddulph's field-notes, which were communicated in MS. to Mr. Hume. We have, therefore, in the present volume a pretty full account of the avifauna of Yarkand, or Eastern Turkestan, so far as our present knowledge extends.

The total number of birds recorded in this work is 350, of which no less than 214 are Passeres. Amongst these, as might be expected, the characteristic genera *Montifringilla*, *Emberiza*, *Otocorys*, *Phylloscopus*, *Saxicola*, and *Accentor* are well represented. Three species of *Podoces*, one of *Leptopæcile*, and one of *Chimarrhornis**, all types peculiar to this subdivision of the Palearctic avifauna, were met with. *Hierofalco milvipes* is now recognized as a valid species, distinct from *H. sacer*.

We have, however, one fault to find with the volume. This is that there is no explicit distinction made in it between the species pertaining to the Yarkand avifauna and those belonging only to Kashmir and the rest of the Indian territory traversed by the Expedition on its way up. At first sight one would naturally suppose that members of the families Megalæmidæ, Indicatoridæ, and Psittacidæ, being registered in the present list, are found in Yarkand. But this is by no means the case. On inspecting the exact localities, which are in every case properly stated, it will be observed that *Indicator xanthonotus*, *Megalæma marshallorum*, and *Palæornis schisticeps* were met at places in Kashmir or Ladakh, and not in Yarkand. It would, in our opinion, have been much better to have arranged the Cis-Himalayan and Trans-Himalayan specimens under two different heads, and thus to have avoided all risk of making confusion between two very different ornithogeographic areas. At any rate "Kashmir" or "Ladakh" should have been added after the localities in the Trans-Himalayan district. A still better plan would have been to show the track of the Expedition on a map, and thus indicate the localities exactly. Some of them, as given in the present work, are not to be found in any atlas.

* Dr. Sharpe now writes this name "*Chamarrhornis*," which is incorrect, the derivation being χεῖμαρρος, a brook, in Latin *chimarrhus*.

The following species are well figured in this work:—*Hierofalco gyrfalco*, *Scops brucii*, *Carine bactriana*, *Podoces biddulphi*, *Rhodopechys sanguinea*, *Carpodacus stoliczkæ*, *Ægithalus coronatus*, *Leptopæcile sophiæ*, *Tribura major*, *Phylloscopus tytleri*, *Cettia orientalis*, *Dendrocopus leucopterus* (two plates), *Turtur stoliczkæ*, and *Tetraogallus himalayensis*.

In a supplement are added some plates prepared by Mr. Hume for a projected work on the 'Avifauna of the British Indian Empire,' but perhaps a little out of place here, as the species represented are not found in Yarkand. They represent *Hierofalco saker*, *Scops balli*, *Carine pulchra*, *Heteroglaux blewitti*, *Garrulus leucotis*, and *Cyanops incognita*.

60. *Shufeldt on the Osteology of the Water-birds.*

[Contributions to the Comparative Osteology of Arctic and Subarctic Water-birds. Part IX. By R. W. Shufeldt, M.D., C.M.Z.S., &c. Journ. Anat. & Physiol. xxv. p. 509.]

In the ninth of his series of memoirs on arctic and sub-arctic Water-birds (*cf.* Ibis, 1891, p. 287), Dr. Shufeldt diverges somewhat from his subject to study *Chionis* and compare it with the Gulls and Plovers. The sternum of *Chionis* is more like that of *Hæmatopus* than that of the Laridæ, and such is also the case with the pelvis and pectoral and pelvic limbs. On the whole *Chionis* has its "nearest living allies" in *Hæmatopus* and in "such forms as *Glareola*."

61. *Shufeldt on Tertiary Fossil Birds from N. America.*

[Tertiary Fossils of North-American Birds. By R. W. Shufeldt, M.D. Auk, viii. p. 365.]

Dr. Shufeldt has examined an extensive series of remains of fossil birds from the Silver-Lake region of South-western Oregon, and has been able to identify 51 species, of which 13 appear to be new to science. He now gives a preliminary account of the collection, which contains altogether some 1500 specimens, mostly water-birds (*Gaviæ*, *Steganopodes*, *Anseres*, *Herodiones*, and *Limicolæ*), and promises a quarto memoir on the subject later on.

62. *Stone on the Species of Molothrus.*

[A Revision of the Species of *Molothrus* allied to *M. bonariensis* (Gm.). By Witmer Stone. Auk, viii. p. 344.]

Mr. Stone has attempted to solve the problems of the number and proper names of the species of *Molothrus* allied to *M. bonariensis*, and has certainly thrown some light on this difficult subject. An examination of the specimens of Icteridæ in the Museum of the Academy of Natural Sciences of Philadelphia has shown that Cassin's supposed *Lamprosar tanagrinus* and *L. guianensis* are both referable to *Molothrus atronitens*, Cab., and that Cassin's *Lamprosar cabanisi* is the same as what is usually called *Molothrus cassinii*. Finally Mr. Stone recognizes five species of this group of *Molothrus*, and proposes a new name (*M. venezuelensis*) for *M. discolor* of Cassin (non *Passerina discolor*, Vieill.).

63. *Suchetet on Wild-bred Hybrids.*

[Les Oiseaux Hybrides rencontrés à l'état sauvage. Par André Suchetet. Deuxième Partie: Les Palmipèdes. Mém. Soc. Zool. France, iv. p. 109.]

M. Suchetet describes in this memoir the hybrids bred in a free state that have been recorded among the Anatidæ, Laridæ, Ardeidæ, and Charadriidæ. The greater part of the memoir is, as was to be expected, taken up by the Anatidæ, amongst which, as is well known, cross-breeding is more prevalent than in any other group, except, perhaps, the Gallinæ. M. Suchetet records 24 cases, but we are not sure that he has quite exhausted the list. In the Laridæ only one instance of hybridization is registered, namely *Sterna paradisea* × *S. hirundo*. Amongst the Ardeidæ (referred by M. Suchetet to the Gruidæ!) there is likewise one case, *Ardea cinerea* × *A. purpurea*, and among the Charadriidæ also a single instance, *Hæmatopus unicolor* × *H. longirostris*.

64. *Winge on Birds observed at the Danish Light-Station.*

[Fuglene ved de danske Fyr i 1890. 8de Aarsberetning om danske Fugle. Ved Herluf Winge. Vidensk. Medd. naturh. Foren. Kjøbenhavn. 1891, p. 61.]

This is the eighth of a series of yearly reports on the birds

met with at the numerous light-stations on the Danish coasts and islands, of which a clearly drawn chart is appended. In 1890 examples of 68 species were observed. Full details are given of all these occurrences, and the whole subject is completely elaborated.

65. *Zaroudnoï on the Birds of Trans-Caspia.*

[Recherches Zoologiques dans la Contrée Trans-Caspienne. Par N. Zaroudnoï. Bull. Soc. Imp. Nat. Moscou, 1889-90.]

After a lengthened description of his journeyings during his third expedition into Trans-Caspia, M. Zaroudnoï gives a systematic list with notes of the Vertebrates met with and collected. The birds were of 309 species. We observe that the Pheasants mentioned are *Ph. persicus* and *Ph. principalis*, of which the areas are now succinctly described.

XXVIII.—*Letters, Extracts, Notices, and Obituary.*

THE following letters, addressed to the Editor, have been received since our last issue :—

SIR,—In my recent paper on *Ptilopus* (Ibis, 1891, pp. 566-584) there is a statement which I beg leave to correct. At p. 577, a distinguishing point of the adult *P. fasciatus*, Peale, is said to be "a deep magenta patch in middle of abdomen." This is, I think, a wrong inference of mine from the statements of various writers. After examining the series of this Pigeon in the museums at Hamburg and South Kensington, I find that there never exists a patch distinct from the broad line of blackish mentioned by me as a second characteristic, but that this line spreads out in some specimens so as to form a patch, while in others it remains a slight short bar. The rich magenta colour which it assumes, darker than that of the crown, is, I believe, a mark of maturity.

Yours &c.,

L. W. WIGLESWORTH.

London,

December 15th, 1891.

SIR,—During the last fortnight several examples of *Ampelis garrulus* have been shot in the provinces of Overijssel and Drenthe, so that it seems that a southern migration of these birds is taking place.

It is a long time since birds of this species visited this country.

Yours &c.,

's Graveland, Hilversum,
16th December, 1891.

F. E. BLAAUW.

SIR,—To the remarks on my short paper on Birds from Mindoro in the last 'Ibis' (above, p. 170) you have added a footnote, in which you state that in my rough prefatory sketch of what is known of the birds of the Philippines I have omitted mention of a very important paper on the birds of those islands, *i. e.* that of Dr. Sharpe on the birds collected by Dr. Steere during his *first* expedition. Such is not the case, as I mentioned Dr. Steere's well-known first expedition in the first line on p. 200. Moreover, in the tenth line on the same page I said :—"Quite recently Dr. Steere recommenced his investigations,"—clearly indicating that I was aware of his previous work. I did not quote the title and page of Dr. Sharpe's article, as a general reference to that as well as to other articles seemed to be sufficient.

Yours &c.,

London,
Feb. 1st, 1892.

ERNST HARTERT.

SIR,—In my paper on the genus *Turnix*, published in 'The Ibis' for 1889, I discussed at some length (pp. 471, 472) my reasons for believing that *Turnix nigricollis* from Madagascar forms an exception to the other members of the genus in having the plumage of the male exactly similar to that of the female. I have now, however, been able to ascertain that, in spite of the evidence of "reliable collectors," the conclusions there arrived at were wrong, and that the *female only* has the black throat and the grey and rust-coloured patches on the sides of the chest.

About three months ago a number of these little Hemipodes, supposed to have come from India, were received by Mr. Jamrach. Thanks to Lord Lilford, I heard of their arrival some time after, and then, out of what remained unsold, only seven had survived, viz. five females and two males. These were sent down to me at the Natural History Museum, and I purchased two pairs, but one of the males was nearly dead when it arrived, and expired shortly after. The others seemed fairly healthy, and I hoped it might be possible to get them to breed in confinement; but within a month, in spite of every care and attention, they all died, death, in each case, being immediately due to pneumonia. One by one I had the melancholy pleasure of dissecting them, and found that the brightly-coloured birds were both females, while the dull ones with barred breasts were males. The younger of the two females still had traces of barring, similar to that of the male, on the chest and breast.

These birds became very tame almost immediately in confinement, and frequently uttered a low creaking note, reminding one strongly of the sound produced by a wheelbarrow that wants oiling. The females, especially when startled or excited, have a curious habit of jerking up their short tails in a very Rail-like manner. I believe this is the first time that specimens of *T. nigricollis* have been brought alive to this country.

Besides the four specimens mentioned above, I dissected a number of others of both sexes, with similar results.

W. R. OGILVIE GRANT

March 8th, 1892.

(Nat. Hist. Museum).

New Birds from New Guinea.—We are sorry to see that the Naturalists of Queensland continue to publish scientific papers in their Parliamentary Blue-books. There is no objection to such papers being reprinted in this way, but they should, in our opinion, be originally issued in some scientific periodical.

The 'Annual Report on British New Guinea' for the

year 1890-91, presented to both Houses of Parliament at Brisbane in 1892, contains a report by Mr. C. W. De Vis, the Curator of the Queensland Museum, on some "zoological gleanings" obtained by Sir William Macgregor, in various parts of his Papuan territories, during the previous year. Mr. De Vis commences by telling us that a specimen of "a probably new Bird of Paradise" was killed during the ascent of Mount Kivio, but unfortunately "fell into a ravine beyond recovery." Amongst a fine series of birds obtained on Mount Suckling, New Guinea, the following species are described as new:—*Rhipidura concinna*, *Pacilodryas vicaria*, *Gerygone insperata*, *Melipotes maculata*, *Amanocichla* (gen. nov. Timeliidarum) *sclateriana*, and *Paramythia* (gen. nov. Sturnidarum) *montium*. The Paradise-birds met with on Mount Suckling were *Lophorina superba*, *Astrarchia stephanie*, *Epimachus macleayanus*, *Craspedophora magnifica*, and *Amblyornis subalaris*. A description and figure of the bower of the last-named species are given. From Sudest Island *Eopsaltria sudestensis* is described as new, as is also *Malurus moretoni* from Bartle Bay.

Annals of Scottish Natural History.—Under this title some of our friends in Scotland have started a new periodical, "with which is incorporated 'The Scottish Naturalist,'" and have favoured us with a copy of the first number. It is edited by Mr. Harvie-Brown, Dr. Trail, and Mr. Eagle Clarke—all names well known to the cultivators of Natural Science, and will be devoted principally to "original matter relating to the Biology of Scotland, recent and fossil." The first two articles are both ornithological—on the Great Spotted Woodpecker in Scotland by Mr. Harvie-Brown, and on the occurrence of Wilson's Petrel in Jura by Mr. H. Evans. There are besides a number of short notes on the occurrences of rare birds in various parts of Scotland. Readers of 'The Ibis' will find much that is interesting in the 'Annals of Scottish Natural History,' and we beg leave to commend it to their notice.

Boucard's "Humming-bird."—On looking over the pages of Mr. Boucard's monthly periodical 'The Humming-bird,' of which the volume for 1891 is now complete, we find the following supposed new species of birds described in it:—*Phaethornis gounellei* from Brazil; *P. columbianus* from Colombia; *P. guianensis* from Demerara; *P. whitelyi* from Roraima (Whitely); *Aphantochroa alexandri* from Demerara; *Florisuga salli* from Southern Mexico; *Eustephanus burtoni* from Chile; *Lampornis obscura* from Brazil; *Lafresnaya cinereo-rufa* from Colombia; *Helangelus henrici* from Ecuador; *Pionus bridgesi* from Bolivia; *Bellona superba* from St. Vincent; *Lesbia boliviana* from Bolivia; *Calliphlox roraimæ* from Roraima (Whitely); *Hylocharis guianensis* from Guiana (Whitely); and *Ramphocelus chrysopterus* from Panama. Whether these are really new species or not we have no means of judging, but as regards the *Trochilidæ*, to which family most of these belong, we should be inclined to doubt whether Mr. Salvin, who has recently completed his Catalogue of the birds of this group, can have overlooked so many of them, especially as we know that all Whitely's collections have passed through his hands.

The Sea-Eagles of N.E. Asia.—An article on the Rap-torial Birds in the Zoological Garden, Hamburg, by Dr. Bolau in 'Der Zoologische Garten' for September last (xxxii. p. 265) contains an account of the specimens of *Haliaetus pelagicus* and its near ally *H. branickii*, of which the Hamburg Society are the fortunate possessors*. The first was received in December 1882 from the Amoor, and is now in full adult plumage. The second was obtained from Corea in February 1887, and was for several years supposed to be only the young of *H. pelagicus*. It is now also adult and is at once distinguishable from its allied form by the want of the white shoulders and white thighs—only the tail being white. There are three fine examples of *H. pelagicus* in the British Museum, but none of *H. branickii*.

* Cf. Sclater, P. Z. S. 1891, p. 374.

Nesting of the Victoria Rifle-bird.—From the 'Victorian Naturalist' of January 1892 we learn that a nest of the Victoria Rifle-bird (*Ptilorhis victoriae*) was found on November 19th, 1891, by Mr. Dudley Le Souëf and Mr. H. Barnard during a visit to North Barnard Island, about forty miles off the coast from Cardwell, Queensland. The hen bird was watched for some time, and seen to fly into the crown of a *Pandanus*-tree growing close to the open beach. The nest was about 10 feet from the ground, and the bird sat quietly, although the explorers were camped only about 5 feet away from the tree. There was a single egg in it, partly incubated. The nest was somewhat loosely constructed of broad dead leaves and green branchlets of climbing plants and fibrous material. Inside were two large concave-shaped dead leaves underneath pieces of dry tendrils, which formed a springy lining. The egg is described as having the ground-colour of a fleshy tint, streaked longitudinally with reddish brown and purplish brown, and measuring 3·14 by 2·32 cm.

New Myzomela from New Ireland.—In our notice of the third part of Count Salvadori's 'Aggiunte alla Ornitologia della Papuasias e delle Molucche' (above, p. 176), we omitted to state that a new species of *Myzomela* from New Ireland is described there, from a specimen in the British Museum, and named *Myzomela pulchella*.

New Expeditions.—Mr. O. V. Aplin, Member of the B. O. U., is making arrangements to start in August next on a Collecting-Expedition to Uruguay, where he has been offered free quarters on an Estancia near the town of Minas. Mr. Aplin will endeavour to make as complete a collection as possible of the birds of the district of Minas and of their nests and eggs. Very little is at present known of the Ornithology of this part of Uruguay. Except the specimens collected by Darwin at Maldonado during the voyage of the 'Beagle,' and two small collections lately received by Mr. Dalgleish, hardly any materials exist in European Collections

for the compilation of an Avifauna of this State, though most of its birds are, doubtless, also found in Argentina.

The joint Committee of the Royal Society and the British Association for investigating the Zoology of the Sandwich Islands have selected Mr. Robert C. L. Perkins, B.A., of Jesus College, Oxford, as Naturalist and Collector, from amongst several candidates for the post. Mr. Perkins has, we believe, already left England for Honolulu, in order to proceed with his researches on the Fauna of the Sandwich Islands. As regards the Birds, Mr. Scott Wilson's work, now in course of publication, will bring this subject up to the level of our present knowledge. But even here there are still many obscure points to be made out, which Mr. Perkins will do well to investigate, and in the less known islands a diligent search will probably result in the discovery of some more new species.

Note on Calliste margarethæ.—Mr. Allen has most kindly allowed me to acquire by exchange from the American Museum four examples of his newly described *Calliste margarethæ* (Bull. A. M. N. H. iii. p. 351) from Chapada, Matto Grosso. I acknowledge the distinctness of this form, but wish to point out that, judging from the locality, it is probably the same as the *Lindo bello* of Azara (Apunt. i. p. 387), upon which Vieillot founded his *Tanagra formosa*. Vieillot's name has hitherto been usually referred to *Calliste flava* (cf. Cat. Birds, xi. p. 113). Before deciding this question definitely, however, it would be better to have specimens from Paraguay for comparison. I propose to add my specimens of *Calliste margarethæ* to the series in the British Museum.—P. L. S.

Great Crested Grebe breeding in India.—In the last number of the 'Journal of the Bombay Natural History Society' (vol. vi. no. 4, p. 501) Mr. H. Bulkley records a case of *Podiceps cristatus* breeding on a tank near Kharaghora in August 1890.

Proposed Memorial to the Brehms and Schlegel.—Dr. Koepert, of Altenburg, informs us that it is proposed to erect in that city a memorial of Christian L. Brehm, Alfred Brehm, and H. Schlegel, three well-known Ornithologists, who were all natives of Saxe-Altenburg. In case any members of the B. O. U. or other friends should wish to assist in this laudable undertaking, we shall be much pleased to forward their contributions.

Obituary.—JOHN PETER VAN WICKEVOORT-CROMMELIN, the distinguished Ornithologist of Holland, who died suddenly at Haarlem on the 19th October, 1891, was born in the same city on the 9th January, 1830. In his youth he studied law, and took his degree in that faculty at Leyden in 1852, after which he devoted himself to zoological studies for another year under Temminck at the same University. For many years Heer van Wickevoort-Crommelin was director of the Society of Sciences at Haarlem. He was always very short-sighted, and his eyes grew gradually worse, so that not many years after his marriage, which took place in 1854, he became totally blind. Notwithstanding this great misfortune, he continued to augment and perfect the beautiful collection of native birds which he had previously commenced. In this he was materially assisted by a wonderful memory and by a very accurate knowledge of avian structure. His memory was so good that, in his collection of many hundreds of stuffed birds, he could always find any individual specimen, and could moreover, if required, give full particulars about its external appearance and the date and place of its capture.

The results of Heer van Wickevoort-Crommelin's studies on the birds of Holland were chiefly published in the '*Archives Néerlandaises*' and in the '*Tijdschrift voor de Dierkunde*.' His unrivalled collection of the birds of Holland has been bequeathed to the Leyden Museum.

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XXIX.—*On the Birds of East Prussia.*

By ERNST HARTERT.—Part I.

It is my hope that it will not be without interest for the readers of 'The Ibis' to peruse some short remarks on the birds of a part of Germany which I tried for several years to explore, and which is still not only the least known of all parts of Germany, but also the most interesting one as regards its ornithology. This latter statement is proved to be beyond doubt when I mention the names of three birds which *regularly breed* in East Prussia—*Carpodacus erythrinus*, *Nucifraga caryocatactes*, and *Syrnium uralense*, all of which I have had opportunities of observing in their breeding-haunts.

So little is generally known about the birds of East Prussia that English ornithologists, in their writings, hardly ever recognize the existence of this large province, so full of bird-life. Even Mr. Seebohm, in his great work, 'A History of British Birds,' which contains so many good notes about German birds from the author's own experience, generally ignores that country. Thus, for instance, he states that *Aquila naevia* "breeds in North Germany from Hanover to Danzig," while this bird is equally or

more common east of Danzig, throughout East Prussia, an area of 14,280 square miles. Again, in 'The Birds of the Japanese Empire,' he gives Pomerania as the habitat of his *Sitta cæsia homeyeri*, whereas it is found in the extreme east of Prussia, but not in Pomerania.

As would be anticipated, East Prussia, in consequence of its north-eastern situation, is the home of several species of birds that do not regularly occur in other parts of Germany.

The ornis of East Prussia is that of the plains, no mountains of considerable height rising in this province, and even the Galtgarben and the Gonscha Gora being too low to have any appreciable influence on the ornis.

Water abounds; the most northern end of the province and the tract called the Samland, *i. e.* the country north of Königsberg and Pillau, border the Baltic Sea, but the greater part of the coast-line does not quite extend to the sea. There are situated the vast freshwater-basins known as the Kurische and the Frische Haff, formed by the rivers Niemen and Pregel. These are separated from the sea by a narrow line of land, the Kurische and the Frische Nehrung, mostly consisting of shifting sand-downs, but partly covered by forest. In the southern and south-eastern parts of the province are a great number of smaller and several large lakes, the largest being the Spirding and the Mauersee. Of the rivers only the Niemen and the Pregel are worth mention. The soil is very variable: along the sea-shore and in great tracts, especially of the south, it is dry sand, thickly covered with pine-forest, whilst in other parts the soil is rich, heavy, and fertile, presenting to view fields, meadowy grounds, and often also swamps, forests of fir, of *Populus tremula*, *Carpinus betulus*, oak and birch, and swampy woods of *Alnus glutinosa*. Many of the fir-forests of Masuren* were almost primeval till nearly forty years ago, when the caterpillars of *Lasiocampa monacha* ravaged them, and by their ravages made them much more accessible to the visitor. But even now vast forests are found, where no whistle of trains or of manufactories sounds through the

* Masuren (or Masovia) is the south-eastern district of East Prussia.

air, and where the cries of the Eagle and the Peregrine Falcon are more familiar than the shouts of men.

This variety of scenery in connection with the comparatively sparse population (only 138 to the square mile) supplies the necessary conditions of life for many animals. Every winter wolves pay unwelcome visits to the forests near the Russian frontier; not very long ago the lynx did the same (see Altum, 'Forstzoologie,' vol. i., and Hartert, 'Feinde der Jagd,' p. 118), and even now the forests on the Kurische Haff and round the Zehlau-Bruch are the home of the huge Elk.

The north-eastern character of the fauna is obvious in all the orders of animals, as is proved by the occurrence of such forms as *Carabus menetriesi* and *Dytiscus lapponicus*, for instance, among the beetles, *Argynnis laodice* and others among the lepidoptera, and *Lepus variabilis* among the mammals.

So early as in the past century there were published many notes about the birds of East Prussia. The writings of the ornithologist J. T. Klein, 1760-1766, contain many notes from the eastern parts of Prussia, and a long and interesting list of the birds inhabiting Prussia is given in Bock's "Preussische Ornithologie," in the 'Naturforscher' of 1776, 1778, and 1779. Of course there are many mistakes in these old works; some names, many of which are not binomial, are unintelligible, and many even common species, especially among the small birds, are not noticed. Subsequently to these old authorities there have been published many useful notes about the ornis of East Prussia, though many more about West Prussia, and lists of the birds inhabiting both provinces, are given by Ebel (1823) and by Rathke (1846). But no recent attempt has been made to furnish a complete list of the birds that at present inhabit this country, except by the writer of this article, who published in the 'Mittheilungen des ornithologischen Vereins in Wien,' 1887, a list of the birds of East and West Prussia under the title "Vorläufiger Versuch einer Ornis Preussens." This article was published during my trip to Sumatra and India,

and inconveniently scattered over many numbers of the periodical. Since its publication a few other observers have visited that country, specimens of some of the interesting species have reached the Berlin Museum, notes have been published here and there in German periodicals, and I have received from time to time notes from reliable friends, as well as eggs and specimens in the flesh, especially from my friend the Royal Forester Wels. Many of my notes of 1887 must therefore now be extended or altered. Lastly, I may mention that during my stay in East Prussia I not only "observed" birds, but carefully collected both skins and eggs, from those of the common Finches to those of the rare Owls and Eagles; that I have compared these carefully with specimens from other parts of Germany; and that while most of the skins are in the large collection of the late E. F. von Homeyer, most of the eggs remain in my own possession.

The following list contains the species that at present undoubtedly inhabit East Prussia, or certainly occur there as migrants.

ÆDON PHILOMELA (Bechst.).

The large Eastern Nightingale is very common in East Prussia wherever it finds leafy woods with plenty of undergrowth, gardens, or swampy tracts and forests of *Alnus glutinosa*. It is absent from the pine-wood districts of the south-east.

(*Ædon luscinia*, the Common Nightingale, does not occur east of the Vistula. In some cases it has been recorded erroneously.)

The eggs of the Eastern Nightingale are, as a rule, somewhat larger than those of the smaller form, but many are undistinguishable, and I have come across eggs of *A. luscinia* that exceed in size any I have seen of *A. philomela*.

I do not know whether a series of *A. philomela* from East Prussia and Poland has ever been carefully compared with specimens from Southern Hungary. I am not at all sure that they all belong to one subspecies.

CYANECULA WOLFI, Brehm.

The White-spotted Blue-throat is rather rare. When I came to East Prussia from Silesia, where it is very numerous in the willows on the Oder, I looked in vain for this lovely bird. At present I know only two places where it occurs, and no doubt breeds, although it is probably present in many other localities also.

CYANECULA SUECICA (L.).

The Arctic Blue-throat occurs on migration in autumn, but is not at all common, as it is in Western Germany, during this period.

ERITHACUS RUBECULA (L.).

Breeds commonly, and passes through on migration in great numbers, especially at the end of March and in autumn.

RUTICILLA PHENICURUS (L.).

Arrives in April; last seen at the beginning of October. Very numerous during migration in September.

RUTICILLA TITYS (L.).

Rare. It breeds in very small numbers in some brick-kilns near Königsberg and in the S.W. of the province. It has lately been observed in the midst of the town of Königsberg.

SAXICOLA GENANTHE (L.).

Common. Once I found a clutch of eggs that were all about one third smaller than the eggs of this bird usually are.

PRATINCOLA RUBETRA (L.).

Common.

(*Pratincola rubicola* has never been observed in East Prussia. In the J. f. O. 1885, p. 91, this species was given as an inhabitant of East Prussia; but the observation cannot be relied on, since specimens were not procured.)

TURDUS MUSICUS, L.

Common in the breeding-season, and passing through in great numbers.

TURDUS ILIACUS, L.

The northernmost part of East Prussia, near the fortress of Memel, is perhaps the only place in Germany where this Thrush used to breed regularly; and there is every reason to believe that it does so at the present time. About fourteen years ago it was not very rare there, and several nests and eggs were obtained, the latter being now almost all in the late E. von Homeyer's collection and in my own. In a few cases it has been found breeding in Germany out of East Prussia, but these are probably exceptions. It passes through in enormous numbers, chiefly in October and the first half of April, but is not seen in winter.

TURDUS VISCIVORUS, L.

Breeds regularly twice a year, but not in large numbers.

TURDUS PILARIS, L.

Breeds regularly, sometimes in single pairs, but more often in society. There is no reason whatever to doubt that these birds have always been pretty common. They were breeding here about a hundred years ago, but nowadays they seem to have become rather less numerous.

(TURDUS VARIUS, Pall.

I know of two occurrences of this bird in West Prussia, near to East Prussia. One, killed near Elbing in September 1842, is in the museum at Königsberg, and the wings of the other, killed in 1879, are preserved in the same museum.)

(TURDUS SIBIRICUS, Pall.

A female, killed late in September 1851 near Elbing, West Prussia, is in the Homeyer collection.)

TURDUS TORQUATUS.

Much rarer than in Western Germany. It occurs singly and rarely as a migrant in October.

TURDUS MERULA.

This bird, which is so familiar in most of the towns of West Germany, is not at all common in East Prussia, and does not breed in towns and villages. It is a somewhat shy

and rare inhabitant of the outskirts of forests and smaller woods, and only in winter comes into the gardens. It is, however, not a distinct form, specimens agreeing with those of other countries.

(*TURDUS ATRIGULARIS*.)

May occur occasionally as a rare visitor, as it has been found twice near Elbing and Danzig.)

PHYLLOSCOPUS RUFUS (Bechst.).

Arrives first of its congeners, and breeds first, but regularly rears a second brood. Passes through in great numbers until October.

PHYLLOSCOPUS TROCHILUS (L.).

Almost equally common with *P. rufus*. Arrives a little later.

PHYLLOSCOPUS SIBILATOR (Bechst.).

Arrives latest of its congeners. Common in the larger woods, and even in the dry pine-forests. Passes through in great numbers, but I have not seen it later than September.

HYPOLAIS HYPOLAIS (L.).

Common.

LOCUSTELLA NÆVIA (Bodd.).

Not rare in the northern and north-eastern parts. Its remarkable locustelline song can be heard all night long, best in morning and evening, but also often in the middle of the day. In autumn it is found during migration in low bushes and in potato-fields or amongst other low crops.

LOCUSTELLA FLUVIATILIS (Wolf).

Has been shot at Ibenhorst, near the Kurische Haff, where it seems to be not very rare in summer. Although I often heard its song when a boy in Silesia, I did not meet with this bird elsewhere in East Prussia. Recently, however, it has been obtained on the Kurische Nehrung and near Pillau by Herr Lindner. The song of *L. fluviatilis* (which Herr von Middendorff, I, and other members of the Congress at Budapest heard in the swampy forests near the Hansag, in

Hungary) cannot be mistaken for that of *L. nœvia*, as it is composed of *two* syllables, while that of the latter is continued much longer and in *one* syllable. The song of *L. luscinoides* was common—though not heard by many, and declared to be the voice of a large grasshopper by one person (it was May!)—among the endless reeds of the Hansag, in Hungary. Since I had not heard the note of any *Locustella* during several years, I at first believed the songster to be *L. nœvia*, but from the nature of the locality I knew that that was almost impossible. The song of *L. luscinoides*, however, can without difficulty be distinguished from that of *L. nœvia* by being shorter, deeper, and not so loud and shrill.

The occurrence of *L. luscinoides* in East Prussia has recently been announced at a meeting of the German Ornithological Society in Berlin, but cannot be taken for granted until some ornithologist has verified the statement by examining the bird, if a specimen has been procured at all.

ACROCEPHALUS AQUATICUS (Gm.).

I have only once shot a specimen near the Frische Haff and observed it twice in August. It is probably less rare than it is believed to be.

ACROCEPHALUS SCHÆNOBÆNUS, L. (= *phragmitis*).

Common. Arrives at the end of April. The nest is always placed close to, but not exactly on, the ground.

ACROCEPHALUS STREPERUS (Vieill.).

Common in suitable places.

ACROCEPHALUS ARUNDINACEUS (L.) (= *turdoides*).

The Great Reed Warbler is very common where *Arundo phragmites* abounds. The nest is usually placed among the reeds, but I found it occasionally fixed to the twigs of willows, and a case is known where it was high up in a birch tree. A favourite food of the Great Reed Warbler is reed-beetles (*Donacia phragmitis*, *D. sericea*, and allied species), which are frequently found in its stomach.

ACROCEPHALUS PALUSTRIS (Bechst.).

Not rare in suitable localities, but not very numerous.

ACROCEPHALUS FRUTICOLA (Naum.).

In July 1882 I saw a pair of a species of *Acrocephalus* in the bushes, intermixed with reeds, grass, *Epilobium*, and other plants, that bordered a little ditch running through some swampy meadows near Königsberg. I took them for *A. palustris*, but something in the song of the male seemed to me peculiar, and therefore I shot it and searched for the nest, but unsuccessfully. Without material to compare, I was convinced that I had a specimen of *A. palustris* in hand, but afterwards E. von Homeyer, to whom I sent the specimen with other skins, identified it as *A. horticola*, Naumann. Homeyer described this very skin in A. & R. Müller's 'Thiere d. Heimath,' ii. p. 585, and I again in 'Mitth. d. ornithol. Vereins in Wien,' 1887, in "Versuch einer Ornith. Preussens," no. 96. When I compared the skin with others in Homeyer's collection, I became convinced that it is a distinct form which has been generally confounded with *A. palustris* and *A. streperus*.

True *A. streperus* is often observed breeding in gardens and parks in towns, far from any water or reeds; to these birds the name of *A. horticola* has been applied, at the same time with the admission that they differ in nothing but their abode. This is not a distinct form, but merely consists of individuals that forsake their usual breeding-grounds and frequent localities not usually resorted to by their kindred.

This I believe to be a misapplication of Naumann's name, and it has probably been the reason why the existence of any other form has been so readily denied.

The name *Sylvia* (*Calamoherpe*) *horticola* (which I cannot find even as a synonym in the rather exhaustive synonymies in Dresser's 'B. of Europe,' nor in Seebohm's vol. v. of the 'Catalogue of Birds') was proposed by Naumann for the two subspecies of C. L. Brehm, which Naumann believed to be identical, but distinct from both *A. streperus* and *A. palustris*. Besides *C. horticola*, Naumann described and figured on the same plate (370), in vol. xiii. of his great work, a *C. fruticola*.

All modern ornithologists have passed over these forms

rather contemptuously, but in my opinion, when larger material of *A. palustris* and *A. streperus* and their allies from different localities has been collected and studied over again, the result will probably be the discovery of several subspecies or even species. At least I believe that there is one form distinct from both the Marsh Warbler and the small Reed Warbler, which seems to stand somewhat between these two common species. Probably Brehm's subspecies, *A. arbustorum* and *A. pinetorum*, as well as Naumann's *A. horticola* and *A. fruticola*, are all referable to this one form, which is an inhabitant of swamps rather than of gardens. At present I am not able to make this out for certain, but I wish to call the attention of those who may be in possession of sufficient material to this group of species.

SYLVIA ATRICAPILLA (L.).

Very common.

SYLVIA HORTENSIS, Bechst.

Not rare, but far less numerous than *S. atricapilla*.

SYLVIA SYLVIA (L.) (= *cinerea*).

Very common.

SYLVIA NISORIA (Bechst.).

This species is very common all over the province in suitable localities. The eggs are laid in the last part of May and the beginning of June. Once I found a clutch with all the eggs spotted with deep chestnut-brown.

SYLVIA CURRUCA (L.).

Not rare, but less common than in Silesia and Western Germany.

ACCENTOR MODULARIS (L.).

This bird is very rare, probably not breeding, and only a straggler. I have seen only one specimen, that had been shot during very unusual and severe weather in spring. It has been lately recorded as occurring near Norkitten (Robitzsch).

ANORTHURA TROGLODYTES (L.).

Common at all seasons.

CINCLUS CINCLUS (L.).

The black-bellied form of the Dipper, the *C. melanogaster* of most writers, which is no doubt the *Sturnus cinclus* of Linnaeus, is a very rare visitor in autumn and winter. I have never noticed the Dipper in summer, but Herr Talke informs me that he found it breeding on the Goldap river, a small tributary of the Pregel, which descends rapidly from the little plateau of the "Rominter Heide." Whether these breeding birds belong to the northern subspecies or to *Cinclus merula* is uncertain. I have not seen specimens.

ACREDULA CAUDATA (L.).

Breeds, but is much more numerous during the winter. Only the true *A. caudata*, without any superciliary stripe, occurs.

PARUS MAJOR, L.

PARUS CÆRULEUS, L.

PARUS CRISTATUS, L.

All three are common throughout the year, the former two everywhere, the last in forests, especially in those consisting of pine.

PARUS ATER, L.

Not common, and only met with in fir-forests.

PARUS PALUSTRIS, L.

The Marsh-Tit is common in East Prussia, and may be seen all the year round. I have used the name *Parus palustris* for the common Marsh-Tit of Central Europe, but probably this name should be restricted to the northern form, the *Parus borealis* of most authors. In this case the form of Central Europe must be called *Parus fruticeti*, Wallgr., and the English form, which is slightly different, *Parus fruticeti dresseri*.

Reichenow (Syst. Verz. Vög. Deutschl. p. 11 (1889)) states that the Northern Marsh-Titmouse occasionally visits East Prussia. I have never seen a specimen, but it is not at all surprising that in winter some of the northern birds should visit this country, while the common form is certainly the only one that breeds here. Taczanowski gives the northern form also as a rare winter visitor in Poland.

PARUS CYANUS, Pall.

On the 1st of January, 1880, when walking through the wood close to the fortress of Pillau, I saw among a party of *Parus cæruleus*, mixed with some other Tits, a specimen of an entirely white and blue Titmouse, which could have been nothing else but *Parus cyanus*. It being a holiday and shooting not being allowed, I rushed home and brought back with me an almost noiseless little pistol, with which I could shoot in spite of the many visitors who enjoyed the beautiful afternoon in the wood. I met with the bird about 200 yards from the previous spot and shot at it, but merely wounded it and—lost it. This very sad record is the only evidence I can give about this bird; but, as it has occurred in Silesia and in Poland, there is no reason why it should not straggle occasionally into Prussia.

SITTA CÆSIA HOMEYERI, Seeb.

There is a good series of Nuthatches from East Prussia in the late E. F. von Homeyer's collection, which I collected for him in various parts of the province to complete his material for an intended but never-published article on this group.

The Nuthatches of East Prussia differ from those of other parts of Germany, or I may rather say from the common form of the Nuthatch of Central and Southern Europe and England, in the much lighter, almost pure white, colour of the breast, and approach the pale *Sitta uralensis* of Siberia and *Sitta europæa* of Scandinavia. They may be regarded as being more nearly allied to *Sitta uralensis* and *Sitta europæa*, but sometimes assimilate to the Western *Sitta cæsia*.

These differences have been noticed by me (*l. c.* no. 65), but I did not venture to name this form. Taczanowski has also described the coloration of the *Sitta* in Poland ('Ornis,' 1888, p. 454).

One of the skins that I had collected for Herr von Homeyer came into the collection of Mr. Seebohm, who has named it *Sitta cæsia homeyeri*, a name that must stand for it, as it is a tolerably well-marked subspecies. The distribution

of this form, as given by Mr. Seebohm, is Pomerania, the Baltic Provinces of Russia, Poland, and the Crimea. As regards Pomerania this is not correct. Homeyer's collection contains specimens of it from East Prussia only; those from Pomerania belong to the true western *Sitta cæsia*. The mistake probably arose from my giving the localities on the labels too exactly, quoting small places not known abroad, instead of better-known and more general terms.

REGULUS REGULUS (L.).

The Golden-crested Wren is very common during the winter, but only a small number remain in the forests to breed.

(I never met with *Regulus ignicapillus*, nor do I know of a verified occurrence of this bird in East Prussia.)

CERTHIA FAMILIARIS, L.

Common throughout the year. Only the true *C. familiaris*, with a pure white breast, occurs.

MOTACILLA ALBA, L.

Very common. The weather in East Prussia is too severe to allow them to remain during the winter.

MOTACILLA FLAVA, L.

Very common.

(The statements that "*M. sulphurea*" and "*M. citreola*" are met with in the breeding-season are best passed over in silence.

Probably *Motacilla borealis* will be found on passage, but I never saw it.)

ANTHUS PRATENSIS (L.).

March to October. Breeds in many suitable localities.

ANTHUS TRIVIALIS (L.) (= *arboreus*).

Common from April to September.

ANTHUS CAMPESTRIS (L.).

Although the many sandy desert-like tracts would be suitable localities for this Pipit, it is rather rare. I met

with it in a few localities in the east, south-east, and north-west of the province.

ALAUDA ARBOREA, L.

Common in pine-forests, or rather in more open places in the forest.

ALAUDA ARVENSIS, L.

Although I heard Sky-Larks singing on bright days after the 20th of February, I do not think that they ever remain during the whole of the winter. No great variations in colour are perceptible, although the specimens differ somewhat according to the soil. Those from turf-moors are very dark on the upper surface, while those from bare sandy soil are as a rule paler.

GALERITA CRISTATA (L.).

Common along roads and on bare places near towns. Resident all the year round. In winter, if deep snow covers the land, it comes into the towns to feed on rubbish and horse-droppings.

OTOCORYS ALPESTRIS (L.).

I have not seen it in East Prussia, but several specimens have been procured in West Prussia near Danzig, and others in Poland; therefore it will no doubt occasionally visit the shores of East Prussia.

EMBERIZA SCHENICLUS (L.).

Not rare in suitable localities.

EMBERIZA PUSILLA, Pall.

A single specimen, shot many years ago near Rastenburg, East Prussia, is in Homeyer's collection.

EMBERIZA HORTULANA, L.

Although this Bunting was unknown to most of the older writers, and also was not mentioned by Boeck as occurring in West Prussia, it is quite a common bird in the greater part of East Prussia, and probably the same in West Prussia. Nevertheless it is absent in some parts. It seems to prefer the

drier sandy districts, but perhaps the reasons for its somewhat peculiar distribution are of another kind.

EMBERIZA CITRINELLA, L.

Common.

EMBERIZA CALANDRA, L. (1758) (= *E. miliaria*, L., 1766).

Not rare in the fertile districts, but scarce or mostly absent from the drier wooded parts.

PLECTROPHENAX NIVALIS (L.).

Common in winter, but somewhat less so in mild years. Usually seen going about in large flocks, and rather shy.

(CENTROPHANES LAPPONICUS has been caught near Danzig and Thorn in West Prussia, and therefore may occur as a straggler in East Prussia.)

LOXIA CURVIROSTRA, L.

This is the common Crossbill in East Prussia, and not the Parrot Crossbill, as would appear from various notes in the literature of the subject.

LOXIA CURVIROSTRA PITYOPSITTACUS, Bechst.

This is a very rare bird, but sometimes large flocks of it occur and probably some individuals remain to breed. If kept separate, it should only be regarded as a subspecies; but more information is required about these forms, which, in my opinion, are certainly not more than local races.

PYRRHULA PYRRHULA (L.).

Only the large Eastern and Northern form (the so-called *Pyrrhula major*, but no doubt the *Loxia pyrrhula*, Linn.) is found in East Prussia. It is very common during the winter, but a few remain to breed. In Western Germany the large form is only a rare winter visitor, but the form breeding there is the smaller and less brilliantly-coloured *Pyrrhula europæa*, Vieill., which is merely a subspecies of the former.

PINICOLA ENUCLEATOR (L.).

In many winters very great numbers arrive in East Prussia, while in others they are rare, and in many years not

one can be found. They are the most foolish and least shy birds in existence.

CARPODACUS ERYTHRINUS (Pall.).

East Prussia is the only part of Germany in which *Carpodacus erythrinus* is a regular breeder. The only districts in which it has been observed are the north-eastern parts, between Königsberg and Memel. Only a few places are known where it is common, and these are chiefly woods of *Alnus glutinosa* with dense undergrowth and generally with swampy ground. It arrives late in the year, and not much before the middle of May. The clutches contain the full number of eggs in about the second week of June, but fresh eggs may be found until July. The usual number of eggs is five. In one wood 17 nests were found in one year, but there are perhaps few localities where this bird is equally common. The very peculiar song of the male obtrudes itself upon one's notice. After the breeding-season these birds keep hidden in the woods. I have not noticed them later than August, but Herr Lindner writes me that he has seen them in September.

CARDUELIS CARDUELIS (L.).

Common.

CHRYSOMITRIS SPINUS (L.).

Very numerous during the winter, but few remain to breed.

ACANTHIS LINARIA (L.).

Not rare in winter, usually seen in woods of *Alnus glutinosa*. It is not known that they remain to breed, and there is no reason to believe that they do so, although I saw a single male in July 1881 near Königsberg. A flock of old and young specimens of this bird was also seen in July 1885 on the Hiddensee, off the north coast of Pomerania, and the suggestion has been made that they occasionally remain to breed. This, however, has not yet been ascertained.

ACANTHIS CANNABINA (L.).

Common. The weather is generally too severe to allow

them to remain during the whole year, but Herr Lindner has observed specimens in winter.

CHLORIS CHLORIS (L.).

Common.

FRINGILLA CÆLEBS, L.

Common. Although many remain during the winter in Western Germany, this is not the case in Prussia.

FRINGILLA MONTIFRINGILLA, L.

Common in winter, October to April.

PASSER DOMESTICUS (L.).

PASSER MONTANUS (L.).

Both common.

COCCOTHAUSTES COCCOTHAUSTES (L.).

Not rare. Nests at the end of May.

STURNUS VULGARIS, L.

Common in summer, but never seen after October. I think I have procured only one specimen during the breeding-season, and this was one of the intermediate forms between the true western *Sturnus vulgaris* and *Sturnus menzbieri*, Sharpe. This form is probably the only one that breeds in Prussia. Immense numbers used to roost among the reeds of the Haffs after the breeding-season.

PASTOR ROSEUS (L.).

Has been shot several times (1865, 1876), but is a very rare straggler.

ORIOBUS GALBULA, L.

Very common, especially in the forests of *Alnus glutinosa*, and those consisting of *Pinus sylvestris*. Considerable individual variations in colour seem to be not rare. Several examples of these are in the Homeyer collection.

NUCIFRAGA CARYOCATACTES (L.).

The Thick-billed Nutcracker, the *Nucifraga brachyrhyncha* of Brehm, to which the name *N. caryocatactes* of Linnæus should be restricted, is a resident bird in the fir-forests in the easternmost parts of East Prussia. It is so stationary

that it hardly leaves the breeding-district at all, and may be seen there all the year round. It breeds, in spite of snow and ice, early in the year. I found a nest with three half-feathered young birds on the 19th of April, and a clutch of nearly fresh eggs on the 21st of March. The nest was in a fir about 15 feet high, the number of eggs three, as usual. The female did not leave the nest until I knocked against the tree. The species is not at all rare in some of the dense fir-forests, but the nest is extremely difficult to find, chiefly on account of the long and severe winters. I have seen snow lying about four feet deep at the end of March, and even in 1884, when I found the eggs, I had often to walk for hours through half-frozen snow and water. There is a good series of *Nucifraga caryocatactes* in Homeyer's collection. The colour of Prussian specimens is rather light. The moult takes place in June and July.

NUCIFRAGA CARYOCATACTES MACRORHYNCHA (Brehm).

The Slender-billed Nutcracker is merely a bird of passage in East Prussia. It is common in some years, but not seen in others.

GARRULUS GLANDARIUS (L.).

PICA PICA (L.).

Both not rare, except in some districts.

CORVUS CORAX, L.

Not rare, but not in large numbers. More plentiful in winter.

CORVUS FRUGILEGUS, L.

There are not many rookeries in East Prussia.

CORVUS CORNIX, L.

The Hooded Crow is the common Crow, and is a stationary bird all the year round.

(It has been stated twice (J. f. O. 1884, p. 94, and some years later in the 'Beobachtungstations-Berichte' in the same Journal) that *Corvus corone* breeds in East Prussia, but these statements are incorrect. The Carrion-Crow is common

in Germany east of the Elbe, but no straggler has yet been observed in East Prussia.)

COLÆUS MONEDULA (L.).

There are very few places in East Prussia where the Jackdaw breeds. But in autumn, with the first snows, hundreds of thousands generally arrive from the east, and stay there for the winter. During the night many roost on the tops of large buildings, others in trees. They feed almost everywhere, chiefly on rubbish. These winter visitors have generally rather paler necks than those from other parts of Germany, and do not differ from specimens from Moscow. The difference, however, between the forms from Moscow and those from Western Germany is hardly perceptible, and not at all constant. Many western specimens are equally pale, and therefore it seems to be impossible to separate them, even subspecifically.

LANIUS COLLURIO, L.

Very common everywhere.

LANIUS SENATOR, L.

Very rare, and perhaps only a straggler. A specimen shot near Königsberg is in the museum of that town, and it breeds in several places in West Prussia.

LANIUS EXCUBITOR, L.

Common from October to April. It breeds, no doubt, but I cannot verify the fact, as it is very rare in the breeding-season.

The so-called *Lanius major* is nearly as common as the true *L. excubitor*, and specimens are not rare which it is difficult to classify under either of the two supposed forms. These forms are, in my opinion, certainly not more than subspecies, and possibly only varieties.

LANIUS MINOR, Gm.

A common bird from May to the end of August. The eggs are to be found at the end of May and in June. The nest is always placed at some height in the trees, and is invariably lined with some strongly-smelling plant, such as

lavender, thyme, &c. ; and white-coloured plants are much liked.

MUSCICAPA PARVA, Bechst.

Is not to be found in most localities in East Prussia, being an inhabitant of forests of beech and hornbeam (*Fagus sylvatica* and *Carpinus betulus*). Herr Robitzsch, however, found it breeding near Norkitten, in the district of Insterburg.

MUSCICAPA GRISOLA, L.

Common from the beginning of May to September. Eggs are found at the end of May and in June.

MUSCICAPA ATRICAPILLA, L.

Plentiful on migration at the end of April and in September, but comparatively rare during the breeding-season.

AMPELIS GARRULUS, L.

The Waxwing comes *every year* to East Prussia ; at least I was able to verify its occurrence in every winter from 1879 to 1886, and in 1889 and 1890. In some winters considerable numbers are seen, while they are very scarce in others. There are certain places where the bird may always be found as long as there are any in the country. They are especially fond of the berries of *Viscum album*, and in searching for Waxwings one should be on the look-out for mistletoe. They are also fond of the berries of *Vaccinium oxycoccos*, and I have seen them eating these berries on the moor, the only occasion on which I have seen them descend to the ground.

CHELIDON URBICA (L.).

HIRUNDO RUSTICA, L.

CLIVICOLA RIPARIA (L.).

All three species of Swallow are common. A hill near Pillau has its name (Schwalbenberg) from the immense numbers of *Clivicola riparia* which frequent it. Before the Swallows leave the country, incredible numbers associate to sleep in the reeds of the Frische Haff, and it is quite exciting to see them, and to hear them rising on wing with a sound like thunder.

[To be continued.]



XXX.—On a new Species of Flycatcher of the Genus
Hyliota. By Dr. G. HARTLAUB.

(Plate VIII.)

I PROPOSE to dedicate to Herr Amtsrath Nehrkorn, of Riddagshausen, a distinct new species of Flycatcher of the genus *Hyliota*, of which he has sent me an example for examination, and to call it

HYLIOTA NEHRKORNI, n. sp. (Plate VIII.)

Supra unicolor, chalybæo-nigra; subtus ochroleuca, pectore et epigastrio intensius tinctis, gula et abdomine pallidioribus, albidis; subalaribus nigris; subcaudalibus albis; remigibus totis nigris; rectricibus nigris, intermediis dorso concoloribus: rostro et pedibus nigris; vibrissis brevissimis. Long. tot. circa 122 mm., al. 77 mm., caud. 37 mm., tars. 17 mm.

Hab. Accra, West Africa (one adult specimen).

The general form of this little bird is quite that of a true *Hyliota*. The upper parts are glossy blue-black, with steel-blue reflections; the feathers of the rump are somewhat long and lax, greyish white, with steel-bluish ends. The quills are black. There is not the slightest trace of white markings on the wing. The tail-feathers are black, the middle ones glossed with steel-blue; the under wing-coverts black; the under tail-coverts white. The body beneath is ochraceous, deeper on the breast and epigastrium, pale and more whitish on the throat and abdomen. The bill and feet are black.

The differential peculiarity of this new species of *Hyliota* is the entire absence of white on the wing.

The known species of *Hyliota* are now, therefore, five in number:—

1. *H. flavigastra*, Swains.; Hartl. in Cab. J. f. O. 1883, p. 323.

Hab. Senegambia; Niger Valley; Djur and Kosanga countries in N.E. Africa; Langomeri (3° 30' N. lat.).

2. *H. violacea*, J. Verr.; Hartl. l. c. p. 327.

Hab. Gaboon.

3. *H. barbozæ*, Hartl. l. c. p. 329.

Hab. Benguela.

4. *H. nehrkorni*, Hartl.

Hab. Accra, Gold Coast.

5. *H. australis*, Shell.; Hartl. l. c. p. 331.

Hab. Umvuli River, S.E. Africa.

As regards this species, of which I have not yet examined specimens, and which is, as yet, known from a single example only, I may remark that it is apparently a less typical form.

The type specimen of our new species, *Hyliota nehrkorni*, from which the figure is taken, is in the splendid collection of Amtsrath Nehrkorn, of Riddagshausen; near Brunswick.

XXXI.—*Remarks on Lanius excubitor and its Allies.*

By H. E. DRESSER, F.L.S., F.Z.S.

AFTER an examination of the large series of Great Grey Shrikes in the British Museum and in the collection of Mr. Seebohm, as well as of twenty-one skins in my own collection, I quite agree with the late E. von Homeyer and Professor R. Collett that there is but one species of Great Grey Shrike in Europe, that the true *Lanius major* of Pallas does not occur here, and that the European specimens recorded as belonging to that species are merely individual varieties of *Lanius excubitor*. This view was also held by the late Dr. Taczanowski, who writes (Faun. Orn. Sib. Orient. p. 489):—"It appears to us that most of these birds found accidentally in Europe are but varieties of *Lanius excubitor* having the alar patch less developed, that is to say single."

Professor Bogdanoff separates these varieties from the Siberian form and refers them to a subspecies which he calls *Lanius borealis europæus*. But there is no doubt that this so-called subspecies occurs in the same localities where *Lanius excubitor* is found and freely interbreeds with that species, and that every gradation between the two forms is

to be met with, which, it appears to me, precludes its being treated as even a constant form or subspecies. The single bar on the wing and the vermiculations on the underparts are the characters claimed as distinguishing this form, but neither of these is constant. Von Homeyer, after a careful examination of sixty-three specimens, emphatically denies that the single and double bars are distinctive characters, and says (J. f. O. 1880, p. 151) "die Spiegel-Theorie ganz unhaltbar ist." In my own collection I find one adult bird with the underparts unbarred and with one alar bar, the second bar being just perceptible; a second specimen, an old female, with only one bar on the wing and with faint vermiculations on the breast; a third and fourth, male and female, with one alar bar, the underparts being strongly barred or vermiculated; a fifth and sixth, evidently old birds, with the double alar bar very strongly developed, but with the underparts clearly vermiculated, all six being specimens obtained in Europe.

I am indebted to Professor R. Collett for the loan of three specimens obtained in Norway. The first of these, an adult female obtained at Lister on the 18th April, 1890, has the underparts unbarred, and but one alar bar, there being no trace of a second bar. The second, an adult male obtained at Vest Aker on the 18th April, 1886, has also the underparts unbarred and one alar bar, but there is also a small second alar bar, which is, however, concealed by the wing-coverts. The third, a female bird of the year, obtained also at Vest Aker on the 24th September, 1886, has the underparts clearly vermiculated with pale dark transverse lines, and has one alar bar and a second bar also concealed by the wing-coverts. All three specimens have the rump and upper tail-coverts grey, like the back, and in tone of colour agree closely with typical *Lanius excubitor*, having no trace of brown in the plumage.

Professor Bogdanoff, in his excellent monograph of the Shrikes ('Sorokoputui Russkoi Faunui,' p. 109), remarks that "the absence of the second alar patch cannot be considered a specific character of *L. major*," and points out that in

Siberian specimens there is occasionally a small second bar. As regards the interbreeding of the two forms in Europe, Meves (Arch. f. Math. og Naturv. 1879, p. 279) has recorded the fact that he obtained two young birds, both supposed to belong to the same brood, shot at Quickjock in Lapland on the 12th August, one of which, a male, had a double alar bar and the other, a female, a single bar; and Professor Collett, in his excellent article on *Lanius excubitor* and *Lanius major* ('Ibis,' 1886, pp. 30-40), states that he shot three young birds out of the same brood near Hjerkin on the Dovre Fjeld, two of which, males, had the double bar, and the third, a female, a single alar bar. He also in two instances shot in Norway paired birds, the males of which had the double bar, and the females a single bar. From these facts it is clear that *Lanius excubitor* is subject to considerable individual variation, and it would appear that the single alar bar is more frequently found in the female than in the male.

As regards *Lanius homeyeri*, it appears to me, to say the least, to be a very bad species, and merely an intermediate form between *Lanius excubitor* and *Lanius leucopterus*. Indeed, in a large series intermediate links between it and both *L. excubitor* and *L. leucopterus* can be found. It appears that *Lanius excubitor*, like *L. elegans*, is subject to extreme variation in the amount of white in the plumage, but in the former species the white in the plumage seems to increase the further east one goes until it culminates in *Lanius leucopterus*. I have in my own collection specimens from Stockholm, North Russia, and the Ural showing a perfect gradation from typical *L. excubitor* to extreme *L. homeyeri*. Professor Collett (*l. c.*) records a specimen from Norway intermediate between *L. excubitor* and *L. homeyeri*, approximately closer to the latter than the former, and von Homeyer (*l. s. c.*) states that he has received specimens of so-called *L. homeyeri* from the lower Volga which cannot be specifically separated from *L. excubitor*. It appears to me that *Lanius leucopterus* can fairly be considered as a distinct form, but that *L. homeyeri* is merely a connecting link between that species and *L. excubitor*, and has no constant distinc-

tions by which it can be separated from the latter, from which it differs merely in having more white in the plumage.

Lanius leucopterus (*L. przewalskii*, Bogd.) is a very white form of *Lanius excubitor* having the two alar bars very large and confluent. Its forehead and a broad superciliary stripe are also pure white, as are the lower rump and upper tail-coverts, and the three outer tail-feathers are almost entirely white; in some of the secondaries the inner web is pure white, this being the only constant character I can find to distinguish this species. *Lanius leucopterus* inhabits, so far as I can ascertain, the southern portion of Central Siberia and Turkestan.

Throughout Northern Siberia *Lanius excubitor* is replaced by *Lanius major*, Pall. This form, when we wrote our article on the Grey Shrikes in 1870 (*P. Z. S.* 1870, p. 592), Dr. Bowdler Sharpe and I suggested would ultimately prove to be conspecific with *Lanius borealis*, and now, after a comparison of the series in the British Museum and my own collection, I cannot find any character by which the birds from Siberia and North America can be separated. Both species are as a rule tinged with tawny brown, but some, though comparatively few, specimens are nearly as grey as *Lanius excubitor*.

As a rule the American birds are more frequently tinged with brown than those from Siberia, but there are in the British Museum specimens from America quite as grey as any of those from Siberia. This species has the underparts distinctly barred with narrow transverse vermiculations, and has but one alar bar, though in one specimen from the Baikal district in my own collection there is a slight indication of a second alar bar on one wing. Prof. Bogdanoff also remarks (*l. s. c.*) that some Siberian specimens have a second alar bar, whereas others have but a single bar, but that in all Siberian birds which have the second bar it is smaller than in European examples and is almost hidden by the larger coverts. He further adds that the colour of the rump and the amount of white on the tail are extremely variable, that in only one specimen examined was the outer rectrix entirely white, and that the only characters by which the

Siberian form can be distinguished are the brownish tinge of colour in the plumage, the constant vermiculation of the underparts, and the general absence of the second alar bar.

There is, however, one specimen of a Grey Shrike from the island of Askold, near Vladivostock, in the collection of Mr. Seebohm, which is extremely puzzling. This bird has no trace of vermiculations on the underparts, nor any trace of brown in the plumage, but it has a single alar bar and has the rump and upper tail-coverts pure white. This specimen was received by Mr. Seebohm from Dr. Taczanowski, and the latter gentleman evidently considered this form to be the fully adult of *Lanius major*, Pall., as he writes (*op. cit.* p. 489):—"The adult of this Eastern Shrike (*L. major*) does not differ from the adult of *L. excubitor* except in the larger amount of white on the forehead, and in having the upper tail-coverts and the lower rump pure white, or at most with a grey tinge on the tip of the tail-coverts, whereas the European form has the entire upper surface uniform light grey, paling indistinctly in colour on the lower back. Moreover the alar bar is restricted to the primaries, the secondaries having only white on the base of the outer web of the feathers next to the primaries, the succeeding secondaries having no white on them, and the secondaries in general are blacker. The difference between the young and immature birds of the two forms is at the first glance much more striking." I cannot, however, agree that this is the adult of *L. major*, as in all the large series I have examined this is the only specimen I have met with lacking the vermiculations on the underparts and all trace of the brown tinge in the plumage. Besides, Professor Bogdanoff, who has probably examined more specimens of Siberian Shrikes than any other ornithologist, does not even mention this form. I may add that Professor Bogdanoff, like Dr. Sharpe and myself, notices the close similarity between specimens from Siberia and North America, but states that, compared with American examples, the Siberian form is purer in colour, and that the female of the American form is much browner than in the Siberian, as are also the young.

He concludes by saying that "there are no sharp characteristics to enable one to discriminate the two forms with certainty, and therefore it is more correct to consider *Lanius major* and *Lanius borealis* as local races of the same species, the specific characters of which are not yet developed," and he therefore called the Siberian form *Lanius borealis sibiricus*. In this view I fully concur with the Professor, but I do not consider the differences sufficient to permit one to accord the Siberian form even subspecific rank, and I therefore refer it to *Lanius borealis*, Vieill.

Another Asiatic Shrike allied to *Lanius borealis* is *Lanius mollis*, Eversmann, which inhabits the Altai range and Turkestan, and has been recorded by Mr. Seebohm from Archangel. This species differs from *L. borealis* in having the upper and under tail-coverts sandy buff, and is even browner in tinge of colour than tawny American specimens of that form. I have seen only two specimens of this Shrike, both of which are in the collection of Mr. Seebohm, and I cannot therefore give a decided opinion from personal examination as to the validity of this species; but Professor Bogdanoff, who has had the best opportunity of judging, describes the adult male, female, and the nestling, and states (*l. s. c.*) that he has no doubt as to its being a perfectly good species differing in all plumages from its allies. So far as I can judge from the two specimens I have examined, I am decidedly inclined to endorse this opinion.

There are two more species of Grey Shrike which have been described as inhabiting the Eastern Palæarctic region, viz. *Lanius sphenocercus* and *Lanius seebohmi*. The former of these is easily recognizable by its somewhat larger size and very long graduated tail. It is otherwise like *L. excubitor*, but has the two bars on the wing large and confluent as in *Lanius leucopterus*, and the underparts are white with a rosy tinge.

Lanius seebohmi, of which only the type is known, is a doubtful species, and until more specimens of it are obtained it is premature to hazard an opinion as to its specific validity. It differs in having a narrow frontal black band, much less

white on the tail, and the underparts of the body of a dull white. It has only one alar bar. The specimen in question was obtained by Dr. Maack in the valley of the Amoor.

In conclusion, there appears to be no doubt that all the above-mentioned species are descended from one parent stock, *Lanius excubitor* or *Lanius borealis*, probably the latter, as *L. excubitor* shows a tendency to cast back towards *L. borealis*. They may be treated either as permanent varieties or subspecies, or else as fairly good species though closely allied and to some extent connected by intermediate links. But in the present case, as the characteristics are fairly definable, I deem it expedient to adopt the last alternative.

I do not give any table of measurements, as I find on examination that they do not yield any practical result.

XXXII.—*Remarks on the Palearctic White-breasted Dippers.*

By H. E. DRESSER, F.L.S., F.Z.S.

TWENTY-FIVE years have elapsed since Mr. Salvin's excellent article on the genus *Cinclus* was published in this journal, and eighteen since I wrote the article on *Cinclus aquaticus* in the 'Birds of Europe' and gave a short review of its allies. It is also now more than ten years since vol. vi. of the British Museum 'Catalogue of Birds,' containing the *Cinclidæ*, was issued. During this period, as may well be imagined, much more information on the subject has been published and a much larger material for the discussion of the question is now available. I have lately been examining as large a series of Dippers as I could get together, and the result is that I have to some extent modified the views I held eighteen years ago. It may therefore be of interest to ornithologists if I place on record what further information I have been able to glean on the subject, and report progress up to date.

The Dipper is essentially a non-migratory species, and unless driven out by stress of weather does not appear at any time to wander far from its usual range, which is, as a rule, confined to mountainous districts and to places where there is

swift-running water. In the mountains the Dipper usually spends the summer months at considerable altitudes, and only forsakes these, its breeding-haunts, to pass the winter at some lower altitude near the foot of the same mountain-range. Thus, as may be taken for granted, isolation has caused the group to be split up and subdivided into several "local forms" or "subspecies," whichever naturalists may choose to term them. These forms have become permanently distinct, though the differences are but slight, and in a large series intermediate forms are usually found; but all the facts point to the various forms having descended from one parent stock. It is not my intention to propound abstruse hypotheses, nor to conjure up a few glacial epochs to account for the distribution of these various forms; but I will merely state briefly the facts as they have come under my own observation. I may, however, go so far as to say that it appears to me most probable that *Cinclus melanogaster* (or *Cinclus cinclus*, as Dr. Sharpe prefers to call this form) is the parent stock from which all the various forms of White-breasted Dipper (including even *Cinclus leucogaster*) have descended.

Cinclus melanogaster is the most boreal of all the group; for throughout the whole of Scandinavia, and probably also the whole of Northern Russia in Europe, this form alone is found. I have examined numerous specimens from various parts of Scandinavia and one from North Russia (from Mudjuga, 40 miles north of Archangel). All of these agree very closely *inter se*. During severe winters, when driven from its usual haunts by stress of weather, this form has been met with, though rarely, on the coasts of England, in Heligoland, on the coasts of Holland and Belgium, and also, as I am informed by Mr. E. Hartert, in Northern Germany.

Dr. R. Bowdler Sharpe (Cat. B. Brit. Mus. vi. p. 309) calls in question my statement that *C. melanogaster* has occurred in Ireland, and adds that an examination of the specimens referred to by me shows that the birds so named "are only young birds of the year of the ordinary *Cinclus aquaticus* after their first moult, at which time they are hardly to be distinguished from *Cinclus cinclus*." To this

contradiction, however, I must demur, as I have before me the only Irish specimen I have ever examined, obtained by Mr. H. Blake Knox. This is certainly not a young bird, and is undistinguishable from specimens from Sweden.

In Great Britain the predominant form, and, indeed, the only one, except in the case of rare stragglers to the east coast, is *Cinclus aquaticus*, and, as Dr. R. Bowdler Sharpe remarks, English specimens are much the finest in colour on the underparts. I have examined many English specimens of this form, but have never had an opportunity of examining a British-killed specimen (except the one from Ireland) of *C. melanogaster*, which is occasionally met with on the east coasts of England. *Cinclus aquaticus* is also found in France, Belgium, Holland, and probably throughout the whole of Northern Germany; but I have had only scant opportunities of confirming this by an examination of specimens from different parts of northern continental Europe. I have, however, examined specimens from the Rhine Provinces and from Galicia.

In the Pyrenees another local form of *Cinclus* occurs, which approaches more nearly to *C. melanogaster* than to *C. aquaticus*, and differs from the former in having a shorter wing, while the upper parts, especially the head and neck, are of a paler brown, but this brown extends over about the same area as in *C. melanogaster*. Moreover, the black on the underparts is paler and more brown in tinge, and lacks the red tinge of *C. aquaticus*. This bird is, in fact, a pale form of *Cinclus melanogaster*; and by those who elect to differentiate and name every form, however slightly differing, it may be distinguished as *Cinclus melanogaster pyrenaicus*.

Of this form I have examined specimens from Eaux Chaudes in the Basses Pyrénées and from Gèdre in the Hautes Pyrénées in the collections of Canon Tristram and Mr. J. Backhouse. In Switzerland, Savoy, Piedmont, and Southern Europe as far east as Greece and Turkey, another form is found (*Cinclus albicollis*), which differs from *Cinclus aquaticus* in having the upper parts paler and the breast of a much brighter rufous, this colour extending on to the abdomen. Specimens of this

form from Greece approach somewhat to *Cinclus kashmiriensis*. An adult male in my collection from Olympus has the upper parts as in *C. albicollis*, but the underparts are darker and less rufescent, the rufous colour being of a darker shade than in *C. albicollis*. But, though to some extent intermediate between the two forms, this form approaches much more nearly to *C. albicollis*. An adult female from Olympus and a young bird from Mount Parnassus, however, are similar to *C. albicollis* from Piedmont, but are a trifle less rufous on the underparts.

I am indebted to Mr. J. Whitehead for the loan of his specimen of the Dipper from Corsica. This bird has the upper parts similar to a specimen in my own collection from Piedmont, but is rather less red on the abdomen, which is somewhat paler and browner than that of the bird from Piedmont; the flanks also are, if anything, rather greyer in tinge of colour.

I have examined only one specimen of the Dipper from North Africa, the type of Canon Tristram's *Cinclus minor*. This specimen somewhat resembles the Pyrenean bird, but is a trifle more rufous on the underparts, having a rather narrow band of dull rufous bordering the white. It is to some extent intermediate between that form and the bird from Corsica.

Specimens from Asia Minor are referable to *Cinclus kashmiriensis*, but differ somewhat from the type in having the brown on the back extending only to the interscapular region—thus further down than in *Cinclus melanogaster* and *C. aquaticus*, but not so far down as in examples from further east. Examples from the Taurus mountains have the abdomen rather paler but not rufous, and in some of them the brown on the back extends but little beyond the hind neck. A specimen from Erzeroom, however, has the breast darker, nearly as dark as in some specimens of *Cinclus melanogaster*. Examples from Persia agree fairly well with the bird from Erzeroom. In Palestine, however, one finds a form (*C. rufiventris*, Hempr. & Ehr., *vide* Tristram, Faun. & Flor. Palest. p. 51) which has the abdomen rufous brown, somewhat similar to the Corsican bird, but the brown on the upper parts extends to the interscapular region, as in *C. kashmiriensis*.

I have also before me a specimen obtained by Mr. C. G. Danford at Osmanzeeh, Asia Minor, which has the abdomen strongly tinged with dull rufous brown and is intermediate between the specimen from Palestine and those obtained by Mr. Danford in the Taurus mountains, but the brown on the upper parts extends nearly to the centre of the dorsal region.

Cinclus kashmiriensis is subject to a good deal of variation, although these variations are but slight. I have been able to examine a considerable series, and find that as a rule the further east one goes the more brown there is on the upper parts. As above stated, in some of the birds from the Taurus range the brown does not extend far below the hind neck, the rest of the upper parts being marked with the characteristic semilunar markings. The type of the species, which is from Kashmir, has the underparts somewhat pale and brownish in tinge, and the brown on the upper parts extends rather far down, the semilunar markings on the rest of the upper parts being rather more indistinct than in most of the specimens I have examined. Examples from Sikkim, Ladakh, Yarkand, and the Yangtze have the lower underparts rather dark, there being an absence of rufous in the tinge of colour, and the flanks are not very grey. But one specimen in Canon Tristram's collection, obtained by Col. Przevalsky in Kan-su, has the underparts very dark, quite as black as in any specimen of *C. melanogaster*, and there is very little grey on the flanks. The upper parts are also as in *C. melanogaster*, but the brown goes further down, extending over all the interscapular region. Another specimen, from Transcaspia, a not quite adult bird, as there are a few white tips to the feathers on the abdomen, has a tinge of brownish rufous on the dark portion of the underparts.

Mr. Salvin states (Ibis, 1867, p. 117) that *C. kashmiriensis* has the feathers on the lower back black with grey margins, instead of grey with black margins as in *C. aquaticus*, and has the spurious primary longer than that of any specimens of the European races; but after a careful comparison of a large series I am unable to confirm these statements.

In Siberia, more especially in the Baikal district, there are

two forms of Dipper. One of them is *C. leucogaster*, which has the white on the underparts extending down to the vent. The other, which may be distinguished as subsp. *baicalensis*, has the dark colour on the underparts extending as far as in *Cinclus kashmiriensis*, but differs from that form as much as that form does from *C. melanogaster* and *C. aquaticus*. It has the head and neck paler, the colour of these and the rest of the upper parts being of a peculiar velvety mouse-brown, the head and neck being rather paler than the back, and the entire upper parts down to the lower rump being brown, there being only a few indistinct semilunar markings on the lower rump and upper tail-coverts; the dark portion of the underparts is of a dull dark earthy brown without any trace of rufous.

In the series of Baikal specimens which I have examined I find every intermediate stage between these two forms—from subsp. *baicalensis* to a specimen of *C. leucogaster* in my own collection, which has the underparts as white and the head and neck as pale as in any specimen of *C. leucogaster* from Turkestan.

I am indebted to Mr. Seeböhm for an opportunity of examining a large series of Dippers from Siberia, chiefly from Krasnoyarsk, in his collection. All of these are identical with the dark-bellied form from Lake Baikal. Taczanowski, in his recently published posthumous work (Faun. Orn. Sib. Orient. p. 211), recognizes only one species of White-bellied Dipper in Siberia—*Cinclus leucogaster*; but he refers to specimens with the abdomen dark, such as I describe above, and considers them as intermediate forms between *C. kashmiriensis* and *C. leucogaster*. He also states that he has examined specimens that are intermediate between that form and *Cinclus sordidus*, but I have never had an opportunity of examining a specimen of this variety.

The white-bellied form (*Cinclus leucogaster*) inhabits Turkestan, Mongolia, and the countries north of Kashmir, ranging into the Baikal district. I do not find that in the Altai or in Turkestan it intergrades with *Cinclus kashmiriensis*, but, as above stated, in the Baikal district typical specimens of *C. leucogaster* are comparatively speaking rare, though I

Subsp.		Culmen. inch.	Wing. inches.	Tail. inches.	Tarsus. inch.
<i>melanogaster</i>	Sweden	0.91—0.93	3.45—3.6	2.3—2.35	1.13—1.25
	N. Russia	0.9	3.7	2.35	1.1
<i>aquaticus</i>	Great Britain	0.85—0.9	3.25—3.5	2.2—2.45	1.15—1.25
	Galicia	0.82—0.85	3.3—3.6	2.1—2.3	1.05—1.1
<i>pyrenaicus</i>	Pyrenees	0.85—0.95	3.1—3.4		
<i>minor</i>	Algeria	0.85	3.2	2.0	1.15
<i>albicollis</i>	Piedmont	0.9—0.95	3.35—3.45	2.3—2.4	1.15—1.27
	Greece	0.85—0.9	3.2—3.3	2.0—2.2	1.15—1.17
	Corsica	0.85	3.3	2.0	1.15
<i>rufiventris</i>	Lebanon	0.87	3.15	2.1	1.15
<i>kashmiriensis</i>	Elburz Mts.	0.82	3.45—3.5	2.35—2.4	1.1
	Tehran	0.87	3.5—3.55	2.4	1.2—1.3
	Taurus	0.80—0.85	3.25—3.45	2.05—2.1	1.1—1.15
	Asia Minor	0.9	3.6	2.1	1.2
	Transcaspia	0.85	3.6	2.1	1.15
	Yarkand	0.8—0.85	3.7—3.9	2.35—2.5	1.2—1.25
	Sikkim	0.85—0.9	3.45—3.5	1.8—2.1	1.0—1.1
	Gansu	0.9	3.8	2.35	1.25
<i>baicalensis</i>	Lake Baikal	0.8—0.9	3.2—3.6	2.0—2.1	1.1—1.15
<i>leucogaster</i>	Altai	0.9	3.25	2.2	1.1
	Turkestan	0.9	3.7—3.85	2.4—2.5	1.2—1.25
	Mongolia	0.9	3.6	2.25	1.2
	Lake Baikal	0.8—0.85	3.25—3.3	2.0—2.05	1.15—1.2

have examined some which do not in the least differ from examples from Turkestan. This form has the underparts white down to the vent, except the flanks, which are brown; while the upper parts are as in the Baikal dark-bellied form, but the head and nape are much lighter, in some old specimens these parts being light whity-brown.

In conclusion, it appears to me that all the above-mentioned Dippers may be considered as slightly modified forms of the same species, or may with equal justice be treated as very closely allied species; but I am inclined to favour the former view.

The measurements of the various forms do not differ very much, as will be seen from the table on page 386.

XXXIII.—*On the Gallinaceous Genera Bambusicola and Arboricola.* By W. R. OGILVIE GRANT.

(Plate IX.)

THIS paper contains a short review of all the known species of the above-named genera, and gives a brief synonymy of them, showing the various combinations of names, generic and specific, which have been used by different authors. It also gives references to all the good figures. Keys to the species and their geographical distribution are added, and numerous notes.

The number of tail-feathers in the various groups of Gallinæ is a very useful generic character when taken in conjunction with others: it varies enormously in the different genera. For instance, in *Excalfactoria* the minimum number (8) of tail-feathers is found; in *Coturnix* there are 10–12, in *Rhizothera* 12, in *Francolinus*, as well as in *Bambusicola* and *Arboricola*, 14, in *Perdix* 16–18, in *Tetraophasis* 18, in *Tetraogallus* 20–22, and so on. These numbers are quite constant, as I have ascertained by examining a large number of specimens of nearly every species. The number of tail-feathers can be accurately ascertained only by lifting up the upper tail-coverts, so as to expose the bases of the rectrices. When this is done there is usually no difficulty in counting the

tail-feathers and seeing whether any are missing. In some of the small Quails, such as *Excalfactoria*, it is not always easy to distinguish between the upper tail-coverts and true tail-feathers, but, by following the above method, with a little care one cannot well make a mistake.

The species marked with a † are not represented in the British Museum Collection, and those marked with a * have never been figured.

BAMBUSICOLA.

Tail of fourteen feathers, long, wedge-shaped, the outer pair of feathers being about two thirds the length of the middle pair, which are more than two thirds the length of the wing.

First primary considerably shorter than the tenth, which is equal to, or shorter than, the second. The fifth primary is slightly the longest.

Males (and sometimes females) with a pair of spurs on the tarsi.

Nails as in *Francolinus*, rather short and curved.

Key to the Species of *Bambusicola* †.

- A. Superciliary stripe buff; chest buff, spotted with rufous; inner webs of the primary quills mostly chestnut *B. fytchii*, ♂ ♀.
- B. Superciliary stripe grey; chest grey; inner webs of primary quills dark blackish brown.
 - a. Cheeks and ear-coverts rufous chestnut *B. thoracica*, ♂ ♀.
 - b. Cheeks and ear-coverts dark grey *B. sonorivox*, ♂ ♀.

† *La Perdrix de Gingi*, Sonnerat, Voy. Ind. Orient. ii. p. 168 (1872) [female only].

The female specimen here characterized has undoubtedly nothing whatever to do with the male, which is an *Arboricola*. Like all Sonnerat's descriptions, it is very accurately drawn up, and there cannot be the least doubt that his female *Perdrix de Gingi* is a species of *Bambusicola*, possibly *B. sonorivox* from Formosa, or some closely allied form. The description, however, differs from the Formosan bird in several important particulars; for instance, the top and hind part of the head and neck are *dirty grey*, instead of *brown*, the throat and fore part of the neck are *deep brown*, not *dark chestnut*, and the sides of the belly are *chestnut*, with *black* subter-

1. BAMBUSICOLA FYTCHII.

Bambusicola fytchii, Anders. P. Z. S. 1871, p. 214, pl. xi.; id. Yunnan, ii. Birds, p. 673, pl. liv. (1878); Hume & Marsh. Game B. ii. p. 97, pl. (1879); Fytche, Burma, ii. pl. iv. (1879).

Bambusicola hopkinsoni, Godwin-Austen, P. Z. S. 1874, p. 44.

Hab. Garo and Khasia Hills, Shillong Mt., Naga Hills, Kachin Hills in Yunnan, ranging to the south-west of Sze-chuen.

2. BAMBUSICOLA THORACICA.

Perdix thoracica, Temm. Pig. et Gall. iii. pp. 335, 723 (1815); Gray, Fasc. B. China, p. 6 (1871).

Francolinus thoracicus, Gray, Gen. B. iii. p. 505 (1846).

Sterna thoracica, Bonap. C. R. xlii. p. 883 (1856).

Bambusicola thoracica, Swinh. P. Z. S. 1863, p. 307.

Perdix sphenurus, Gray, Zool. Misc. p. 2 (1844).

Perdix sphenura, Gray, Fasc. B. China, pl. viii. (1871).

Arborophila sphenura, Gray, List Gall. B. iii. p. 38 (1844).

Francolinus sphenurus, Gray, Gen. B. iii. p. 506 (1846).

Galloperdix sphenura, Bonap. C. R. xlii. p. 882 (1856).

Bambusicola sphenura, Gould, P. Z. S. 1862, p. 285.

Arboricola bambusæ, Swinh. Ibis, 1862, p. 259.

Hab. Southern China, as far north as the valley of the Yang-tsze-kiang.

3. BAMBUSICOLA SONORIVOX.

Bambusicola sonorivox, Gould, P. Z. S. 1862, p. 285; id. B. Asia, vi. pl. 63 (1864).

Perdix sonorivox, Gray, List B. pt. v. Gall. p. 58 (1867).

Hab. Island of Formosa.

minimal spots, whereas in *B. sonorivox* these parts are *rufous-buff*, with chestnut spots. Sonnerat's description cannot be intended for *B. thoracica*, which is the only other grey-chested species known, and I should not be in the least surprised if his bird were to be rediscovered in Luzon, the fauna of which is still only imperfectly known, and prove to be a distinct species of *Bambusicola*. This island is probably also the home of the male *Perdix de Gingi* (*Arboricola gingica*), now known only from Temminck's specimen in the Leyden Museum.

ARBORICOLA.

Tail of fourteen feathers, short and somewhat rounded, the middle pair of feathers being rather longer than the outer pair, and equal to two fifths of the length of the wing.

The first primary is about equal to the ninth (sometimes to the eighth or tenth), and the fourth or fifth is slightly the longest.

Tarsi without spurs.

Nails unusually long, rather wide, and only very slightly curved*.

Key to the Species of Arboricola†.

- A. Concealed patch of downy feathers under the wing grey.
- a. Feathers of the sides and flanks grey, or grey edged with chestnut, usually with a white spot or shaft-stripe on each.
- a¹. Upper back olive-brown, barred and fringed with black.
- a². Top of the head bright chestnut, chin and throat black, in some specimens each feather narrowly margined with white *A. torqueola*, ♂.
- b². Top of the head brownish or olive-brown, each feather tipped with black.
- a³. Chin, throat, and neck rufous, the two latter spotted all over with black, sometimes on the sides only *A. torqueola*, ♀.
- b³. Chin and throat black, front of neck black, each feather edged with white *A. atrogularis*, ♂ ♀.

* The nails of *Arboricola* are quite characteristic, and the species of this genus may be readily recognized by them alone.

† *Perdix (Arboricola)* sp., v. Martens, J. f. O. 1866, p. 25.

Under this title a specimen in the Military Library at Manilla is briefly characterized as follows:—"Head greenish black, breast vinous-red streaked with black, sides pale red with black spots." This description is so vague that it is impossible to form a decided opinion on it, but probably the bird represents a distinct species of this genus, inhabiting Luzon.

- c³. Chin, upper part of throat, and front of neck white, lower part of throat black *A. crudigularis*, ♂ ♀.
- b¹. Upper back uniform olive-brown, not barred with black; sometimes some of the feathers are slightly fringed with black at their extremities.
- c². Chest grey; top of the head olive-brown, each feather edged with blackish brown.
- d³. Front of the neck bright rufous.
- a⁴. Chin and throat black *A. intermedia*, ♂ ♀.
- b⁴. Chin and throat rufous, thickly spotted with black *A. rufogularis*, ♂ ♀.
- e³. Front of the neck black, separated from the chest by a narrower white and a wider dark chestnut band *A. gingica*, ♂ ♀.
- d². Chest and top of the head chestnut; chin and throat bright rufous; front of neck white, divided from the chest by a narrow black band.. *A. mandellii*, ♂ ♀.
- b. Feathers of the sides and flanks uniform chestnut *A. javanica*, ♂ ♀.
- c. Feathers of the sides and flanks black, with narrow wide-set white bars *A. rubrirostris*, ♂ ♀.
- d. Feathers of the sides and flanks each with a large subterminal white spot, partially or wholly bordered with black.
- c¹. Chest brownish ochre or olive-buff; scapulars chestnut at the extremity; superciliary stripe pale buff *A. brunneopectus*, ♂ ♀.
- d¹. Chest bright rust-red or reddish chestnut; scapulars olive-brown at the extremity.
- e². Superciliary stripe grey *A. hyperythra*.
- f². Superciliary stripe rust-red *A. erythrophrys*, ♂ ♀.
- e. Feathers of the sides and flanks greyish, widely barred with white and black at the extremity.
- e¹. Feathers of the back dark olive-brown, faintly margined with blackish *A. orientalis*.
- f¹. Feathers of the back golden brown, fringed and barred with black *A. sumatrana*.

B. Concealed patch of downy feathers under the wing snow-white. Feathers of the sides and flanks irregularly barred or marked and mottled with brownish black and buff.

f. Sides and flanks marked and mottled with black and buff; chest olive-brown, with wavy bars of black

A. chloropus, ♂ ♀.

g. Sides and flanks barred with black and buff; upper half of chest chestnut

A. charltoni, ♂ ♀.

I. ARBORICOLA TORQUEOLA.

Perdix torqueola, Valenc. Dict. Sci. Nat. xxxviii. p. 435 (1825).

Arborophila torqueola, Hodgs. in Gray's Zool. Misc. p. 85 (1844); id. Icon. ined. in Brit. Mus. nos. 111-114.

Arboricola torqueola, Blyth, Cat. B. Mus. As. Soc. p. 252 (1849).

Arboricola torqueolus, Hume & Marsh. Game B. ii. p. 69, pl. (1879).

Hyloperdix torqueola, Sundevall, Tent. p. 116 (1872).

Perdix megapodia, Temm. Pl. Col. v. pls. 35 & 36 [nos. 462, 463] (1828).

Perdix olivacea, Gray in Griff. An. Kingd. iii. p. 54 (1829); id. Ill. Ind. Zool. i. pl. 57 (1830-32).

Arborophila olivacea, Hodgs. Madr. Journ. 1837, p. 303.

Perdix torquata, Less. Traité Orn. p. 506 (1831).

Hab. Southern slope of the Himalayas from Chamba eastwards as far as Sikhim, and possibly the Naga Hills, ranging from 5000 to 14,000 feet.

This is the only species in which there is any marked difference in the plumage of the sexes; that of the female resembling *A. rufogularis*, though it is easily distinguished from that species by having the legs pinkish grey, not coral-red, the feathers of the back barred and fringed with black, instead of uniform, and the grey of the chest and breast washed with olive-brown.

Hodgson, in his unpublished plates, has confused *A. rufogularis* with the female of *A. torqueola*, but to this I shall refer later on under the head of the former species.

2. ARBORICOLA ATROGULARIS.

Arboricola atrogularis, Blyth, Cat. B. Mus. As. Soc. p. 253 (1849); id. J. As. Soc. Beng. xviii. p. 819 (1849); Hume & Marsh. Game B. ii. p. 79, pl. (1879).

Perdix atrogularis, Gray, List of B. pt. v. Gall. p. 58 (1867).

Arborophila atrogularis, Hume, Str. F. ii. p. 449 (1874).

Arboricola atrigularis, Oates's ed. Hume's Nests & Eggs, iii. p. 439 (1890).

Hab. Ranges from Sudiya in Eastern Assam to the Khasia and Garo Hills, and southwards through Cachar, Tipperah, and Hill Tipperah to Chittagong; also occurs in the Kachin Hills east of Bhamo.

*3. ARBORICOLA CRUDIGULARIS.

Oreoperdix crudigularis, Swinh. Ibis, 1864, p. 426.

Perdix crudigularis, Gray, List of B. pt. v. Gall. p. 57 (1867).

Arboricola crudigularis, Blyth, Ibis, 1867, p. 160.

Hab. Mountains of the interior of Formosa.

4. ARBORICOLA INTERMEDIA.

Arboricola intermedia, Blyth, J. As. Soc. Beng. xxiv. p. 277 (1855).

Arboricola intermedius, Hume & Marsh. Game B. ii. p. 85, pl. (1879).

Arborophila intermedia, Hume, Str. F. ii. p. 450 (1874).

Hab. Naga and Garo Hills, Cachar, Manipur, Arrakan, and Pegu; also obtained in the neighbourhood of Bhamo in Burmah.

5. ARBORICOLA RUFOGULARIS.

Arboricola rufipes, Hodgs. in Gray's Zool. Misc. p. 85 (1844); id. Icon. ined. in Brit. Mus. no. 112.

Arboricola rufogularis, Blyth, Cat. B. Mus. As. Soc. p. 253 (1849); id. J. As. Soc. Beng. xviii. p. 819 (1849); Hume & Marsh. Game B. ii. p. 75, pl. (1879).

Perdix rufogularis, Gray, List of B. pt. v. Gall. p. 58 (1867).

Arborophila rufogularis, Hume, Str. F. ii. p. 450 (1874).

Arboricola rufigularis, Blyth, Mamm. & B. Burma, p. 150 (1875).

Arborophila tickelli, Hume, in Hume & Marsh. Game B. ii. p. 78, note (1879).

Hab. Lower outer ranges of the Himalayas from Kumaon through Nepal and Sikhim as far east as the Daphla Hills, north of the Darrang district. It also occurs in the higher ranges of Tenasserim, on Mooleyit.

There is no doubt that *Arboricola rufipes*, Hodgson, is the oldest name for this species, and I should not hesitate to use it instead of Blyth's, were it not for the fact that, after a careful examination of Hodgson's specimens and figures, I find that he undoubtedly confused the present species with the female of *A. torqueola*. This may best be seen by examining his plates, when it will be noted that some of the specimens figured as the females of *A. torqueola* have no black bars on the back, and clearly belong to his *A. rufipes*. No doubt the specimens in question were not seen by Hodgson until the colours of the legs (the only character by which he distinguished the two species) had faded, and had thus escaped his observation. Hume has proposed the name *A. tickelli* for the Tenasserim form of *A. rufogularis*, which usually lacks the black line dividing the rufous at the base of the neck from the grey chest; but after examining a large series of specimens from Mooleyit, I find that, though this black band is absent in the majority (in which respect they approach *A. intermedia*), it is represented in some birds of each sex by interrupted black spots at the ends of some of the rufous feathers at the base of the neck, while in one female specimen it is as strongly defined as in any from Sikhim. On the other hand, in some Himalayan birds, the black line, though indicated, is imperfect. From these facts it is clear that the Tenasserim birds cannot be separated from the Himalayan.

6. ARBORICOLA MANDELLII.

Arborophila mandellii, Hume, Str. F. ii. p. 449 (1874), & iii. p. 262, pl. i. (1875).

Arboricola mandellii, Hume & Marsh. Game B. ii. p. 83, pl. (1879).

Hab. Low hills of Bhootan and Native Sikkim.

This beautiful species is now represented in the British Museum by eleven specimens, which were all obtained by Mr. Mandelli's collectors, and now form part of the Hume Collection.

†7. *ARBORICOLA GINGICA*. (Plate IX.)

La Perdrix de Gingi, Sonnerat, Voy. Ind. Orient. ii. p. 167 (1782) [male only].

Tetrao gingicus, Gmel. S. N. i. p. 760 (1788).

Perdix gingica, Lath. Ind. Orn. ii. p. 648 (1790); Temm. Fig. et Gall. iii. pp. 410, 733 (1815).

Arboricola gingica, Blyth, Ibis, 1870, p. 174.

Hab. Quite uncertain; possibly the island of Luzon, certainly not the Coromandel coast.

This species was first described by Sonnerat*, who, though he calls it "*La Perdrix de Gingi*," does not say where his specimen was obtained. On this description Gmelin based his "*Tetrao gingicus*," and gave as the habitat "*Gingi in Coromandel*." In 1815 Temminck redescribed the species under the name of *Perdix gingica*, from a bird in his own collection, and remarked that he had seen a similar specimen in London. If this specimen ever formed part of the British Museum Collection, it is now no longer there.

In this Journal for 1870 (p. 174) Blyth again described the same species as *Arboricola gingica*, from a bird in the Leyden Museum (no doubt the same as that described by Temminck), and it is this specimen which, by the kind permission of Dr. Jentink, and with the help of that most obliging ornithologist Mr. Büttikofer, is figured in the accompanying beautiful Plate by Mr. Keulemans.

In the '*Journal für Ornithologie*,' 1866, p. 25, Dr. E. von Martens (see p. 390) briefly describes a specimen preserved

* The bird described by Sonnerat as the female of the "*Perdrix de Gingi*" is, as already pointed out on p. 388, undoubtedly a species of *Bambusicola*, probably at present unknown.

in the Military Library at Manilla. This bird is doubtfully referred to *A. gingica* by Lord Tweeddale, but anyone comparing von Martens's description with the plate must see at once that they differ in nearly every point. What the bird preserved in the Military Library really is remains to be proved; but even supposing that Luzon should be the true home of *A. gingica*, there is no reason why a second and perfectly distinct species should not exist in the same island. I am sure that when Luzon is properly explored a number of new or half-forgotten species will come to light, and that the visit of some enterprising naturalist, who would thoroughly work the hills of the interior of that island, would be well repaid.

8. ARBORICOLA JAVANICA.

Javan Partridge, Brown, Ill. Zool. p. 40, pl. 17 (1776).

Tetrao javanicus, Gm. S. N. i. p. 761 (1788).

Perdix javanica, Lath. Ind. Orn. ii. p. 651 (1790); Temm. Pl. Col. v. pl. 34 [no. 148] (1823).

Arborophila javanica, Gray, List Gall. B. iii. p. 38 (1844).

Arboricola javanica, Blyth, Ibis, 1867, p. 159.

Peloperdix javanica, Meyer, Vog.-Skel. pt. xi. pl. ci. (1886).

Hab. Mountains of Java.

I can find no authority for the occurrence of this bird in Sumatra.

9. ARBORICOLA RUBRIROSTRIS.

Peloperdix rubrirostris, Salvad. Ann. Mus. Civ. Genov. xiv. p. 251 (1879); Snelleman, in Veth, Midden-Sumatra, iv. p. 46, pl. iii. (1887).

"*Perdix vethi*," Snelleman, in Veth, Midden-Sumatra, iv. pp. 30, 31 (1887).

Hab. Mountains of Sumatra.

The feathers producing the line of white spots along each side of the crown and throat are very curious, being naked shafts bearing a white plume at the extremity. Similar structures are found among the feathers of the crown in the next species, *A. brunneopectus*, but owing to their extremities being black they are less conspicuous.

10. ARBORICOLA BRUNNEOPECTUS.

Arboricola brunneopectus, Tick. MS.; Blyth, J. As. Soc. Beng. xxiv. p. 276 (1855); Hume & Marsh. Game B. ii. p. 87, pl. (1879).

Arborophila brunneopectus, Hume, Str. Feath. ii. p. 449 (1874).

Arboricola brunneipectus, Blyth, Ibis, 1867, p. 159.

Arborophila brunneipectus, Wald. Ibis, 1875, p. 459.

Hab. From the Karen Hills, Tonghoo, and the Eastern Pegu Hills, to as far south as Tavoy in Tenasserim.

†11. ARBORICOLA HYPERYTHRA.

Bambusicola hyperythra, Sharpe, Ibis, 1879, p. 226; Gould, B. Asia, vi. pl. 71 (1879).

Hab. Lawas River, North-west Borneo.

The type specimen in the Oxford Museum still remains unique. Dr. Sharpe considered this species, as well as the following, to belong to the genus *Bambusicola*, comparing it with *B. sonorivox*, but in reality both are nearly allied to *A. brunneopectus*, and along with that species form a well-marked group of *Arboricola*.

†12. ARBORICOLA ERYTHROPHRYS.

Bambusicola hyperythra, Sharpe (nec Sharpe, 1879), Ibis, 1887, p. 454.

Bambusicola erythrophrys, Sharpe, Ibis, 1890, pp. 139, 284, 288, 289, pl. iv.

Hab. Mount Kina Balu, North Borneo.

This species is still known only from the specimens met with by Mr. Whitehead. It was not obtained by Mr. Hose during his recent expedition to Mount Dulit, though it may probably occur there also.

13. ARBORICOLA ORIENTALIS.

Perdix orientalis, Horsf. Trans. Linn. Soc. xiii. p. 184 (1822).

Perdix personata, Horsf. Zool. Res. pl. 61 (1824).

Tropicoperdix personata, Blyth, J. As. Soc. Beng. xxviii. p. 415 (1859).

Arboricola personata, Blyth, Ibis, 1867, p. 159.

Hab. Mountains of Java.

Horsfield first called this bird *Perdix orientalis*, and subsequently, for no apparent reason, substituted the name of *personata*; but of course the former name must be used.

*14. ARBORICOLA SUMATRANA.

Perdix personata, Gray, List B. pt. v., Gall. p. 59 (1867) [part Sumatra].

Arborophila personata, Nicholson, Ibis, 1883, p. 255.

Arborophila sumatrana, Grant, Ann. Mag. N. H. (6) viii. p. 297 (1891).

Hab. Mountains of Sumatra.

This bird is very distinct from the last-named species, with which it has hitherto been confounded, and may readily be recognized from having the feathers of the back strongly barred, as well as fringed, with black.

15. ARBORICOLA CHLOROPUS.

Tropicoperdix chloropus, Tick. MS.; Blyth, J. As. Soc. Beng. xxviii, p. 415 (1859).

Arboricola chloropus, Tick. J. As. Soc. Beng. xxviii. p. 453 (1859); Hume & Marsh. Game B. ii. p. 91, pl. (1879).

"*Phenicoperdix chloropus*, Blyth," Hartl. Arch. f. Naturgesch. xxvi. pt. ii. p. 99 (1861).

Arborophila chloropus, Hume, Str. F. ii. p. 449 (1874).

Peloperdix chloropus, Hume, Str. F. iii. p. 176 (1875).

Hab. From Tonghoo and the Eastern Pegu Hills southwards along the lower slopes of the Tenasserim Hills as far as Tavoy. It has also been recorded from Cochin China.

16. ARBORICOLA CHARLTONI.

Perdix charltoni, Eyton, Ann. & Mag. N. H. xvi. p. 230 (1845).

Francolinus charltoni, Gray, Gen. B. iii. p. 505 (1846).

Arboricola charltoni, Blyth, Cat. B. Mus. As. Soc. p. 253 (1849); Hume & Marsh. Game B. ii. p. 93, pl. (1879).

Tropicoperdix charltoni, Blyth, J. As. Soc. Beng. xxviii. p. 415 (1859).

"*Peloperdix charltoni*, Blyth," Gray, List B. pt. v., Gall. p. 58 (1867).

Arborophila charltoni, Hume, Str. F. ii. p. 450 (1874).

"*Arboricola pyrrhogaster*, Reichenb.," Blyth, Cat. Mamm. & B. Burma, p. 151 (1875).

Hab. The Malay Peninsula from Penang southwards, Sumatra, and N.E. Borneo. Mr. Hume states that it has also been sent from Bangkok, in Siam, and that it is reported to have been obtained in the Southern Tenasserim Hills.

In the females the blackish-brown barring on the lower half of the chest is more broken up and less sharply defined than in the males.

XXXIV.—*Further Additions to the Avifauna of Tsu-sima, in the Japanese Empire.* By HENRY SEEBOHM.

MR. HOLST has sent me a third collection of birds from the island of Tsu-sima, in the Straits of Corea, which enables me to add five more species to the list of birds inhabiting the island, as given above, pp. 87, 248. As before, the numbers refer to my 'Birds of the Japanese Empire.'

132. *PICUS RICHARDSI.*

In addition to the two males of this fine Woodpecker sent in the previously-mentioned package, Mr. Holst has now sent two females shot on Tsu-sima, the one on the 14th and the other on the 30th of November. The extent of white at the tip of the outer web of the third primary is one inch in one of them and an inch and an eighth in the other. There can now be no doubt of the identity of *Picus kalinowskii* from Corea with this species.

170. *SCOPS JAPONICUS.*

Mr. Holst has sent an example of the Japanese race of the Scops Owl shot on Tsu-sima on the 27th of October. It is

rather grey, and the wing measures $5\frac{3}{4}$ inches from the carpal joint.

190. ACCIPITER PALUMBARIUS.

Mr. Holst has sent a fine female Goshawk, shot on Tsu-sima on the 26th of October.

193. PHALACROCORAX CARBO.

Mr. Holst has sent the skin of a Common Cormorant, which was shot on Tsu-sima on the 6th of November. It has fourteen tail-feathers, and the scapulars and wing-coverts are bronzy brown, margined with black. The Shags have only twelve rectrices.

246. FULIGULA CLANGULA.

Mr. Holst has sent an example of the Golden-eye, shot on Tsu-sima in November.

361. CREX FUSCA ERYTHROTHORAX.

Mr. Holst has sent an example of the Siberian race of the Ruddy Crake shot on Tsu-sima. It measures $4\frac{1}{2}$ inches in length of wing from the carpal joint.

XXXV.—*On Birds collected or observed in the Vicinity of Foochow and Swatow in South-eastern China.* By JOHN D. DE LA TOUCHE.—Part I. (Communicated by H. H. SLATER.)

THE province of Fukien is one of the smallest and, I believe, one of the wildest and least populated provinces of China. During the three and a half years which I spent at Foochow, my collecting-grounds were confined to the strip of country extending from the sea-coast to about 130 miles up the River Min. A brief account of the country may be of interest in connection with the list of birds obtained in the district.

From Ching-feng-ling *, the furthest point reached by

* I do not know the altitude of the Ching-feng Mountains, but I believe that the country stands at least 3000 feet above the sea-level, as for 15 miles before getting there the road goes on gradually rising till Ching-feng-ling is reached.

me, to Shuikow (distance about 40 miles by road) the country is wholly mountainous; the hills are well wooded in many parts and covered with thick jungle in others, rice being grown in the valleys. The bed of the river down to Shuikow is full of rocks and unnavigable for any but rapid-boats, the ordinary river-boats loading or discharging their cargo at Shuikow (about 90 miles from the sea). The hills which border the river for the next 50 miles are fairly high and steep; woods are numerous, but are chiefly composed of firs (*Pinus sinensis* and *Cunninghamia lanceolata*), and bracken and sword-grass jungle clothe the hill-sides to a very great extent. The river continues to be hemmed in by the hills till about 10 miles below Shuikow. The country then opens out a little, allowing, occasionally, stretches of flat cultivated country to extend between the hills and the river-banks. Fifty miles below Shuikow the Foochow valley is reached and the river divides into two wide branches, which, uniting again about 18 miles further down at the Pagoda anchorage, form the Island of Nantai. The extent of the valley is about 25 miles in length, and 15 miles at its extreme width. Rice (two crops), wheat, colza, sweet potatoes, a little sugar, and water-chestnuts are the chief ground-crops. There are also extensive groves of orange (mandarin), lychee (*Nephelium litchi*), hingan (*Nephelium longan*), and Chinese olive (*Canarium album*); large banyans and clumps of tall pines occur here and there, and some ranges of low hills which traverse the island are partly covered with pine-woods.

The hills which shut in the valley on the north are known as the Peling (Northern Range) hills. This country resembles that which lies between Shuikow and Ching-feng. It is celebrated for its tea-plantations, which cover the hills to a considerable extent. There is also a fair amount of wooded country, and the valleys are devoted to the production of rice. The altitude of Peling varies from 1000 to 3000 feet.

The Yung-fu river flows into the Min at the southern side of the valley. The hills along the Yung-fu are extensively

planted with bamboos. The scenery, though exceedingly picturesque, is not so grand or so wild as that met with along the Min.

The mountainous country which closes the Foochow valley on the south-west presents at a distance a succession of jagged and steep peaks; the altitude seems much the same as that of Peling. On leaving the anchorage the river makes a sharp bend and turns N.E. It now winds through steep hills, varying in height from 600 to 2000 feet, which are terraced and cultivated, or else scantily wooded here and there with scrubby pines, and, after passing through the Mingan and Kimpai passes, flows out into the sea. The country from the coast to Foochow is granitic; further inland limestone is not uncommon.

I do not know of any lakes or proper marshes in the Foochow district, except on the coast near the mouth of the river. There are, however, numerous marshy islands in the river, where water-birds occur in numbers during migration time. I have heard of some marshes on the mainland near the Haitan Straits, where wildfowl of every description are said to abound.

The tide is felt on the River Min till about 35 miles from its mouth; but above Foochow, though the water rises, the current is not affected by the tide.

The Lieu-chiang (or Lieu river), until within a few miles of the coast, winds wholly among mountainous country, which resembles that of the Min valley, and then flows through cultivated plains which extend down to the coast.

The vegetation of the Foochow district is subtropical. Of the tropical fruit cultivated in gardens, mangoes ripen, but are of small size; banana-palms are common, but the fruit does not ripen properly.

Land-shells are scarce, owing to the granitic formation of the hills. Freshwater-shells, however, are abundant; but only one new species—a *Melania*—was noted by Père Heude, S.J., among those I collected for him.

Insects of all kinds abound; they belong mostly to tropical types.

The following is a list of the principal Mammals* of the district :—

Macacus sp. inc. Monkeys are said to occur in small numbers on the hills situated somewhere between Shuikow and Foochow. They are probably of the same species as those discovered by Père David at Kuatun.

Vesperugo serotinus. Abundant.

Vesperugo abramus. Abundant.

Hipposiderus armiger.

Hipposiderus fulvus.

Sorex murinus. Abundant.

Ursus tibetanus. I saw once a dead bear being hawked about in the streets at Foochow.

Meles leptorhynchus? Occurs near Foochow.

Martes flavigula. A large orange-yellow marten seen on one occasion was no doubt of this species.

Putorius sibiricus.

Lutra chinensis.

Felis tigris. The tiger has of late years been seen within a few miles of Foochow. Cubs are occasionally brought down for sale from up country. At Puch'eng, according to Mr. Baun, they are not uncommon, but keep strictly to certain parts of the country.

Felis macrolepis. An untanned skin of a Clouded Leopard, said to have been shot forty miles up the Min, was once brought to me for sale.

Felis chinensis. Common.

Viverra zibetha. Common.

Viverrula malaccensis. Common.

Urva cancrivora. Shot near Lieu-chiang-hsien.

Vulpes lineiventris (?). Abundant.

Hystrix subcristata.

Lepus sinensis.

Sciurus castaneiventris.

Sciurus maccllellandi.

Mus decumanus.

Mus rattus.

Mus musculus.

Mus losea.

Sus leucomystax. The natives at Ching-feng-ling told me that wild pigs occur in their mountains.

* The bats and smaller mammals collected by me at Foochow and Swatow have been identified by Mr. Oldfield Thomas.

Cervus sp. inc. Large deer are said to inhabit the hills, but I never saw any.

Cervulus reevesi (?). Examples of a species of *Cervulus* are often brought to market at Foochow.

Manis dalmani.

Climate.—The climate of Foochow is decidedly moist. It rains in the district during six months of the year, the clear cool season hardly lasting three months. The rainy season begins early in January, and lasts more or less till April. The summer is very hot; in July and August heavy thunderstorms are of almost daily occurrence. September is hot and often rainy, and the heat lasts well into October. From the end of October to the beginning of January the weather is very fine, much resembling that of the winter of the Riviera in Southern Europe.

I regret that I am unable to produce a sketch of N.E. Kwangtung; but a glance at the map will show Swatow to be just within the Tropic of Cancer. A brief notice of this locality may be of interest.

The Swatow bay is partly closed at its entrance by the hilly island called, from its shape, Double Island, and the passages left for in- and out-going vessels are consequently very narrow. On entering the bay we have on the right an extensive plain, intersected by numerous creeks and mouths of the Chao-chow-fu river, which is bounded on the north-west and north by the Chao-chow-fu hills. On the left we have Kakchih Island, consisting of a mass of granitic hills reaching to about 1000 feet in height, scantily planted with stunted pines. The town of Swatow, which is of recent growth, is situated about five miles up the bay, and is principally built on land reclaimed from the sea. The bay, which up to this point has been wide and more or less circular in shape, is now hemmed in by the Kakchih hills on the one side and Swatow on the other, the distance from shore to shore being only about a mile across; it then expands again and forms a large area full of shallows, bordered on the north-east by numerous lagoons and marshes, which extend far behind Swatow, and is closed in the west, about fifteen miles from Swatow, by a marshy region, beyond which the moun-

tainous region of Taiyang shows itself. The Ketiáng (or Kéyong) river flows in at the west end of the bay; and one of the mouths of the Han or Chao-chow-fu river finds an exit in the north, just behind Swatow. A large tidal creek, separating Kakchíoh Island from the mainland, also connects the bay with the sea on the south.

During the winter and in migration-time the bay and marshes are filled with birds of all descriptions, and the wild-fowl shooting offers about the best sport of the kind on the China coast. Mangroves (*Rhizophora mangle*) cover the marshes to a great extent.

The soil of the plain is sandy and very fertile; sugar, rice (two crops), wheat, sweet potatoes, pea-nuts (*Arachis hypogæa*), and indigo are the principal crops. The fruits grown are:—oranges (several varieties of mandarins and the so-called "coolie" orange), bananas, pineapples, pome-lices, mangoes, custard-apples, lychees, &c.

The hills in the neighbourhood of Swatow are, as a rule, barren, and shelter very few birds. The Taiyang hills and those further west are well stocked with birds, judging from the collections brought down by my shooting-boy on three occasions. I never had an opportunity of visiting them. The hill-country which borders the river above Chao-chow-fu differs somewhat from the Foochow hill-country, the mountains being larger, more rounded in shape, and rather better wooded. Bamboo-groves, or rather forests, occur in the valleys, the bamboos being often of enormous size. The French missionaries have told me that further up the river there are woods of considerable extent.

Chao-chow-fu, the prefecture of the Swatow district, is about 30 miles north-west of Swatow. I had only one opportunity of going up the Chao-chow-fu river; and the weather being bad, and my time limited, the result of the expedition was meagre.

The insect-fauna of N.E. Kwangtung is tropical. Land-shells are rare near Swatow, the hills being formed of granite, as at Foochow; but freshwater-shells are abundant.

I collected very few mammals; but judging from accounts

given me by the French missionaries, and from the few specimens obtained by my boy, it is likely that many species not previously known to inhabit this corner of China, and possibly new to science, would be discovered, were the country properly explored.

The climate of Swatow is dry, and is far healthier than that of Foochow. The summer heat is not so exhausting as that of many parts of China situated further north, but it lasts for nearly six months of the year, from May to the end of October. November, December, and January are cool; and during these three months rain hardly ever falls, except perhaps towards the end of January, and the weather is then almost perfect. The rainy season is not of long duration, lasting from the end of January to March. The remainder of the year is generally free from long-continued rains; but in summer thunder-storms are frequent, and occasionally the port is visited by a typhoon.

My notes on the avifauna of N.E. Kwangtung are too scanty to allow of a proper comparison between it and that of the Foochow district. Still, the following differences may as well be pointed out, subject to the correction of future collectors:—

Thrushes.—The most abundant Thrushes in the Foochow district are *Merula pallida*, *M. naumanni*, and *M. fuscata*. As winter visitants, however, the two latter are rare. Spring seems to be the season during which all the Thrushes I observed at Foochow (*M. hortulorum* excepted) are most abundant. *M. hortulorum* is the scarcest of the Foochow Thrushes, and I obtained it only in winter. *M. fuscata* and *M. naumanni* seem to avoid the Swatow plain altogether, as I did not observe a single one there. *M. pallida* seems rare at Swatow, and *M. hortulorum* common on the hills west of Swatow.

Warblers.—*Luscinola fuscata*, almost unknown at Foochow in winter, is a common Swatow winter bird.

Tits.—*Parus minor* prevails at Foochow, and *P. cinereus* (or *P. commixtus*) at Swatow.

Wagtails.—The Swatow Wagtails are all winter visitants,

with the exception of *Motacilla flava*. At Foochow *M. leucopsis* appears to be a resident, retiring in summer to the hills. *M. lugens* is a migrant, though possibly a very few may winter in the district.

Flycatchers.—In the Flycatchers a marked difference will be noticed. Two species which are common at Foochow apparently avoid Swatow, viz. *Pericrocotus cantonensis* and *Hemichelidon sibirica*. *Pericrocotus cinereus*, *Muscicapa griseisticta*, and *Terpsiphone princeps*, which pass Swatow in April, avoid Foochow. *Hemichelidon ferruginea*, very rare at Foochow, is common at Swatow. *Siphia strophiala* and *Cryptolopha affinis*, which come to the Swatow hills in the spring and probably breed there, are unknown at Foochow.

Swallows.—At Swatow both *Hirundo gutturalis* and *H. nipalensis* are residents, the former being of course far more abundant in summer than in winter. At Foochow the Swallows are migratory or else summer visitants. On one or two occasions only in winter I noticed there a stray House-Swallow.

Larks.—The common Sky-Lark (*Alauda arvensis*), abundant at Foochow in winter, does not appear to reach Swatow, being replaced there by *A. caelivox*.

Cuckoos.—*Eudynamis maculata* and *Cacomantis tenuirostris* make N.E. Kwangtung their northern limit in Eastern China. *Centropus bengalensis*, rare at Foochow, is common on the Swatow hills. *Cuculus sparverioides*, obtained on the Taiyang hills, west of Swatow, was never noticed by me at Foochow.

Accipitres.—Foochow has two Eagles, *Aquila heliaca* and *A. fasciata*. We did not note either of these at Swatow, where *A. navia*, not noticed at Foochow, was the only Eagle obtained. The Sea-Eagles, *Haliaëtus leucogaster* and *H. albicilla*, are probably common to both ports.

Pelicans.—It seems strange that, on the Yangtze, winter is the time of appearance of the Pelicans; at Foochow, the summer; while at Swatow they are also common in summer and only occasionally seen in winter. They probably go inland for the cold and rough season.

*Heron*s.—At Swatow *Herodias eulophotes* takes the place in summer of *H. garzetta*, which goes further north to breed. The Spoonbill (*Platalea minor*) is a summer visitant to the Foochow coast, while at Swatow it is a winter bird.

Gulls.—*Larus saundersi* seems scarce at Foochow, while at Swatow it is abundant in the spring.

The Swatow coast seems also to be favoured by most of the Terns in summer; but I suspect that these will be found to breed on the Foochow coast as well.

The list of birds noted in the Foochow district shows a total number of 305 species, which, following Mr. Styan's division of breeders and non-breeders, may be divided as follows :—

Breeders :—

Resident	88	
Summer visitants.....	26	
	—	114

Non-breeders :—

Winter visitants	93	
Migrants.....	{ Spring 58	{ 90
	{ Autumn 65	{ — 183
		—
Total		297

The addition of *Athene brodiei*, *Sitta sinensis*, *Butorides javanicus*, and *Sterna fluviatilis*, which were not noticed and probably overlooked, and of *Tichodroma muraria*, *Pericrocotus speciosus*, *Volvocivora melaschista*, and *Pelecanus mitratus*, mentioned by Père David and Swinhoe as having been obtained at Foochow, brings up the total number of the birds of the Foochow district to 305 species.

If the district be extended so as to include all Central Fukien, eighteen resident species, examples of which were procured by Swinhoe about Amoy or by Père David at Kuatun, can be added. I have little doubt that most of these birds occur not far west of Foochow. They are as follows :—

<i>Vicia innominata.</i>	} Probably to be found about Ching-feng-ling.
<i>Dicaeum cruentatum.</i>	
<i>Niltava sundara.</i>	
<i>Ixus xanthorrhous.</i>	} Probably to be found about Ching-feng-ling.
<i>Garrulax picticollis.</i>	
<i>Ianthocichla berthemyi.</i>	
<i>Trochalopteron milni.</i>	
<i>Heteromorpha gularis.</i>	
<i>Suthora icebbiana.</i>	} Probably to be found on Yen-ping-fu hills.
<i>Cochoa viridis.</i>	
<i>Staphida torqueola.</i>	
<i>Erithacus akahige.</i>	
<i>Cettia minuta.</i>	
<i>Suya parumstriata.</i>	
<i>Abrornis fulvifacies.</i>	
<i>Machlolophus rex.</i>	
<i>Pucrasia darwini.</i>	
<i>Phasianus ellioti.</i>	

(See David & Oustalet, 'Oiseaux de la Chine.')

A reference to Père David's and Swinhoe's writings on the birds of China will further show 42 migratory species which probably pass Central Fukien or the Foochow coast on migration, or else which come to breed in the mountains. These are:—

- Elanus caeruleus.*
- Astur palumbarius.*
- Astur cuculoides.*
- Astur soloensis.*
- Scops stictonotus.*
- Coccyzus coromandus.*
- Cuculus sparveriioides.* (Swatow, Tientsin.)
- Cuculus striatus.*
- Cuculus poliocephalus.*
- Caprimulgus monticola.*
- Chatura caudacuta.*
- Lanius tigrinus.* (Puch'eng, N.W. Fukien: Baun.)
- Lanius cristatus.*
- Lanius bucephalus.* (Puch'eng: Baun.)
- Perierocotus griseigularis.*
- Terpsiphone princeps?* (Swatow, Shanghai.)
- Myiagra azurea.*
- Stoparola melanops.*
- Muscicapa albicilla.* (Puch'eng: Baun.)

- Muscicapa griseisticta?* (Swatow.)
Cettia squamiceps.
Calamodus sorghophilus.
Locustella macropus.
Locustella lanceolata.
Calamodyta insularis.
Phylloscopus xanthodryas.
Limonidromus indicus. (Swatow, Yangtze valley, Corea.)
Schaniicola pallasi.
Emberiza tristrami.
Emberiza rutilans.
Fringilla montifringilla. (Puch'eng: Baun.)
Padda oryzivora. (Swatow, Amoy, Shanghai.)
Totanus stagnatilis.
Porphyrio caelestis?
Hypotaenidia striata.
Rallina mandarina.
Gallinula cozzineipes. (Swatow, Shanghai.)
Anser albifrons.
Edemia fusca.
Fulix mariloides.
Puffinus leucomelas.
Sula fiber.

(See Swinhoe, P. Z. S. 1871, p. 343 *et seqq.*, and David & Oustalet, 'Oiseaux de la Chine.')

We thus find for Central Fukien a total of 365 species, showing this small corner of China to possess one of the richest avifaunas of the eighteen provinces. Were the birds of North-east Kwangtung properly studied, it is probable that not only would they exceed in number those of Central Fukien, but that many new species would be discovered. Though foreigners have been established for many years at Swatow, the interior has never, to my knowledge, been visited by naturalists; and the collections made by my shooting-boy show the country to be of great interest.

I have to thank Messrs. Henry H. Slater and F. W. Styan for their valuable help in compiling my notes and identifying most of the species of birds collected; likewise Messrs. Baun, C. W. Campbell, and the Rev. Father Li of Foochow, for the gift or loan of many specimens. The Foochow native wild-fowlers proved invaluable in procuring information and in

shooting specimens; and my best thanks are also due to the French missionaries of East Kwangtung, who helped me in every possible way during my stay at Swatow.

The numbers in brackets are those of David and Oustalet's 'Oiseaux de la Chine.'

1. *MERULA MANDARINA* (Bp.). [229.]

Foochow. Styan, Ibis, 1887, p. 216.

Common and resident about Swatow. This Blackbird is a favourite cage-bird with the Chinese.

2. *MERULA HORTULORUM* (Sclater). [234.]

Foochow. Styan, Ibis, 1887, p. 216.

Appears to be common in winter on hills west of Swatow. Several were obtained by my shooting-boy.

3. *MERULA CHRYSOLAUS*, Temm. [237.]

Foochow. Styan, Ibis, 1887, p. 216.

Not noted in winter at Foochow.

One shot at the beginning of February on the hills beyond Chao-chow-fu, N.W. of Swatow.

4. *MERULA OBSCURA* (Gm.). [238.]

Foochow. Styan, Ibis, 1887, p. 216.

November, end of February, and beginning of May.

Two were shot by my shooting-boy in April on the hills west of Swatow.

5. *MERULA CARDIS* (Temm.). [235.]

Foochow. Styan, Ibis, 1887, p. 217.

One shot in April on hills west of Swatow.

6. *MERULA PALLIDA* (Gm.). [236.]

Foochow. Styan, Ibis, 1887, p. 216.

Seen at Swatow in March; probably a winter visitant.

7. *MERULA NAUMANNI* (Temm.). [239.]

Foochow. Styan, Ibis, 1887, p. 216.

Though I have never noticed this species in winter, I suspect that it may winter on the hills, a specimen having been shot as late as the 30th November.

8. *MERULA FUSCATA* (Pall.). [240.]

Foochow. Styan, Ibis, 1887, p. 217.

It is a winter visitant, as one was shot in the Peling country in January.

Neither this nor the preceding species was observed by me at Swatow.

9. *GEOCICHLA VARIA* (Pall.). [244.]

Foochow. Styan, Ibis, 1887, p. 217.

Fairly common in winter in the Peling country.

One shot on the Swatow plain in March.

10. *MYIOPHONEUS CÆRULEUS* (Scop.). [267.]

Foochow. Styan, Ibis, 1887, p. 217.

Swatow hill-country.

11. *MONTICOLA SOLITARIA* (Briss.). [249.]

Foochow. Styan, Ibis, 1887, p. 217.

Very common and resident at Foochow and Swatow.

12. *MONTICOLA CYANUS* (L.). [251.]

Foochow. Styan, Ibis, 1887, p. 217.

Common and resident at Foochow and Swatow.

13. *COPSYCHUS SAULARIS* (L.). [264.]

Foochow. Styan, Ibis, 1887, p. 218.

Abundant and resident at Foochow and Swatow.

In the pairing-season the males fight desperately. On one occasion I very nearly captured a couple that were tumbling about on the lawn in front of our house. They were so intent on the fight that they let me put my hat over them. They are, however, capable of gentler feelings, as I have seen one, on the piano being played indoors, come and perch on the verandah railings and join in with its best song.

I saw a caged specimen of this bird at Swatow which had been trained to turn somersaults, and would do this at any time on a whirling motion being made with the hand near its cage.

14. *DRYONASTES PERSPICILLATUS* (Gm.). [286.]

Foochow. Styan, Ibis, 1887, p. 218.

Abundant and resident; likewise at Swatow.

15. *DRYONASTES SANNIO* (Swinh.). [287.]

Foochow. Styan, Ibis, 1887, p. 218.

Foochow and Swatow hills. It is much less common than the preceding species. It is doubtless a resident.

16. *TROCHALOPTERON CANORUM* (Linn.). [283.]

Foochow. Styan, Ibis, 1887, p. 218.

Common and resident on Foochow and Swatow hills.

In South China the *Huamei* is much used as a fighting-bird.

17. *POMATORHINUS STRIDULUS*, Swinh. [280.]

Foochow. Styan, Ibis, 1887, p. 218.

Also a common resident on the Swatow hills.

18. *POMATORHINUS SWINHOEI*, A. Dav. [277.]

During a journey undertaken in November 1885 up the valley of the River Min I heard on the hill-sides, from Shui-kow to Ching-feng-ling, a bird-call which must have been that of this species. Mr. Baun, who obtained the specimen described by Mr. Seebohm (P. Z. S. 1891, p. 342), told me that it was common about Ching-feng-ling, but that it was very cunning and difficult to shoot.

19. *PARADOXORNIS GUTTATICOLLIS*, A. Dav. [301.]

Foochow. Styan, Ibis, 1887, p. 218.

20. *SUTHORA SUFFUSA*, Swinh. [308.]

Puch'eng. Styan, Ibis, 1887, p. 218.

Foochow. La Touche, Ibis, 1887, p. 470.

21. *CINCLUS PALLASII*, Temm. [277.]

Foochow. Styan, Ibis, 1887, p. 219.

Occurs also in the hills west of Swatow.

22. *HENICURUS SINENSIS*, Gould. [426.]

Foochow. Styan, Ibis, 1887, p. 219.

A resident and common species on the hills; also found in Swatow hill-country.

23. *HENICURUS SCHISTACEUS*, Hodgs. [427.]

Foochow. Styan, Ibis, 1887, p. 219.

Occurs in the valleys of the Yungfu and Min Rivers; it is rather a scarce bird.

24. *MICROCICHLA SCOULERI* (Vigors). [428.]

Foochow. Styan, Ibis, 1887, p. 219.

Not uncommon on some mountain-streams. Also obtained from the hill-country west of Swatow.

25. *PRATINCOLA MAURA* (Pall.). [256.]

Foochow. Styan, Ibis, 1887, p. 219.

Arrives at Foochow at the end of September. It is also a common winter visitant to Swatow.

26. *OREICOLA FERREA* (Hodgs.). [257.]

Foochow. Styan, Ibis, 1887, p. 219.

Swatow hills in winter.

27. *RUTICILLA AUROREA* (Pall.). [260.]

Foochow. Styan, Ibis, 1887, p. 219.

A common winter bird at Swatow.

28. *RHYACORNIS FULIGINOSA* (Vig.). [262.]

Foochow. Styan, Ibis, 1887, p. 226.

Occurs also on Swatow hills.

29. *ERITHACUS CÆRULECULA* (Pall.). [339.]

Foochow. Styan, Ibis, 1887, p. 219.

Probably also a winter visitant to Swatow, but not observed.

30. *ERITHACUS CALLIOPE* (Pall.). [340.]

Foochow. Styan, Ibis, 1887, p. 219.

Shot at Swatow on 27th April and 5th May.

31. *PHYLLOSCOPUS TENELLIPES*, Swinh. [390.]

Foochow. Styan, Ibis, 1887, p. 219.

Not a common bird. Shot at Swatow in April.

32. *PHYLLOSCOPUS CORONATUS* (Temm.). [389.]

Foochow. Styan, Ibis, 1887, p. 219.

Rare at Foochow. One shot at Swatow on 30th March.

33. *PHYLLOSCOPUS BOREALIS* (Blas.). [392.]

Foochow. Styan, Ibis, 1887, p. 219.

Passes in April and May, and again very abundantly on the autumn migration, which begins at the end of August and goes on during September and October. At Swatow this Willow-Warbler is very common during the month of May.

34. *PHYLLOSCOPUS SUPERCILIOSUS* (Gm.). [396.]

Foochow. Styan, Ibis, 1887, p. 219.

Very common at Foochow from October to the end of April, and also at Swatow throughout the winter.

35. *PHYLLOSCOPUS PROREGULUS* (Pall.). [397.]

Foochow. Styan, Ibis, 1887, p. 219.

Very common from the end of October to the end of March. I have noticed it in full song just before its departure. Also a common bird at Swatow in winter.

36. *LUSCINIOLA FUSCATA* (Blyth). [387.]

Foochow. Styan, Ibis, 1887, p. 220.

Fairly common in this district from the beginning of February to the middle of May. A few winter here.

This is a common winter bird at Swatow. It is extremely abundant there in the spring.

37. *ACROCEPHALUS ORIENTALIS* (T. & S.). [365.]

Foochow. Styan, Ibis, 1887, p. 219.

Very abundant on the marshy islands at the mouth of the River Min in May and at the beginning of June. Collected about Foochow and at the mouth of the river in September.

One shot at Swatow on 13th May.

38. *ACROCEPHALUS BISTRIGICEPS*, Swinh. [368.]

Foochow. Styan, Ibis, 1887, p. 219.

Obtained in April, on 29th May, in October, and in November.

During the month of May the mangrove marshes near Swatow swarm with this Reed-Warbler. They flit about the bushes, singing most vociferously. The song is loud and very agreeable, but rather short.

39. *LOCUSTELLA CERTHIOLA* (Pall.). [360, part.]

Foochow. Styan, Ibis, 1887, p. 220.

40. *LOCUSTELLA OCHOTENSIS* (Midd.). [360, part.]

Foochow. Styan, Ibis, 1887, p. 220.

This Warbler is extremely abundant at Swatow in May. I found it in the mangrove marshes behind the town; it kept generally on the ground, running actively on the mud under the bushes.

41. *CETTIA CANTURIENS* (Swinh.). [352.]

Foochow. Styan, Ibis, 1887, p. 220.

A winter bird on Foochow and Swatow hills.

42. *CETTIA FORTIPES* (Hodgs.). [383.]

Horeites robustipes, Swinh. (See Styan, Ibis, 1891, p. 341.)

Foochow. Styan, Ibis, 1887, p. 220.

I believe that this bird occurs on the Swatow hills, but I did not shoot any specimens.

43. *CISTICOLA CISTICOLA* (Temm.). [371.]

Foochow. Styan, Ibis, 1887, p. 220.

Also a common winter visitant to Swatow.

44. *SUYA CRINIGERA* (Hodgs.). [375.]

Foochow. Styan, Ibis, 1887, p. 220.

45. *PRINIA INORNATA*, Sykes. [374.]

Foochow. Styan, Ibis, 1887, p. 220.

Less common at Swatow than at Foochow.

Eggs and nests of this and the following species were obtained at Swatow in July.

46. *PRINIA SONITANS*, Swinh. [380.]

Foochow. Styan, Ibis, 1887, p. 221.

Extremely abundant on the Swatow plain. It is not common at Foochow, and is evidently fond of dry sandy ground and the neighbourhood of long grasses and tangled jungle. The call is a sort of mewing sound, and is very loud for so small a bird.

47. *SUTORIA SUTORIA* (Forster). [379.]

Foochow. Styan, Ibis, 1887, p. 221.

Very common at Foochow and Swatow.

48. *ACREDULA CONCINNA* (Gould). [423.]

Foochow. Styan, Ibis, 1887, p. 221.

Abundant on the hills about Foochow. Also occurs on the Swatow hills.

49. *PARUS MINOR*, T. & S. [402.]

Foochow. Styan, Ibis, 1887, p. 221.

Very common at Foochow; much less so at Swatow.

50. *PARUS CINEREUS*, Bonnat. & Vieill. [403 & 404.]

Foochow. Styan, Ibis, 1887, p. 221.

Much less common at Foochow than *P. minor*. I believe that at Swatow this, or at least the intermediate form, *P. commixtus*, Swinh., prevails.

51. *PARUS VENUSTULUS*, Swinh. [407.]

Foochow. La Touche, Ibis, 1887, p. 469.

The specimen noted in my letter was given to Mr. Baun by his boy, who had obtained the bird in the neighbourhood of Foochow.

52. *LEIOTHRIX LUTEUS* (Scop.). [316.]

Foochow. La Touche, Ibis, 1887, p. 469.

53. *ALCIPPE BRUNNEA*, Gould. [319.]

Foochow. Styan, Ibis, 1887, p. 222.

Two shot in bamboo-jungle in the valley of the Yung-fu River.

54. *ALCIPPE MORRISONIA*, Swinh. [321.]

Foochow. Styan, Ibis, 1887, p. 222.

Common on the Foochow and Swatow hills.

Gregarious. Frequents brushwood and wood or bamboo-copses on the hills.

55. *STACHYRIDOPSIS RUFICEPS* (Blyth). [328.]

Foochow. Styan, Ibis, 1887, p. 222.

Occurs in the valleys of Min and Yung-fu rivers. Obtained in winter in the hill-country west of Swatow.

56. *SITTA SINENSIS*, Verr. [140.]

Puch'eng. Styan, Ibis, 1887, p. 221.

I did not find this Nuthatch in the Foochow district, but

it may yet be found to occur in that locality, probably up the river towards Yen-ping-fu.

57. *MOTACILLA LUGENS*, Pal. [433.]

Foochow. Styan, Ibis, 1887, p. 222.

The least common of all the Wagtails noticed by me at Foochow. It passes in spring and autumn. I obtained one as early as the beginning of February, so, although I did not see any in the depth of winter, a few may winter in the district.

It is more common at Swatow, and I have seen it there throughout the cool season.

58. *MOTACILLA LEUCOPSIS*, Gould. [429.]

Foochow. Styan, Ibis, 1887, p. 222.

Very common at Foochow from September to April, and especially so in the hill-country. Specimens were brought to me from Peling in May, and my men told me that the birds were then breeding there.

This Wagtail is abundant at Swatow throughout the cool season.

59. *MOTACILLA OCULARIS*, Swinh. [432.]

Foochow. Styan, Ibis, 1887, p. 223.

Common during the cool season at Foochow and Swatow. It seems to be more of a plain-frequenting bird than *M. leucopsis*.

60. *MOTACILLA MELANOPE*, Pall. [436.]

Foochow. Styan, Ibis, 1887, p. 223.

Common from the end of September to the end of April. Also found at Swatow during the winter.

61. *MOTACILLA FLAVA*, Linn. [437.]

Foochow. Styan, Ibis, 1887, p. 223.

Swatow in May.

62. *MOTACILLA TAIVANA*, Swinh. [438.]

Foochow. Styan, Ibis, 1887, p. 223.

Abundant from the beginning of September to the end of April. Also a winter visitant to Swatow.

63. LIMONIDROMUS INDICUS (Gm.). [441.]

Shot on the Swatow plain on 25th April.

64. ANTHUS MACULATUS, Hodgs. [445.]

Foochow. Styan, Ibis, 1887, p. 223.

Arrives towards the beginning of October and remains till the end of April. It is also a winter visitant to Swatow.

65. ANTHUS JAPONICUS, T. & S.

Foochow. Styan, Ibis, 1887, p. 223.

Winters in the district, and is very common in paddy-fields and marshes.

66. ANTHUS CERVINUS (Pall.). [443.]

Foochow. Styan, Ibis, 1887, p. 223.

A very common winter bird at Foochow and Swatow. Arrives at Foochow in October. By the end of April most of these birds have left. One was shot in Peling on 5th May.

67. ANTHUS GUSTAVI, Swinh. [446.]

Foochow. Styan, Ibis, 1887, p. 223.

One shot at Swatow on 5th May.

68. ANTHUS RICHARDI, Vieill. [447.]

Foochow. Styan, Ibis, 1887, p. 223.

Very common about Foochow and Swatow all through the cool season. It arrives at Foochow at the beginning of October and remains till the end of May.

During June and July I saw on the low hills near the Foochow foreign settlement several large Pipits, but could not obtain any. At a distance they resembled *A. richardi*. Perhaps they may have been the *A. kiangsinsensis*, found in Kiangsi by Père David.

69. IOLE HOLTI (Swinh.). [208.]

Hypsipetes maclellandi, La Touche, Ibis, 1887, p. 469.

Iole holti, Seebohm, P. Z. S. 1891, p. 342.

Obtained in the hills of the Yung-fu and Min valleys, and on the hills west of Swatow.

I procured four examples in Fukien and two in Kwangtung.

70. *HYPSIPETES LEUCOCEPHALUS* (Gm.). [209.]

Foochow. Styan, Ibis, 1887, p. 223.

Shot near Swatow in March.

71. *PYCNONOTUS SINENSIS* (Gm.). [217.]

Foochow. Styan, Ibis, 1887, p. 223.

Abundant and resident at Foochow and Swatow.

72. *PYCNONOTUS ATRICAPILLUS* (Vicill.). [220.]

Fairly common on the hills near Swatow.

73. *PYCNONOTUS JOCOSUS* (Linn.). [221.]

Occurs on the hills west of Swatow and on those beyond Chao-chow-fu. It appeared to me to be less common than *P. atricapillus*, and while I have seen flocks of that species on more or less bare hill-sides, *P. jocosus*, on the contrary, frequented the wooded hills.

74. *HEMIXUS CANIPENNIS*, Seebohm (P. Z. S. 1891, p. 342).

Hemixus castanonotus, Styan, Ibis, 1887, p. 224.

I first came across this new species in the Peling country in February 1885, but, though I often looked out for it afterwards in the same locality, I never met with it again there. Two doubtful-looking Bulbuls that I saw on one occasion near Foochow seemed to be of the same species, but they escaped without allowing a near approach. In February 1887 five examples were obtained by a party of natives who had gone up river to shoot for me. A single flock only was noticed by the collector. It would thus seem to be a rare bird in the Foochow district.

This Bulbul is much more abundant on the hills west and north-west of Swatow, where my shooting-boy and I procured six more examples, and we could have shot as many as we liked.

The specimen described by Mr. Seebohm was one of those obtained in February 1887: it was given by me to Mr. Baum.

Like most of its Chinese cousins, this Bulbul is a hill-species. I have generally found it in the neighbourhood of villages, flying among the large trees and bamboo plantations. It goes about in flocks, and is a very noisy bird. The song is

full and rather pleasant. The call is trisyllabic, and might be rendered thus, "*tě-too-tě*."

75. *SPIZIXUS SEMITORQUES*, Swinh. [223.]

Foochow. Styan, *Ibis*, 1887, p. 224.

Seems to be very abundant some distance up the Min River beyond Foochow.

76. *ORIOLOUS DIFFUSUS*, Sharpe. [203.]

Foochow. Styan, *Ibis*, 1887, p. 224.

Summers at Swatow, arriving towards the beginning of April.

One was brought to Swatow on 23rd January, 1889. I was told that it had been shot on the hills. I happened to be out at the time when the bird was sent to the house, and did not see it, but I have no reason to believe that my informant was mistaken.

77. *BUCHANGA ATRA* (Herm.). [166.]

Foochow. Styan, *Ibis*, 1887, p. 224.

This Drongo seems to be a resident in the Swatow district, as my boy procured one during his winter trip to the interior. I have noticed the birds on the plain during the summer.

78. *BUCHANGA LEUCOGENYS*, Walden. [167.]

Foochow. Styan, *Ibis*, 1887, p. 224.

Not noticed at Swatow.

79. *CHIBIA HOTTENTOTTA* (Linn.). [170.]

Foochow. Styan, *Ibis*, 1887, p. 224.

Shot in April near Kéyong (or Ketiang), west of Swatow.

80. *PERICROCOTUS CANTONENSIS*, Swinh. [165.]

Foochow. Styan, *Ibis*, 1887, p. 225.

I have not met with this species at Swatow.

81. *PERICROCOTUS CINEREUS*, Lafresn. [164.]

Occurs at Swatow in the spring, but is not common. I shot a couple on the 17th April.

Not observed at Foochow.

82. *GRAUCALUS REX-PINETI*, Swinh. [156.]

Foochow. Styan, Ibis, 1887, p. 225.

This must be a very rare species in the Foochow district, as the only specimen I ever saw is that mentioned by Mr. Styan as shot by me on the low hills below Kushan.

83. *LANIUS SCHACH*, Linn. [147.]

Foochow. Styan, Ibis, 1887, p. 225.

Also resident and very common about Swatow.

84. *LANIUS FUSCATUS*, Less. [148.]

Foochow. Styan, Ibis, 1887, p. 225.

I shot two in the winter, 1887-88, on the Swatow plain.

85. *LANIUS LUCIONENSIS*, Linn. [151.]

Foochow. Styan, Ibis, 1887, p. 225.

Very common at Swatow in the spring.

86. *SIPHIA RUBECULOIDES sive STROPHIATA* (Slater, Ibis, 1891, p. 41). [177?]

My shooting-boy, who obtained the two examples mentioned by Mr. Slater, told me that he saw another in the same locality. They probably remain to breed.

87. *ALSEONAX LATIROSTRIS* (Raffl.). [192.]

Foochow. Styan, Ibis, 1887, p. 225.

Abundant at Swatow in spring and autumn.

88. *HEMICHELIDON FERRUGINEA*, Hodgs. [189.]

Foochow. Styan, Ibis, 1887, p. 225.

Evidently a very rare visitant to Foochow, the example noted by Mr. Styan being the only one I ever saw there. At Swatow it is common in the spring during the month of April.

89. *HEMICHELIDON SIBIRICA* (Gm.). [190.]

Muscicapa griseisticta, Styan, Ibis, 1887, p. 225, *nec* Swinh.

Common in the Foochow district during October and November; not noticed there in the spring.

I do not think that this Flycatcher occurs in the neighbourhood of Swatow.

90. *MUSCICAPA GRISEICTICTA* (Swinh.). [191.]

This Flycatcher seems not uncommon at Swatow, where I obtained it in April. My shooting-boy shot a couple in the Taiyang hills, also in April. I never noticed this species about Foochow.

91. *MUSCICAPA ALBICILLA*, Pall. [187.]

One was shot in a pine-wood near Swatow on the 16th November.

92. *POLIOMYIAS LUTEOLA* (Pall.). [187.]

Foochow. Styan, Ibis, 1887, p. 225.

In November 1884 this Flycatcher was extremely abundant, but during the two subsequent years not one was noticed by me. One, however, was shot in November 1886 in the valley of the Yung-fu river.

I did not obtain or notice any at Swatow.

93. *TARSIGER CYANURUS* (Pall.). [335.]

Foochow. Styan, Ibis, 1887, p. 226.

A common winter visitant to Swatow.

94. *XANTHOPYGIA CYANOMELÆNA* (Temm.). [180.]

Foochow. Styan, Ibis, 1887, p. 226.

Shot near Swatow on 30th March and 20th April.

I obtained parti-coloured young males at Foochow in the autumn, the male and female plumage being most beautifully contrasted.

95. *XANTHOPYGIA NARCISSINA* (Temm.). [184.]

Foochow. Styan, Ibis, 1887, p. 226.

I have not noticed this bird at Swatow nor at Foochow in the autumn. The mention of a young male having been shot on 22nd August at Foochow is a mistake of mine; this bird was determined by Mr. Styan as being *X. tricolor* (see no. 96), and he probably thought that I alluded to some other specimen.

96. *XANTHOPYGIA TRICOLOR*, Blyth. [183.]

Foochow. Styan, Ibis, 1887, p. 227.

Not observed at Swatow.

97. *CRYPTOLOPHA AFFINIS* (Hodgs.). [393.]

Two were shot in the Taiyang hills, west of Swatow, by my shooting-boy at the end of February 1889.

98. *TERPSIPHONE INCH* (Gould). [172.]

Foochow. Styan, Ibis, 1887, p. 227.

Shot at Swatow in April and September.

I never observed any white-plumaged males in the south of China, but at Newchwang, in South Manchuria, they were not uncommon in the gardens on the foreign settlement.

99. *TERPSIPHONE PRINCEPS* (Temm.). [173.]

Not uncommon about Swatow in April. I did not notice this species at Foochow.

100. *HIRUNDO GUTTURALIS*, Scop. [193.]

Foochow. Styan, Ibis, 1887, p. 227.

The Swallows leave Foochow about the beginning of October. I have once or twice noticed a stray one in winter.

There are Swallows all the year round near Swatow, but the great majority of the birds leave in the autumn.

101. *HIRUNDO NIPALENSIS*, Hodgs. (See Slater, Ibis, 1891, p. 44.)

Hirundo japonica and *H. substriolata*, Styan, Ibis, 1887, p. 227.

At Foochow I noticed a few red-rumped Swallows in April, and then again on the 30th November and 2nd and 3rd December I saw large flights, which were evidently migrating.

At Swatow these Swallows are common and resident. They nest in the houses of the villages which are scattered over the valleys and plain. In the winter I have shot them on the coast, and I once met with some on the river beyond Chao-chow-fu.

102. *COTYLE RIPARIA* (Linn.). [197.]

Foochow. Styan, Ibis, 1887, p. 227.

103. *DICAËUM IGNIPECTUS* (Hodgs.). [133.]

Foochow. Styan, Ibis, 1887, p. 227.

I presume that this bird goes up to the hills to breed, as I

never saw any at Foochow during the hot season. My boy shot some specimens in winter on the hills west of Swatow.

104. *DICÆUM CRUENTATUM* (Linn.). [131.]

Obtained in winter at Lun-tsung, west of Swatow, and on the hills beyond Chao-chow-fu.

105. *ÆTHOPYGA LATOUCHII*, Slater, Ibis, 1891, p. 43, pl. i.

Chiong-po, the country whence my boy brought me specimens of this new species in January 1888, is several days' journey west of Swatow, and, I believe, about two days' journey (50 miles?) from Kiangsi. Six examples were procured, one of which I have unfortunately lost, and others were seen by the collector.

106. *ZOSTEROPS SIMPLEX*, Swinh. [134.]

Foochow. Styan, Ibis, 1882, p. 227.

I collected at Foochow in January 1887 a good series of the dark birds described by Mr. Styan, all of which were in fresh plumage. The dark grey of the underparts was deeper in some specimens than in others. There were flocks wholly composed of these dark birds. I shot in the hills, about the same time, specimens which were in normal plumage.

Swinhoe's White-eye is also common at Swatow.

107. *PADDA ORYZIVORA* (Linn.). [496.]

Seen at Swatow on 19th September, and shot there in December and January.

108. *MUNIA TOPELA*, Swinh. [494.]

Common and resident at Foochow and Swatow.

This and the following species are very common cage-birds at Foochow. Fortune-tellers train them to tell natives their fortunes by picking up slips of paper on which lucky or unlucky sentences are written—these being spread out on a table, and the bird let out of its tiny prison for the purpose. These unfortunate little "fortune-telling birds," as the natives call them, are carried about in diminutive cages fastened in front of their owner's belt, the man rattling, as he goes along the streets, two pieces of wood to give notice of his approach.

I have seen on the continent of Europe Canaries and other birds put to the same use.

109. *MUNIA ACUTICAUDA*, Hodgs. [495.]

Resident and common at Foochow. I have not noticed it about Swatow, but it may occur in the interior.

110. *PASSER MONTANUS* (Linn.). [490.]

As in other parts of China, this is the common House-Sparrow at Foochow and Swatow.

111. *PASSER RUTILANS*, Temm. [491.]

Resident and common about Foochow, both on the hills and on the plain. It is probably a resident on the Swatow hills, where I obtained it in winter and in April.

112. *CHRYSOMITRIS SPINUS* (Linn.). [485.]

Obtained in February on the hills beyond Chao-chow-fu. Foochow native bird-sellers have told me that it occurs on the hills in that district.

The Siskin is a very common and favourite cage-bird all over Eastern China.

113. *EOPHONA MELANURA* (Gm.). [500.]

Foochow and Swatow in winter and spring. It is very abundant all over the country.

114. *CHLOROSPIZA SINICA* (Linn.). [487.]

A very common resident at Foochow, where it nests on the high pines. Not noticed at Swatow.

The Chinese Golden-wing is also kept as a cage-bird by the Foochow natives, and I have seen it used to tell fortunes.

115. *EMBERIZA SPODOCEPHALA*, Pall. [475.]

Foochow. Styan, Ibis, 1887, p. 228.

Very common at Foochow and Swatow. It arrives at Foochow in October, and remains till the end of April.

116. *EMBERIZA PUSILLA*, Pall. [467.]

Foochow. Styan, Ibis, 1887, p. 228.

Not uncommon on the hills during the winter.

117. *EMBERIZA FUCATA*, Pall. [479.]

Foochow. Styan, Ibis, 1887, p. 228.

Common in the Foochow district throughout the winter

on low-lying ground. Shot near Swatow in April; probably also a winter resident there.

118. *EMBERIZA CIOIDES*, Temm. [473.]

Emberiza ciopsis, Styan, Ibis, 1887, p. 228.

Common in Foochow district from the beginning of September to the late spring. I strongly suspect that this Bunting breeds in the district.

Also obtained near Swatow.

119. *EMBERIZA SULPHURATA*, T. & S. [476.]

Foochow. Styan, Ibis, 1887, p. 228.

A rare species in the district, and observed only in the spring.

120. *EMBERIZA AUREOLA*, Pall. [478.]

Foochow. Styan, Ibis, 1887, p. 228.

Very abundant at Foochow in the paddy-fields during October. I believe that I saw *one* near Swatow in November.

121. *MELOPHUS MELANICTERUS* (Gm.). [479.]

Foochow. Styan, Ibis, 1887, p. 228.

Resident and fairly common on the hills in the Foochow district. In the spring it comes down to the plains to feed on the corn.

At Swatow this Bunting is found both on the plain and on the hills, and seems to be common enough.

122. *ALAUDA ARVENSIS*, Linn. [451.]

Found at Foochow throughout the winter from the month of October.

123. *ALAUDA CÆLIVOX*, Swinh. [453.]

This Lark may be distinguished from *A. arvensis*—first, by its smaller size; secondly, by its rather long and strong bill; thirdly, by its long and very pale tarsi. The alarm-note is also very different.

It is resident and common in the Foochow district, breeding on the marshy islands at the mouth of the River Min, and in winter it is found on the plains all over the country.

The Larks which occur near Swatow are all probably of this

species. They are in great request among the natives as cage-birds, numbers being caught and sold alive for that purpose.

Two eggs found at Swatow in June measure 22 and 21.5 mm.

124. *SPODIOPSAR CINERACEUS* (Temm.). [519.]

Foochow and Swatow in winter; very abundant.

125. *SPODIOPSAR SERICEUS* (Gm.). [520.]

Foochow and Swatow in winter. Very common at Swatow in the mangroves; rare near Foochow, but more abundant on the coast near the mouth of the River Min.

126. *STURNIA SINENSIS* (Gm.). [522.]

Comes to Foochow and Swatow in the spring and nests under the roofs of houses. I once noticed a flock in the mangroves near Swatow at the beginning of February.

127. *ACRIDOTHERES CRISTATELLUS* (Linn.). [524.]

Very abundant at Foochow and Swatow.

This Mynah, the *Huamei*, and the Mongolian Lark are the favourite cage-birds in China. I had a Mynah for nearly four years, which, I think, was the most amusing and intelligent tame bird I ever saw.

128. *GRACUPICA NIGRICOLLIS* (Payk.). [523.]

Abundant and resident at Foochow and Swatow.

129. *CORVUS LEVAILLANTI*, Linn. [528.]

Corvus sinensis, Swinh. P. Z. S. 1871, p. 383.

Resident at Foochow and Swatow. More abundant in the latter district.

130. *CORVUS CORONE*, Linn. [529.]

Occurs at Foochow, but is scarce. I obtained specimens in April and during the winter. This is, I believe, the only place in China proper where specimens of the Carrion Crow of Europe have been obtained. Swinhoe procured specimens on islands near Hainan. Père David says that in his journeys to the western frontier of China he saw Crows which seemed to him to belong to the European species, but he could not procure any specimens. On the other hand, it appears to

occur throughout Japan (see Blakiston and Pryer, "Birds of Japan," Trans. As. Soc. Japan, 1882).

It has probably been driven out of the parts of China where the common Chinese Crow is abundant. In the Foochow district, where *C. levaillanti* is not plentiful, it has a better chance of existence.

131. *CORVUS TORQUATUS*, Less. [530.]

Common and resident at Foochow and Swatow.

132. *CORVUS PASTINATOR*, Gould. [531.]

Occurs near Foochow, but seems very scarce. A couple of specimens were shot for me by natives in November and on 22nd February. I never noticed any myself.

N.B.—My shooting-boy told me, on his return from his expedition to Western Kwangtung, that he had seen two birds, which, from his description, appear to have been *Choughs*.

133. *PICA CAUDATA*, Linn. [587.]

Common at Foochow and Swatow. I noticed them building at Lieu-chiang hsien in December.

134. *GARRULUS SINENSIS*, Gould. [544.]

Very common on the hills near Foochow. Also obtained on the Swatow hills.

135. *DENDROCITTA SINENSIS* (Lath.). [541.]

Common on Foochow and Swatow hills.

136. *UROCISSA SINENSIS* (Linn.). [539.]

Common at Foochow and Swatow.

[To be continued.]

XXXVI.—On a Collection of Birds from Mount Dulit, in North-western Borneo. By R. BOWDLER SHARPE, LL.D., F.L.S., &c.

(Plates X., XI.)

THE very interesting collections made by Mr. John Whitehead on Mount Kina Balu, and described by me in the pages of

this Journal, will have prepared the minds of ornithologists for further discoveries in other high mountains of Borneo. That veteran traveller, Mr. A. H. Everett, has already proved, by the small collection made by him on Mount Pen-risen, that the species of birds procured by Mr. Whitehead on Kina Balu are not all peculiar to that mountain, and now we know that some of them are to be met with in other localities. As will be seen by the present paper, several of the novelties obtained by Mr. Whitehead are also found on Mount Dulit, and for this interesting disclosure science is indebted to the enterprise of a young Englishman, Mr. Charles Hose, who is already known for his collecting work on the Baram River, where he discovered the remarkable new species of *Semnopithecus* which bears his name. The exact position of Mount Dulit does not seem to be marked in any Atlas to which I have had access, but Mr. Hose speaks of it as being situated at the head of the Baram River, and Mr. Whitehead tells me that the chain of which Dulit is one of the peaks was visible to him from the heights of Kina Balu. It is not a little remarkable that some of the Kina-Balu species have recently been obtained by Signor Modigliani in high Sumatra (cf. Salvadori, Ann. Mus. Civic. Genov. (2) xii. pp. 40-78). To this paper I refer in the following pages, and I have also quoted Mr. Everett's 'List of Bornean Birds,' and my own essays on the avifauna of Kina Balu. For the sake of convenience of comparison I have followed the order of Mr. Everett's list of Bornean Birds (Journ. Straits Branch Asiat. Soc. 1889, p. 91).

Fam. TURDIDÆ.

1. *GEOCICHLA EVERETTI*.

Geocichla everetti, Sharpe, *antea*, p. 323.

No. 22. ♀. Dulit, 5000 feet, October.

The specimen is unfortunately not quite adult, but nearly so, and I have Mr. Seeböhm's authority for saying that it undoubtedly belongs to a species new to science. It seems to have no very near ally, for though it has the underparts somewhat resembling those of *G. cyanonota*, the brown colour

of the upper surface, the long bill, and the broad black moustache sufficiently distinguish it from all its relations.

2. *MYIOPHONEUS BORNEENSIS*.

Myiophoneus borneensis, Slater; Sharpe, Ibis, 1889, p. 269; Everett, Journ. Straits Branch Asiat. Soc. 1889, p. 98.

No. 41. ♂. Dulit, 5000 feet, October 14.

Discovered first on the mountains of Sarawak, and afterwards obtained on Kina Balu by Mr. Whitehead.

3. *ERYTHACUS CYANEUS*.

Erythacus cyaneus (Pall.); Sharpe, t. c. p. 268; Everett, t. c. p. 98.

Fam. TIMELIIDÆ.

4. *GARRULAX SCHISTOCHLAMYS*.

Garrulax schistochlamys, Sharpe, t. c. p. 411; Everett, t. c. p. 103.

No. 42. ♂ ♀. Dulit, 5000 feet, October.

Iris red. Identical with typical specimens from Kina Balu.

5. *RHINOCICHLA TREACHERI*.

Rhinocichla treacheri, Sharpe, t. c. p. 412; Everett, t. c. p. 103.

No. 47. ♂ ♀ ad. Dulit, 4000 feet, October.

6. *ALLOCOTOPS CALVUS*.

Allocotops calvus, Sharpe, t. c. p. 413, pl. xiii.; Everett, t. c. p. 104.

No. 1. ♂ ♀. Dulit, 5000 feet, October.

Compared with specimens from Kina Balu, and found to be identical.

7. *STACHYRIS BORNEENSIS*.

Stachyris borneensis, Sharpe, t. c. p. 413; Everett, t. c. p. 105.

No. 49. ♂ ♀. Dulit, 4000-5000 feet, October.

8. *ALCIPPE CINEREA*.

Alcippe cinerea, Blyth; Sharpe, t. c. p. 283; Everett, t. c. p. 106.

No. 36. ♂. Dulit, 3500 feet, September 29.

9. *Turdinus canicapillus*.

Turdinus canicapillus, Sharpe, t. c. p. 415; Everett, t. c. p. 108.

No. 55. ♂. Dulit, 5000 feet, October.

10. *Turdinulus exsul*.

Turdinulus exsul, Sharpe, t. c. p. 418; Everett, t. c. p. 111.

No. 50. ♀. Dulit, 3000 feet, September 30.

This species was discovered on Kina Balu by Mr. Whitehead, and was afterwards met with by Mr. Everett on Penrisen.

11. *Anuropsis malaccensis*.

Anuropsis malaccensis (Hartl.); Sharpe, t. c. p. 418; Everett, t. c. p. 110.

No. 29. ♂. Dulit, 2000 feet, September 26.

Fam. PYCNONOTIDÆ.

12. *Hemixus connectens*.

Hemixus connectens, Sharpe, t. c. p. 273; Everett, t. c. p. 111.

Nos. 33, 34. ♂. Dulit, 3000 feet, October.

Identical with specimens from Kina Balu.

13. *Criniger ruficrissus*.

Criniger ruficrissus, Sharpe, t. c. p. 275; Everett, t. c. p. 113.

No. 32. ♂ ♀. Dulit, 3000-4000 feet, September.

14. *Rubigula montis*.

Rubigula montis, Sharpe, t. c. p. 276; Everett, t. c. p. 115.

No. 37. ♂ ♀. Dulit, 4000-5000 feet.

15. *Chloropsis kinabaluensis*.

Chloropsis kinabaluensis, Sharpe, t. c. p. 272, pl. lx.; Everett, t. c. p. 117.

Three specimens, obtained at a height of 3500 feet, October.

16. *Irena crinigera*.

Irena crinigera, Sharpe, t. c. p. 277; Everett, t. c. p. 117.

No. 43. ♂ juv. Dulit, 2000 feet, October.

Fam. LANTIDÆ.

17. *HEMIPUS PICATUS*.

Hemipus picatus, Sykes; Sharpe, t. c. p. 189; Everett, t. c. p. 123.

No. 25. ♂. Dulit, 4000 feet, September.

First met with in Borneo by Mr. Whitehead.

Fam. DICRURIDÆ.

18. *CHIBIA BORNEENSIS*.

Chibia borneensis, Sharpe, t. c. p. 186; Everett, t. c. p. 123.

No. 44. ♂ ♀. Dulit, 4000 feet, October 9.

No. 44. ♂ ♀. Dulit, 5000 feet, October 15.

Found by Mr. Whitehead on Kina Balu up to 5000 feet.

Fam. CAMPOPHAGIDÆ.

19. *ARTAMIDES NORMANI*.

Artamides normani, Sharpe, t. c. p. 190; Everett, t. c. p. 124.

No. 3. ♂ ♀ ad. et juv. Dulit, 5000 feet, October.

Identical with Kina-Balu specimens. Mr. Whitehead found it on that mountain at elevations between 3000 and 4000 feet.

20. *PERICROCOTUS MONTANUS*.

Pericrocotus montanus, Salvad.; Sharpe, t. c. p. 193; Everett, t. c. p. 125; Salvad. Ann. Mus. Civic. Genov. (2) xii. p. 54 (1891).

No. 24. ♂. Dulit, 5000 feet, October.

This is a very curious specimen, not quite adult, as some yellow markings at the base of the secondaries testify. The lower throat is red, not so brilliant as the breast, and only the upper throat is black.

At first sight this specimen would appear to represent a new species of *Pericrocotus*, but I find that *P. montanus* goes through so many variations in the colour of the throat that it is difficult to account for them on the score of age. Mr. Whitehead has kindly brought me several of his Kina-Balu birds to compare with specimens of *P. montanus* from high Sumatra, for the loan of which I am indebted to

Count Salvadori. They are undoubtedly identical, and two males which the latter gentleman sent me have the throat black and dark slate-colour respectively, while the third has a slaty-grey throat, with the lower part mixed with red. I find that Count Salvadori is quite right in uniting *P. wrayi* with *P. montanus*, and it is possible, as he suggests, that *P. cinereigula* may likewise have to be added as a synonym, but I cannot make up my mind to adopt this course at present. Mr. Whitehead has allowed me to re-examine the type, and I find that my remarks on it are still justified, but neither he nor I have now much confidence in the species.

Fam. MUSCICAPIDÆ.

21. RHINOMYIAS RUFICRISSA.

Rhinomyias ruficrissa, Sharpe, t. c. p. 200; Everett, t. c. p. 131.

No. 35. ♂. Dulit, 3500 feet, October.

No. 35. ♀. Dulit, 5000 feet, October.

22. CULICICAPA CEYLONENSIS.

Culicicapa ceylonensis (Sw.); Sharpe, t. c. p. 202; Everett, t. c. p. 131.

No. 40. ♂ ♀ ad. Dulit, 3000 feet, September 22 and October 9.

23. SIPHIA BECCARIANA.

Siphia beccariana (Salvad.); Sharpe, Cat. B. Brit. Mus. iv. p. 452; Everett, t. c. p. 133.

No. 33. ♂. Dulit, 3000 feet, October.

This bird was not procured by Mr. Whitehead on Kina Balu, but Mr. Everett has recently obtained a specimen at the foot of Song Mountain, in the Baram district.

Fam. NECTARINIIDÆ.

24. ÆTHOPYGA TEMMINCKI.

Æthopyga temmincki (S. Müll.); Sharpe, Ibis, 1889, p. 421; Everett, t. c. p. 135.

No. 51. ♂ ♀. Dulit, 3500-4700 feet, September.

25. ARACHNOTHERA JULIÆ.

Arachnothera juliæ, Sharpe, t. c. p. 424; Everett, t. c. p. 138.

No. 38. ♂ ♀. Dulit, 5000 feet, October.

Agrees exactly with Kina-Balu examples.

26. ARACHNOTHERA LONGIROSTRIS.

Arachnothera longirostris (Lath.); Sharpe, t. c. p. 426; Everett, t. c. p. 137.

No. 39. ♂. Dulit, 3000 feet, October.

Fam. DICEIDÆ.

27. PRIONOCHILUS MACULATUS.

Prionochilus maculatus (T.); Everett, t. c. p. 140.

No. 20. ♀ ad. Dulit, 4000 feet, October.

Not found by Mr. Whitehead.

28. PRIONOCHILUS XANTHOPYGIUS.

Prionochilus xanthopygius, Salvad.; Sharpe, t. c. p. 430; Everett, t. c. p. 140.

No. 52. ♂. Dulit, 3500 feet, September 24.

Mr. Whitehead procured specimens of this species on the Lawas River, but did not meet with it on Kina Balu.

Fam. ZOSTEROPIDÆ.

29. ZOSTEROPS SQUAMIFRONS.

Zosterops squamifrons, Sharpe, *anteà*, p. 323.

No. 53. ♂. Dulit, 3500 feet, September 20.

I took much trouble to determine the proper place to put this little bird, and after comparing it with many forms, especially the genera of *Liotrichinæ*, I came to the conclusion that it must be an aberrant kind of *Zosterops*, with which genus it agrees in the shape of the bill and wing. The only species in the genus which it at all resembles is *Z. javanica*, but the latter is a larger bird, much more yellow above, and bright yellow below.

Fam. CORVIDÆ.

30. DENDROCITTA CINERASCENS.

Dendrocitta cinerascens, Sharpe, t. c. p. 81; Everett, t. c. p. 146.

No. 45. ♂ ♀. Dulit, 3000–5000 feet, October.

Found on Kina Balu by Mr. Whitehead from 1000–9000 feet.

31. CISSA JEFFERYI.

Cissa jefferyi, Sharpe, t. c. p. 84, pl. iv.; Everett, t. c. p. 146.

No. 2. ♂. Dulit, 5000 feet, October.

Apparently quite similar to examples from Kina Balu. Mr. Whitehead met with it on the latter mountain at altitudes of 3000–8000 feet.

Fam. PITTIDÆ.

32. PITTA ARCUATA.

Pitta arcuata, Gould; Sharpe, t. c. p. 441; Everett, t. c. p. 148.

No. 20. ♂ ♀ ad. Dulit, 4000 feet, October.

No. 21. ♂ jr. Dulit, 4000 feet, October.

The young bird is dusky above, with a slight olive tinge, with a little greenish blue on the scapulars and wings, and also along the sides of the hinder crown; the sides of the face dusky brown; throat pale ochreous, mottled with greyish bases to the feathers; breast dusky brown, slightly washed with ochreous brown; sides of body ochreous, with a rosy tinge, inclining to scarlet on the lower flanks, and a few bright scarlet feathers appearing on the sides of the breast; under tail-coverts scarlet; lower abdomen pale rosy.

33. PITTA SCHWANERI.

Pitta schwaneri, Temm.; Sharpe, t. c. p. 442; Everett, t. c. p. 149.

No. 23. Dulit, 4000 feet, October.

Fam. EURYLÆMIDÆ.

34. CALYPTOMENA HOSII. (Plate X.)

Calyptomena hosii, Sharpe, Ann. & Mag. Nat. Hist. (6) ix. p. 249 (1892).

Nos. 15, 16. ♂, ♀. Dulit, 3000 feet, September and October.

This beautiful new species, which, by the kindness of the Editor, I am allowed to have figured, is the most interesting of Mr. Hose's discoveries on Mount Dulit. It is larger than *C. viridis*, but is not so big as *C. whiteheadi*, and is, of course, distinguished from both by the blue breast. The remarkable blue upper tail-coverts appear to be hidden by the thick-set plumage of the rump, and they might easily escape observation altogether. In fact it was only when I came to make a careful examination of the specimens that I discovered them at all.

Mr. Everett likewise obtained a female of this species in October at the foot of Song Mountain, in the Baram district, a few days after Mr. Hose had met with it on Mount Dulit. His specimen was a female, but appears to be a little older than the one procured by Mr. Hose. The black spots on the wing-coverts are more marked, and the blue of the breast is brighter, though not approaching the rich cobalt-blue of the male.

I cannot allow this opportunity to pass without acknowledging the rare generosity with which my old friend Mr. Everett (who knows Bornean birds as well as anyone in the world, and who was perfectly well aware that the present species was quite new) allowed the specimens to come unnamed to England, in order that I might have the privilege of describing this splendid novelty.

35. EURYLÆMUS OCHROMELAS.

Eurylæmus ochromelas, Horsf.; Sharpe, Ibis, 1889, p. 439; Everett, t. c. p. 150.

No. 14. ♀. Dulit, 2500 feet.



Fam. PICIDÆ.

36. MIGLYPTES TUKKI.

Miglyptes tukki (Less.) ; Sharpe, Ibis, 1890, p. 9 ; Everett, t. c. p. 158.

No. 18. ♀. Dulit, 3000 feet.

Fam. ALCEDINIDÆ.

37. HALCYON CONCRETA.

Halcyon concreta (Temm.) ; Sharpe, Ibis, 1890, p. 21 ; Everett, t. c. p. 161.

No. 19. ♀. Dulit, 4000 feet.

Fam. CAPRIMULGIDÆ.

38. BATRACHOSTOMUS HARTERTI.

Batrachostomus harterti, Sharpe, *antea*, p. 323.

No. 17. ♂. Dulit, 2000 feet, October.

I have already (*l. c.*) given the characters of this species, which I have named after my friend Mr. Hartert, who has recently performed the arduous task of describing the Caprimulgidæ in the 'Catalogue of Birds.' The bird has been figured in that work (vol. xvi. pl. 14).

39. BATRACHOSTOMUS AFFINIS.

Batrachostomus affinis, Blyth ; Hartert, Cat. B. Brit. Mus. xvi. p. 643 (1892).

No. 56. ♂. Marudi, in the Baram district, in August.

Mr. Hartert has identified this specimen for me. The species is new to Borneo.

Fam. TROGONIDÆ.

40. HARPACTES WHITEHEADI.

Harpactes whiteheadi, Sharpe, Ibis, 1890, p. 2 ; Everett, t. c. p. 166.

No. 5. ♂ ♀. Dulit, 5000 feet, October.

A pair of birds not quite adult, but evidently of the same species as the Kina-Balu bird.

41. *HARPACTES DULITENSIS.*

Harpactes dulitensis, Ogilvie Grant, Cat. B. Brit. Mus. xvii. p. 501, pl. 17.

No. 6. ♂. Dulit, 4000 feet.

A pair of birds was sent by Mr. Hose, and they have been described by Mr. Ogilvie Grant, who has been recently working out the Trogons. Mr. Whitehead has very kindly shown me again some of the specimens which he procured on Kina Balu, and which were named by me *H. oreskios*. This identification turns out to have been quite correct, and it is interesting to find a distinct species on Mount Dulit, when so much of its avifauna is the same as that of Kina Balu.

42. *HARPACTES VIDUA.*

Harpactes vidua, Ogilvie Grant, Cat. B. Brit. Mus. xvii. p. 501.

Mr. Whitehead obtained on Kina Balu a similar bird to the one described by Mr. Ogilvie Grant, as will be seen by his note (*Ibis*, 1890, p. 4). Although I was unable at the time to identify the species, I did not like to describe it as new on the strength of a single female, and that apparently an immature one.

Fam. CAPITONIDÆ.

43. *CHOTORHEA CHRYSOPSIS.*

Megalæma chrysopsis, Goff. ; Sharpe, *Ibis*, 1890, p. 4 ; Everett, t. c. p. 167.

Chotorhea chrysopsis, Shelley, Cat. B. Brit. Mus. xix. p. 59.

No. 9. ♂ juv. Dulit, 4000 feet, October.

44. *CYANOPS MYSTACOPHANUS.*

Megalæma mystacophanus (Temm.) ; Sharpe, *Ibis*, 1890, p. 4 ; Everett, t. c. p. 167.

No. 12. ♂ ad., ♀ juv. Dulit, 2000 feet, September 29.

45. *CYANOPS MONTICOLA.*

Cyanops monticola, Sharpe, *Ibis*, 1890, p. 5 ; Everett, t. c. p. 68.

Nos. 8, 10. Dulit, 4000 feet, September.



The young bird differs from the adult in being everywhere duller, with the bright colours of the head less developed, and the red patch on the nape scarcely visible. The red spot on the sides of the lower throat is also nearly obsolete.

Although this species bears such a strong resemblance to the young of *M. mystacophanes*, the shape of the bill is quite different, being both shorter and stouter and having a more acute chin-angle.

46. MESOBUCCO EXIMIUS. (Plate XI.)

Mesobucco eximius, Sharpe, *antea*, p. 324.

No. 13. Dulit, 3500 feet, September 29.

At first sight this Barbet resembles the species of the genus *Xantholaema*. It is coloured after the fashion of the members of that genus, but it is distinguished from all of them by its black throat, while the form of bill is that of *M. duvauceli*. The figure will show how distinct the species really is.

Fam. CUCULIDÆ.

47. ZANCLOSTOMUS JAVANICUS.

Zanclostomus javanicus (Horsf.): Sharpe, *Ibis*, 1890, p. 13; Everett, t. c. p. 175.

No. 46. ♀. Dulit, 3000 feet, September.

Fam. STRIGIDÆ.

48. HETEROSCOPS LUCIÆ.

Heteroscops luciae, Sharpe, *Ibis*, 1889, p. 77, pl. iii.; Everett, t. c. p. 178.

No. 26. ♀. Dulit, 5000 feet, October 10. Iris yellow.

This interesting species was discovered by Mr. Whitehead on Kina Balu.

Fam. COLUMBIDÆ.

49. CARPOPHAGA BADIA.

Carpophaga badia (Raffles); Sharpe, *Ibis*, 1890, p. 35; Everett, t. c. p. 195.

In Mr. Hose's first collection from Mount Dulit.

50. *CHALCOPHAPS INDICA*.

Chalcophaps indica (L.) ; Sharpe, Ibis, 1890, p. 136 ;
Everett, t. c. p. 194.

No. 48. Juv. Dulit, 4500 feet, October.

Fam. PHASIANIDÆ.

51. *LOBIOPHAPS BULWERI*.

Lobiophaps bulweri, Sharpe ; Everett, t. c. p. 198.

Several specimens of this fine Pheasant from Mount Dulit.
Mr. Everett has also sent the egg, which is of a pale stone
colour, and measures, axis 1·5 inch, diam. 1·6.

XXXVII.—*On the Rudimentary Hallux of the Kittiwake*
(*Rissa tridactyla*). By W. EAGLE CLARKE, F.L.S.

THE literature relating to our knowledge of the rudimentary hallux of the so-called three-toed birds is, I believe, not of a very extensive nature. Nor has the hind toe of the species under consideration received much attention. These facts must be my excuse for placing the following slight notes on record.

It is scarcely necessary to remark that the genus *Rissa* was founded by Leach mainly upon the rudimentary nature, or absence, of the hallux. This toe appears to be a variable quantity in the two species belonging to the genus, and is most developed in the race of the common species which inhabits the Pacific Region. This race has, mainly or entirely on this account, been promoted to subspecific rank by the American ornithologists under the name of *Rissa tridactyla pollicaris*. Even in this race, however, the development of the hallux would appear to be a variable character.

Regarding the status and appearance of the hind toe of the Common Kittiwake (*Rissa tridactyla*) little need be said here, since the published accounts of various ornithologists are so well known and so readily accessible.

The summer cruise, in 1891, of the yacht 'Shiantelle,' thanks to the kindness of my friend Mr. Harvie-Brown, enabled me to obtain a series of embryos in various stages of

development, from the great Kittiwake nurseries at the Shiant Islands. These embryonic specimens, and an almost full-fledged nestling and a mature bird, both in the flesh, kindly obtained for me by Mr. F. P. Johnson, together with a series of skins from the collections of Messrs. Feilden and Harvie-Brown, Mr. William Evans, and the Museum of Science and Art, Edinburgh, form the material upon which the following notes are based. From this material I selected certain specimens exhibiting as many stages of development as possible, and from these a series of preparations were made for microscopical examination.

An examination of the skins of the immature and adult specimens has resulted in my finding that in the great majority the hallux is present in a rudimentary state, usually from .10 to .13 inch in length; and in the minority of these specimens as a mere tubercle. I have only, however, noted the presence of a nail on the hallux in a single adult bird—an interesting specimen from Spitzbergen, obtained at Hecla Bay on the 14th of July, 1827, one of a small series of birds in the Edinburgh Museum obtained by Captain Parry in his celebrated attempt to reach the North Pole. In this bird the nail is very minute, is situated about the centre of the dorsal surface, and does not reach nearly to the end of the digit. Two immature specimens also had nails. One of these, six months old, had the nail extending almost to the apex of the hallux in the form of a thin narrow plate or scale.

The following notes refer to the microscopical examination of the embryos of various ages, and of the nestling and adult already alluded to as received in the flesh.

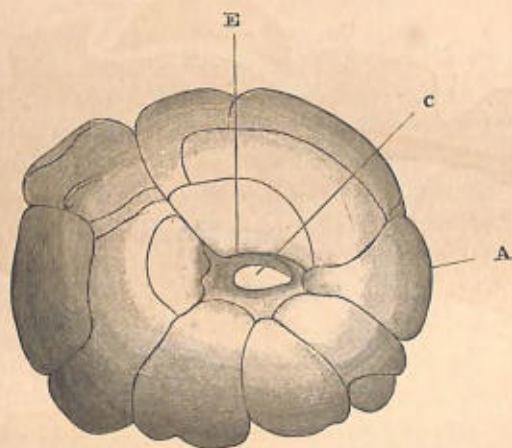
In three early embryos of twelve days and under, of which both transverse and longitudinal sections of the foot were prepared, there was not a trace of a nail to be found on *any* of the toes, or even a thickening of the epidermis in the future nail-area. The epithelium presented an unbroken surface, owing to the absence of scutes.

An embryo estimated to be eighteen days old had the nails on the second, third, and fourth digits well formed and kera-

tinized. There was not, however, a trace of a nail to be found on the hallux, or even a thickening of the epidermis in the nail region, in either series of transverse and longitudinal sections prepared from this specimen.

The next specimen was a ripe embryo estimated to be twenty-five days old. Before sections were prepared the hallux of this specimen was examined under a magnifying-power of 50 diameters, which showed this toe to be a mere papilla, clothed in scutellate epidermis, and furnished with a nail placed almost centrally upon the dorsal aspect, being at some little distance from the apex of the digit and from its lateral margins. This nail was small in size and oblong-oval, like a patella in shape (see fig. 1), its longest diameter

Fig. 1.



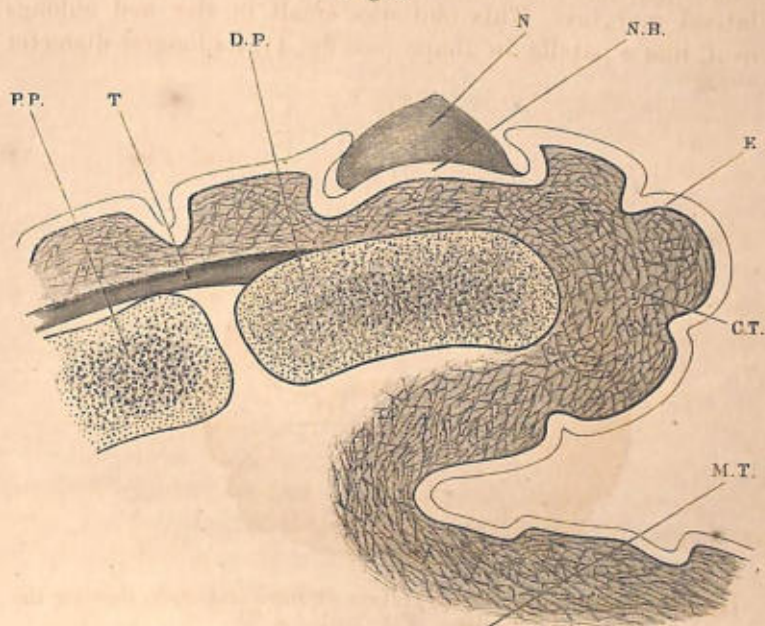
Dorsal aspect of hallux of ripe embryo of *Rissa tridactyla*, showing the position of the nail. $\times 50$.

E, edge of nail; C, centrum of nail; A, apex of hallux.

corresponding with that of the toe. The sections cut show that the nail is embedded at its edge under a circular nail-fold, towards which the nail gradually tapers down from its somewhat raised, thickened, central portion. In structure it resembles an ordinary nail, and tends to divide into lamellæ, or "flake," when cut in a microtome. In position the nail

occupies a small area, and is placed two or three times its own length from the tip of the digit. It has not the appearance of a claw, for it does not project beyond the general surface, only presenting a slightly raised central portion, which represents the tip of the nail. This nail is very thin when compared with the corresponding structures on the other digits of the specimen. The possession by the digit of a *flexor longus hallucis* is indicated by the presence of the tendon shown in fig. 2, which gives details of the hallux of this specimen as seen in section.

Fig. 2.



Section (diagrammatic) of hallux of ripe embryo of *Rissa tridactyla*. $\times 70$.

N, nail; N.B., nail-bed; P.P., proximal phalanx; D.P., distal phalanx; T, tendon; M.T., tarso-metatarsus; E, epidermis; C.T., connective tissue.

The phalanges of all these embryonic specimens were, of course, more or less cartilaginous, but it is notable that when compared with those of the other digits, of the same specimen, the phalanges of the hallux were uniformly less

advanced than those of the second, third, and fourth toes. In addition to the embryos alluded to I have others, amounting in all to about twenty specimens, and in the whole of these a rudimentary hallux was present.

In the nestling, which was well-feathered and would soon have left the nest, a nail was found on the hind toe. When sectioned this nail proved to be very hard, but similar in shape and position to that on the ripe embryo. It differed only in being larger and thicker, though very much thinner than the claws on the other toes.

In the adult, in which the hallux was well developed, the epithelial scutes were found to be very thick and had become considerably keratinized. No trace of a nail was found, not even remains or aborted tissue, in the section made.

The following is a summary of the main facts ascertained from the examination of this limited supply of material :—

All the embryo Kittiwakes, about twenty in number, possessed a hallux.

The great majority of the immature and adult specimens examined also possessed a rudimentary hallux, *i. e.* something more than a mere tubercle.

No nail, or traces of it, were found on the hallux or other digits of embryonic specimens estimated to be twelve days old, or less.

An embryo at eighteen days had nails well developed and keratinized on the second, third, and fourth digits, but possessed no signs of a nail on the hallux.

The youngest specimen with a nail on the hallux was a ripe embryo.

A well-fledged nestling and two specimens about six months old possessed small scale-like nails on the hallux.

In one case only was a nail—a very small one—found in an adult specimen.

The nail is imperfect in form and quite useless, and is thin in comparison with the other claws on the same bird.

Lastly, we have the ascertained position of the nail, when present. The position of the nail is, I believe, unusual

among other genera of the Larinæ, and is perhaps not a little remarkable in its relation to the phalanx. I found this almost central position occupied by the nail in all the specimens examined. In one the nail was longer than in the others, and consequently extended nearly to the apex of the digit.

A question implying important alternatives remains unanswered, as the result of the incompleteness of our knowledge relating to the nail on the hallux of this species, namely—(1) Is the possession of this nail an individual peculiarity, or (2) do all Kittiwakes possess such a nail during some period of their early life?

The former is *most probably* the case. The latter is, perhaps, *possible*, but its acceptance implies—from the ascertained facts—that this nail is developed very late in embryonic life, and that it disappears early in most cases.

A pleasant duty now remains, namely, to express my obligations and thanks. To my friend Dr. Carlier, of the Physiological Department of the University of Edinburgh, I am indebted for much assistance, which it affords me great pleasure to acknowledge. My thanks are also due and hereby accorded to the friends severally named in these notes, and to Mr. Herbert Goodchild, of Edinburgh, who kindly prepared the finished drawings from which the figures have been reproduced.

XXXVIII.—*Notices of recent Ornithological Publications.*

[Continued from p. 345.]

66. *Berlepsch on the Birds of Curaçao, W.I.*

[Die Vögel der Insel Curaçao, nach einer von Herrn cand. theol. Ernst Peters daselbst angelegten Sammlung. J. f. O. January 1892.]

Insular faunas, however small their area, are, as Darwin and Wallace teach us, always worthy of careful examination; and we are therefore deeply grateful to Graf v. Berlepsch for this excellent essay on what is known of the birds of Curaçao and its satellites, Buen Ayre and Oruba. The immediate occasion of the present paper was the receipt of a collection of

37 skins, representing 18 species, made by Herr E. Peters of Hamburg during a short visit to Curaçao in August and September 1890. But our esteemed friend takes the opportunity of building upon this foundation an exhaustive account of all that is yet known of the ornithology of the Curaçao group of islands. He shows that their avifauna is most nearly related to that of the neighbouring coast of South America, the greater number of the 19 species certainly known to occur there being of undoubtedly South-American origin. On the other hand, there is also a slight Antillean element in the avifauna, four species—namely, *Dendræca ruficularis*, *Cœreba* (intell. *Certhiola*) *uropygialis*, sp. nov., *Elainæa martinica*, and *Tinnunculus sparverius brevipennis*, subsp. nov.—having decided West-Indian affinities. Herr Peters's journal of his excursion and interesting field-notes make a good appendix to Graf v. Berlepsch's treatise.

67. *Bonvalot's Journey through Tibet.*

[Gabriel Bonvalot.—De Paris au Tonkin à travers le Tibet inconnu. Ouvrage contenant une carte en couleurs et cent huit illustrations gravées d'après les photographies prises par le Prince Henri d'Orléans. Royal 8vo. Paris: 1892. Hachette et Cie.]

The appendix to this work contains lists of the birds of Eastern Turkestan and Tibet, obtained during the journey. Amongst them are the names of the following new species and subspecies from Tibet, but without descriptions:—*Zosterops mussoti*; *Pomatorhinus gravivox*, var. *dedekensi*; *P. gravivox*, var. *armandi*; *Babax lanceolatus*, var. *bonvaloti*; *Trochalopteron ellioti*, var. *bonvaloti*; *T. henrici*; *Leptopæcile henrici*; *Acredula bonvaloti*; *Montifringilla bonvaloti*; *Uragus henrici*.

68. *Delaware Valley Ornithologists' 'Proceedings.'*

[Abstract of the Proceedings of the Delaware Valley Ornithological Club of Philadelphia for the years 1890 and 1891. 8vo. Philadelphia: 1892.]

The ornithologists of the Delaware Valley of Pennsylvania have set a good example by forming themselves into a club,

which has held monthly meetings for the past two years, and has apparently enjoyed many profitable discussions. The present pamphlet gives an abstract of their "proceedings," many of the papers alluded to having been published in various journals. They relate exclusively to North-American birds, and especially to observations on migration.

69. *Deyrolle on the Birds of France.*

[Histoire Naturelle de la France. 3me Partie, Oiseaux. Par Emile Deyrolle. Paris, 8vo (undated).]

This is one of a series of cheap works for beginners published by the well-known dealer in objects of natural history. The arrangement is antiquated, to say the least of it; for instance, the "groupe des Merles" is made up of the Dipper, Rose-coloured Starling, Golden Oriole, the five common species of Thrush, the two Rock-Thrushes, and the Starling, in the above-given sequence. The Nightjar, Swallows, and Swifts form the "groupe des Becs-fendus;" while the "famille des Palmipèdes" is the most heterogeneous that can be imagined. There are 132 woodcuts, of which some appear to be original, such as the representation of the Fulmar (for the Stormy Petrel); and 27 very fair coloured plates of the heads of most of the species. The letterpress does not contain so much erroneous information respecting geographical distribution as might have been expected.

70. *Distant's 'Naturalist in the Transvaal.'*

[A Naturalist in the Transvaal. By W. L. Distant. 8vo. London: 1892. R. H. Porter.]

In this volume we have recorded the impressions of a naturalist who, during a year's sojourn in the Transvaal for business purposes, recreated himself by collecting zoological specimens and making observations. The Transvaal has, as we all know, been flooded by a rush of gold-seekers, and is being rapidly "Europeanized." The native mammals, especially those of larger dimensions, are gradually disappearing; but there is still much to be done in entomology, in which

Mr. Distant is a well-known worker, and in the birds, of which frequent mention is made. Mr. Distant succeeded in procuring examples of nearly one hundred species, of which a list is given in the Appendix.

Our author's greatest acquisition in this class was a specimen of Wahlberg's Eagle, obtained just outside Pretoria, where *Elanus caeruleus* could also usually be seen, and several species of Kestrel were abundant. As regards other birds met with in the same district, Mr. Distant writes as follows:—

"Some species very common in the wooded districts of Waterberg and Zoutpansberg are occasionally seen in the district of Pretoria, such as the Grey Plantain-eater (*Schizorhis concolor*) and the Yellow-billed Hornbill (*Lophoceros leucomelas*), examples of both of which were observed and obtained. Another bird not at all rare around Pretoria is the Golden Cuckoo (*Chrysococcyx cupreus*); in the stomach of one I found small Coleoptera, in that of another specimen small Orthoptera. Peters' Glossy Starling (*Lamprocolius sycobius*) and the Cape Glossy Starling (*Amydrus morio*) are very abundant in wooded rocky spots, and give a colour to the scene; while after the rains the Common Spreos (*Spreo bicolor*) assemble in flocks upon the veld and devour the small Orthoptera there existing in great plenty.

"Wherever wet places and high reeds are found, the Long-tailed Widow-bird (*Chera progne*) may usually be observed pursuing its laborious and difficult flight, heavily handicapped by its seasonally-developed tail, and is a good instance of sexual selection exercised at the expense of protection.

"Among the tamest of birds may be mentioned the Cape Long-claw (*Macronyx capensis*), which can frequently be killed when driving by a slash of the whip wielded by an expert Kafir, as a specimen in my collection was thus obtained. But this bird is not usually found around the outskirts of the town, as is that most friendly of visitors, the Cape Wagtail (*Motacilla capensis*), many of which fall a prey to small Dutch boys armed with that hideous instrument, the 'catapult.'"

71. *Gadow on the Structure of Pedionomus.*

[Notes on the Structure of *Pedionomus torquatus*, with regard to its Systematic Position. By Hans Gadow, Ph.D., M.A. Records Australian Mus. i. p. 205.]

Dr. Gadow describes at some length the structure of *Pedionomus*—an obscure Australian form, generally supposed to belong to the Turnicidæ—from two specimens placed at his disposal by the Trustees of the Australian Museum, Sydney. The conclusion arrived at is that *Pedionomus* must be referred to the Turnices, “as their lowest, most Rallo-Galline member.” The sternum is “decidedly like that of the Turnices, and differs in every essential point from that of the Rasores.” In the pelvis also *Pedionomus* resembles *Turnix*, and it is schizorhinal, like *Turnix*, whereas the Gallinæ are holorhinal. The fifth cubital remex is absent. The oil-gland is large and tufted.

72. *Godman and Salvin's 'Biologia Centrali-Americana.'*

[*Biologia Centrali-Americana*; or, Contributions to the Knowledge of the Fauna and Flora of Mexico and Central America. Edited by F. DuCane Godman and Osbert Salvin. (Zoology.) Parts XCVI.—C. 4to. London: 1891–92. Published for the Editors by R. H. Porter, 10 Chandos Street, Cavendish Square, W.]*

The authors of the “Birds” of the ‘*Biologia Centrali-Americana*’ have made another important step forward in the progress of this great work. In the recently issued numbers appertaining to this branch of their subject they take up the Formicariidæ, and give us a full account of 52 species of this extensive family that occur in Central America. Of the family Pteroptochidæ, which concludes the long array of Passeres, but one species—*Scytalopus argentifrons*, a recent discovery on the volcano of Irazu in Costa Rica—comes within the limits of the work. *Zeledonia coronata*, another newly described Cost-Rican form, is placed at the end of the Passeres as a “genus *incertæ sedis*,” until its anatomy and osteology are known.

As regards the Formicariidæ, Messrs. Godman and Salvin follow pretty nearly the sequence of genera in this family

* Cf. last notice, above, p. 168.

used in the 'Catalogue of Birds' (vol. xv.), and also divide it into two main groups; but they arrange the genera under these sections differently, and define them by different characters. One of these main sections embraces the tree- and bush-frequenting genera, with shorter tarsi; the other the terrestrial birds. These are denominated respectively "Arboricolæ" and "Terrestres."

The following species are figured in this part:—*Thamnophilus punctatus*, *T. bridgesi*, *T. anabatinus*, *Dysithamnus puncticeps*, *Myrmeciza læmosticta*, *M. immaculata*, *Grallaria princeps*, *G. dives*, and *G. perspicillata*.

The *Thamnophilus nævius*, auct., of Central America, is separated as *T. atrinucha*; a new *Gymnopithys* from Colombia is described (p. 222) as *G. ruficeps*, and a new *Myrmeciza* from Ecuador (p. 230) as *M. nigricauda*.

73. Hudson's 'Naturalist in La Plata.'

[The Naturalist in La Plata. By W. H. Hudson, C.M.Z.S. London: Chapman and Hall, 1892.]

Most of Mr. Hudson's excellent field-notes on the birds of Argentina have already been published in 'Argentine Ornithology.' But our readers will find no lack of interest in the volume of collected essays now before us. There are chapters on "Fear in Birds," on "Humming-birds," on the "Crested Screamer," and on the Dendrocolaptidæ, all well worthy of study, and many beautiful illustrations of our favourites in strange attitudes are given. We are pleased to see that Mr. Hudson's volume has been received with a chorus of approbation by the critics, in which we have great pleasure in joining most heartily.

74. Kennedy's 'Sporting Sketches in South America.'

[Sporting Sketches in South America. By Admiral Kennedy. 8vo. London: 1892. R. H. Porter.]

Admiral Kennedy has reproduced in this little work a series of entertaining papers which made their first appearance in 'Land and Water,' and has dedicated his volume to our President, Lord Lilford. These papers relate mainly to

sporting adventures and excursions in Uruguay, Argentina, Patagonia, and the Falkland Islands, but extend also to places higher up on the Brazilian coast. Admiral Kennedy's sketches are manifestly not in the least of a scientific character, but there are many allusions to birds and bird-life among them, and they will be read with pleasure by ornithologists who are interested in South America and in its ornis.

75. *Lucas on Explorations in Labrador.*

[Explorations in Newfoundland and Labrador in 1887, made in connection with the Cruise of the U.S. Fish-Commission Schooner 'Grampus.' By Frederic A. Lucas. Rep. Nat. Mus. Washington, 1888-89, p. 709.]

This report is a supplement to a previous paper by the same author (*cf.* *Ibis*, 1891, p. 281), in which the successful expedition of the 'Grampus' to Funk Island in 1877, and the acquisition of large quantities of the bones of the Great Auk were described. Some of the previous statements are repeated, but further details are introduced. As the value of a skeleton of *Alca impennis* appears to be at least £120, the bones of this extinct bird may be well said to be "worth their weight in gold." Mr. Lucas gives us a very nice narrative of his summer cruise, in the course of which he visited the "Bird Rocks," the "Penguin Islands," and several other places besides Funk Island, which was the main object of the expedition. As regards the results, next in importance to the bones of the Great Auk were a pair of Welch's Ptarmigan (*Lagopus welchi*), shot on the Cloud Hills, on the western side of Canada Bay, "being the second pair ever taken, and the only birds in summer plumage."

76. *Millais on the British Tetraonidæ.*

[Game-Birds and Shooting Sketches; illustrating the Habits, Modes of Capture, Stages of Plumage, and the Hybrids and Varieties which occur amongst them. By John Guille Millais. Folio. London: H. Sotheran and Co., 1892.]

In this handsome illustrated volume the author gives his

experiences of the four species of the Grouse family found in our islands. The letterpress is excellent, and some of the descriptions of the habits of the birds and the places in which they are found can hardly be surpassed for graphic power. Of the many beautiful illustrations we prefer the sepia-like autotypes and the woodcuts, because they display to advantage Mr. Millais's rare capacity as a draughtsman; the coloured plates (especially those printed in Germany) are less pleasing, owing to their crudity and hardness of outline. They are, however, of considerable interest, for among them are to be found some valuable figures of hybrids, of hens assuming the plumage of the male, and of a unique example of an adult Blackcock in the dress of the Greyhen. In attributing the scarcity of Ptarmigan (as compared with Grouse) to the Fox and the Golden Eagle (p. 64), Mr. Millais may be right as regards Perthshire, but elsewhere other reasons must be sought to account for their numerical inferiority and even decrease. Upon this point we can hardly do better than give some extracts from a letter written by that excellent observer, Mr. Henry Evans, of Jura:—

“From all I can learn, the decrease of Ptarmigan in Jura followed the extermination of Eagles there, and the evidence is strong. There were formerly many Eagles—over fifty being destroyed in six years, both Golden and Erne; and as this was about forty years ago, Ptarmigan have had plenty of time to breed up again if the Eagles caused the scarcity. Thirty years ago Jura held far more Ptarmigan than now, when only a very few are left; so it is abundantly evident that Eagles did not cause the decrease. There are no foxes in Jura. Eagles frequent Ptarmigan-ground no doubt, but chiefly because it is high; they like hares and rabbits much better than they do birds, and I do not think they take many birds if hares and rabbits are about.”

Now in Jura, of all places, it might have been expected that Eagles would be forced by necessity to prey upon Ptarmigan, for in that island neither mountain-hares nor rabbits are found: true, there are Grouse. We trust that Mr. Millais will investigate this point more closely; and inas-

much as he has also studied the genus *Lagopus* in Iceland and Scandinavia, we shall be glad to know his views respecting the species or races of Ptarmigan found in Spitsbergen and Novaya Zemlya. We heartily recommend his book, and our only regret is that its costliness must necessarily restrict the wide circulation which it so well deserves.

77. *North on the Breeding of Plotus.*

[Note on the Nidification of *Plotus novæ-hollandiæ*, Gould, the New-Holland Snake-bird or Darter. By A. J. North. Records Australian Mus. vol. i. p. 147.]

Plotus novæ-hollandiæ builds on trees standing in the water. The eggs are bluish white, with calcareous covering. The specimens were procured at Lake Buloki, Victoria.

78. *North on the Nesting of Edoliosoma tenuirostre.*

[Note on the Nidification of *Edoliosoma tenuirostre*. By A. J. North. Records Australian Mus. vol. i. p. 177.]

This bird builds on trees, at about 40 feet from the ground. The egg is bluish grey, spotted and dotted uniformly with umber and slaty brown. The example described was obtained in Northern Queensland.

79. *North on the Nesting of Turnix melanotus.*

[Note upon the Nidification of *Turnix melanotus*, Gould: Small Black-spotted Turnix. By A. J. North. Records Australian Mus. vol. i. p. 195.]

Like other members of the genus, this Hemipode builds on the ground a scanty nest in a hollow, and lays four eggs, which are of a greyish white, obscured by minute freckles of pale brown and sparingly spotted with dark slaty grey. The specimens described were taken in Queensland, on the Herbert River.

80. *Oustalet on the Birds of China and Tibet.*

[Contributions à la Faune de la Chine et du Tibet: description d'espèces et de races nouvelles d'oiseaux données récemment au Muséum d'Histoire Naturelle par le Prince Henri d'Orléans. Par M. E. Oustalet. Ann. Sc. Nat. Zool. sér. 7, xii. p. 271 (1891-92).]

In this article M. Oustalet gives us an account of the col-

lection of birds made by M. Bonvalot, Prince Henry of Orleans, and Père Dedekens during their recent adventurous expedition through Eastern Turkestan, Tibet, and Western China to Saigon*.

The author commences by remarks on the genera *Babax*, *Trochalopteron*, and *Pomatorhinus*, and describes, as new species or subspecies, *Babax bonvaloti* from So, in Tibet; *Trochalopteron henrici* from the same locality; *T. bonvaloti* from Tioungou, Tibet; *Pomatorhinus dedekensi* from the same locality; and *P. armandi* from Aio, Tibet. He also describes *Alcippe bieti* and *Acredula bonvaloti* from Tà-tsién-loû; *Leptopæcile henrici* from Tibet; *Zosterops mussoti* from Setchuan; *Uragus henrici*, without locality; *Eurhinospiza* (gen. nov. Fringillidarum) *henrici* from Tibet; and *Tetraogallus henrici* from Tà-tsién-loû. M. Oustalet then proceeds to give a classified list of the principal species which were obtained or observed in the vicinity of Tà-tsién-loû by Prince Henry, or of which specimens were given to him by Mgr. Biot from the same district. Some of these (which are indicated by an asterisk) are not included in David and Oustalet's well-known 'Oiseaux de la Chine.' In the course of this list the *Cinclus pallasi* of Tà-tsién-loû is separated as a subspecies *souliei*, and it is stated that *Tetraophasis desgodinsi* (Oust., Le Naturaliste, 1886, p. 275) is the same as *T. szechenyi*, Madarasz (Zeitsch. f. d. ges. Orn. ii. p. 50, pl. ii.) and that the *Pucrasia* erroneously referred by M. Oustalet to *P. darwini* (Le Naturaliste, 1886, p. 276) is identical with *P. meyeri*, Madarasz (Ibis, 1886, p. 145).

The following birds are figured in this memoir:—*Acredula bonvaloti*, *Alcippe* (*Proparus*) *bieti*, *Leptopæcile henrici*, *Uragus henrici*, and *Eurhinospiza henrici*.

81. Pratt's 'Snows of Tibet.'

[To the Snows of Tibet through China. By A. E. Pratt, F.R.G.S. 1 vol. 8vo. Longmans: 1892.]

Mr. Pratt's main object in his expedition was entomology,

* For the narrative of this Journey, see above, no. 67, "Bonvalot—De Paris au Tonkin," p. 448.

but many allusions to birds will be found in this most interesting narrative. Mr. Pratt's route was up the Yangtze to Ichang, and thence through the gorges of the great river to Sui-fu. Here the Yangtze was left, and its northern confluent, the "Min," ascended to Kia-ting, whence the route was by land to Ta-tsien-lu, well known as the headquarters of the Roman-Catholic missionaries in Northern Szechuen. Ta-tsien-lu is on the eastern confines of Tibet, and only a few days' journey from Moupin, where Père David made his remarkable collections. Here Mr. Pratt made excursions to elevations of 14,000 and 15,000 feet, and met with *Crossoptilon tibetanum* and *Lophophorus lhuysi* near the snow-line. Living specimens of both these splendid Pheasants were obtained and brought home safely to the Zoological Society's Gardens. Mr. Seebohm has already given us an account of Mr. Pratt's collection of birds (*Ibis*, 1891, p. 370), of which a nominal list forms one of the appendices to the present work.

82. *Ridgway on the Genus Sittasomus.*

[Notes on the Genus *Sittasomus* of Swainson. By Robert Ridgway. Proc. U.S. Nat. Mus. xiv. p. 507.]

Mr. Ridgway has examined 44 specimens of the difficult genus *Sittasomus*, and has come to the conclusion that "the actual number of recognizable forms is at least double that recognized" in the fifteenth volume of the British Museum Catalogue. Mr. Ridgway makes out six species, besides the quite distinct *S. stictolæmus*, Pelz., of which there are no specimens in the U.S. National Museum. These he calls *SS. erithacus*, *chapadensis* (sp. nov.), *amazonus*, *sylvioides*, *æquatorialis* (sp. nov.), and *griseus*. Mr. Ridgway has, of course, a right to his opinions, but we are not obliged to agree with him. Having had the advantage of being able to examine the type of *S. olivaceus* (Max.), which is inaccessible in Europe, he is, no doubt, correct in referring that name to *S. erithacus*.

83. *Salvadori's 'Catalogue of Parrots.'*

[Catalogue of the Psittaci, or Parrots, in the Collection of the British Museum. By T. Salvadori. London: 1891.]

The twentieth volume of the 'Catalogue of the Birds in the British Museum' is devoted to the great Order of Psittaci. For its preparation the Trustees are fortunate in having secured the services of our distinguished Foreign Member, Count Salvadori, who has devoted more than two years and a half to this work. It was completed in December last, and is dated 1891, though it was not actually accessible to the public until the middle of last March. Like all other pieces of work of our esteemed friend, the present volume deserves our highest commendation for its thoroughness, completeness, and accuracy. It is true, perhaps, that, as is alleged by some critics, the author occasionally divides his species upon somewhat fine characters, and is prone to carry his division of genera to an excess. But as the grounds for these separations, slight as they may be, are always clearly and distinctly stated, we are of opinion that these failings, if failings they be, hardly affect the value of Count Salvadori's excellent work.

Count Salvadori divides the Psittaci into six families—Nestoridæ, Loriidæ, Cyclopsittacidæ, Cacatuidæ, Psittacidæ, and Stringopidæ. As a primary ground for the division of the Order he introduces a new character, taken from the structure of the bill. In the first three families the hook of the upper mandible beneath is nearly smooth, or has only "superficial longitudinal ridges;" in the last three the apex of the upper mandible beneath has "two lateral series of ridges, more or less transverse or oblique, producing a file-like surface."

The number of specimens of Parrots in the British Museum is 5113, which are referred to 450 species, while 49 others, admitted in the Catalogue, are not represented in our National Collection. The total number of species of this Order recognized is therefore 499, of which the following 14 are described as new for the first time in the present volume:—

<i>Eos challengeri</i> .	<i>Chrysotis inornata</i> .
<i>Neopsittacus rubripileum</i> .	<i>Chrysotis salvini</i> .
<i>Conurus callogenyus</i> .	<i>Urochroma emmæ</i> .*
<i>Pyrhura emma</i> .*	<i>Geoffroyus floresianus</i> .
<i>Pyrhura berlepschi</i> .	<i>Geoffroyus sumbavensis</i> .
<i>Psittacula flavescens</i> .	<i>Ptistes wetterensis</i> .
<i>Chrysotis virenticeps</i> .	<i>Bolbopsittacus intermedius</i> .

Four new genera are also described in this work for the first time, namely, *Hypocharmosyna*, for *Trichoglossus wilhelminæ*, Meyer, and others; *Conuropsis*, for *Conurus carolinensis*; *Neophema*, for the group usually called *Euphema*; and *Bolbopsittacus*, with *Cyclopsittacus lunulatus* for its type.

The African, Austro-Malayan, and Australian series of Parrots in the British Museum are stated to be "far from complete, and often insufficient to give an idea of the different stages, of the sexual differences, or of the geographical distribution." On the other hand, the Indian series, thanks to Mr. Hume, and the Central American set, owing to the liberality of Messrs. Salvin and Godman, are both very satisfactory.

The following species are figured:—

Pyrhura emma, *P. berlepschi*, *P. rupicola*, *P. rhodoccephala*, *Myopsittacus luchsi*, *Bolborhynchus andicola*, *Psittacula sclateri*, *Chrysotis lilacina*, *C. diademata*, *C. salvini*, *C. chloronota*, *Pionopsittacus pyrrhops*, *Tanygnathus everetti*, *T. burbidgii*, *Palæornis finschi*, *Bolbopsittacus intermedius*, *Loriculus amabilis*, *L. quadricolor*, *Platycercus xanthogenys*, *Cyanorhamphus subflavescens*, *C. cyanurus*.

84. *Salvadori on Birds from Sumatra.*

[Catalogo di una Collezione di Uccelli di Sumatra fatta dal Dott. Elio Modigliani e descritta da Tommaso Salvadori. Ann. Mus. Civ. Genova, ser. 2, xii. p. 40.]

Dr. Elio Modigliani, the intrepid explorer of Nias †, crossed

* These two species were named in MS. by Verreaux and Count Berlepsch respectively, but no descriptions of them have been previously published.

† See Ibis, 1890, p. 376.

the island of Sumatra in 1890-91 from Siboga on the west coast to near Tanguig Balei on the east, and made a collection of 512 specimens of birds, which are referred by Count Salvadori to 117 species. Three of these are described as new—namely, *Niltava decipiens*, *Gerygone modiglianii*, and *Phyllergates sumatranus*. Five more are new to the avifauna of Sumatra, and others of special interest are *Pericrocotus montanus*, previously known only from the female, *Hemipus intermedius*, *Stachyridopsis bocagii*, and *Pnoepyga lepida*.

85. Salvadori on the Birds of Engano.

[Uccelli di Engano raccolti dal Dott. E. Modigliani e descritti da Tommaso Salvadori. Ann. Mus. Civ. Genova, ser. 2, xii. p. 123.]

Engano is the most southern of the chain of islands that borders the west coast of Sumatra. It is distant about 180 miles from South Pageh, the next island of the group, and lies 210 miles S.E. of Java. Very little was known of the birds of Engano until Dr. Modigliani's recent visit, which took place in May and June 1891, at the request of the Society of Arts and Sciences of Batavia, and a detailed account of which will be hereafter published*. Judging by the collections of birds now described by Count Salvadori, the results will be of considerable interest. The specimens of birds collected in Engano were 148 in number, and belong to 23 species. Of these no less than 8 are new, and are described as *Graucalus enganensis*, *Pericrocotus modiglianii*, *Zosterops incerta*, *Geocichla leucolæma*, *Calornis enganensis*, *Gracula enganensis*, *Carpophaga ænothorax*, and *Macropygia cinnamomea*. Most of these are representatives of Sondaic species, but a minority show a certain amount of affinity with the avifauna of the Andamans and Nicobars. Of great interest is the discovery of the real home of *Palæornis modesta*, of which numerous specimens were obtained in Engano. We are much pleased to see that Count Salvadori maintains the Linnean name

* The island was lately visited by Mr. W. Doherty in search of butterflies (see his account of it in J. A. S. B. lx. pt. 2, p. 4).

Gracula for *G. religiosa** and its allies. Some recent authorities† have attempted to discard it for "*Mainatus*" or "*Eulabes*," without sufficient reason, as it appears to us.

86. *Schaeck on the Francolins.*

[Monographie des Francolins. Par P. de Schaeck. Mém. Soc. Zool. de France, iv. p. 272, 1891.]

This is a memoir of some importance, in which the whole of the members of the extensive Gallinaceous genus *Francolinus*, comprehending, according to the author, 55 valid species, are reviewed and commented upon, principally from specimens in the French National Collection, so far as they go. After disquisitions on the external and internal characters, habits, and acclimatation of Francolins, the author proceeds to their classification, and discusses the 55 species one after the other, giving synonyms, descriptions, localities, and other particulars in each case. No subdivisions of the genus are given, which should surely be done in such a numerous genus, and *Rhizothera* (with twelve tail-feathers) and *Pternestes* (with the throat naked) are included in the middle of the series. Those who want to name their specimens of Francolins will therefore, in our opinion, find Mr. Grant's essay on this group (*Ibis*, 1892, p. 32) more practically useful, though it does not enter into so many particulars. It would appear that the Paris Collection does not contain examples of many of the species lately described in Germany, so that M. de Schaeck has not been able to study them satisfactorily.

87. *Sharpe's 'Catalogue of Osteological Specimens of Birds.'*

[Catalogue of the Specimens illustrating the Osteology of Vertebrate Animals, Recent and Extinct, contained in the Museum of the Royal College of Surgeons of England. Part III. Class Aves. By R. Bowdler Sharpe, LL.D. 8vo. London: 1891. Pp. 469.]

Our indefatigable fellow-worker has found time, in the

* It will be observed that *Gracula religiosa* is actually the first species mentioned in Linnæus's list (*Syst. Nat.* i. p. 164, 1766).

† Cf. Sharpe, *Cat. Birds*, xiii. p. 98; also *ibid.* App. p. 667; and Oates, *Birds Brit. Ind.* i. p. 509.

middle of numerous other pieces of work, to prepare the volume of 470 pages now before us. It contains a catalogue of the skeletons and other osteological specimens in the well-known Museum of the Royal College of Surgeons, and has evidently been compiled with great care and attention. The series embraces no less than 2380 objects, and although some of the groups are very imperfectly represented (*e.g.* Tracheophonæ, Trogones, and *Crypturi*), there is probably no other collection of the kind of equal extent—certainly not one so well catalogued.

The arrangement employed in the present volume is that of Mr. Seebohm, with some slight modifications. Numerous woodcuts are introduced into the text, and add materially to the usefulness of the volume. Some of these are old friends, but there is a valuable set of illustrations of the crania, which are beautifully executed. We could have wished, however, that "Letters as before" had not been appended to so many of them. It would have given so little trouble to the author to have repeated them, and would have saved so much to the student!

88. *Shufeldt on the American Pygopodes.*

[Concerning the Taxonomy of the North-American Pygopodes, based upon their Osteology. By R. W. Shufeldt, C.M.Z.S. Journ. Anat. and Phys. xxvi. p. 199.]

The author states his opinion that the "Pygopodes constitute a natural suborder of Birds, consisting only of the Loons and Grebes, and excluding the Auks." These two families he proposes to raise to the rank of "super-families," as "Podicipoidea" and "Urinatoroidea," and gives a summary of the chief osteological characters that distinguish them. The Pygopodes are believed to be descended from "the same ancestral stock" to which the extinct toothed bird of Cretaceous times, *Hesperornis*, belonged.

89. *Stejneger on Japanese Birds.*

[Notes on Japanese Birds contained in the Science College Museum, Imperial University, Tokyo, Japan. By Leonhard Stejneger. Proc. U.S. Nat. Mus. xiv. p. 489.]

Dr. Stejneger has examined a collection of Japanese birds formerly in the Educational Museum of Tokyo, and recently handed over to the Science College of the Imperial University. This paper contains the notes made during his examination. Among the more interesting species commented upon are *Sterna dougalli*, *Glareola orientalis* (new to Japan), *Tringa ferruginea* (intell. *T. subarquata*), *Phaethon rubricauda* and *P. candidus*, *Ardea purpurea*, *Halcyon pileata*, *Turdus hortulorum*, and *Emberiza leucocephala*.

90. *Stejneger on the Cubital Coverts of the Paradise-birds.*

[Notes on the Cubital Coverts in the Birds of Paradise and Bower-birds. By Leonhard Stejneger. Proc. U.S. Nat. Mus. xiv. p. 499.]

Referring to Mr. Goodchild's paper "On the Cubital Coverts of the Euornithes in relation to Taxonomy,"* Dr. Stejneger asserts that that author is in error in classing the wings of the Paradiseinæ as showing the "Cypseline style," and that these birds "form no exception from the genuine Passerine arrangement of the cubitals." In the same way he maintains, against Mr. Goodchild's views, that *Ptilonorhynchus*, exemplifying the Bower-birds (which Mr. Goodchild regards as having a Picarian arrangement of the minor coverts), is similar to the Paradise-birds, and typically Passerine in this point.

91. *Taczanowski on the Birds of Eastern Siberia.*

[Faune Ornithologique de la Sibérie Orientale. Par le Dr. L. Taczanowski. Œuvre posthume. Première partie. Mém. Acad. Imp. Sc. St. Pétersbourg, vii^e série, tome xxxix. (1891).]

This important work of our much esteemed friend Ladislas Taczanowski, whose loss we have lately had occasion to lament, is published after his death by the Imperial Academy of Sciences of St. Petersburg as a fitting tribute to his memory. The first part is now issued, and gives us an account of 265 species of Accipitres and Passeres. The second part, still to be issued, will be consecutively paged, and the whole

* Cf. Ibis, 1891, p. 460.

will form the thirty-ninth volume of the seventh series of the Memoirs of the Imperial Academy.

The memoir is based upon the rich collections, now in the Warsaw Museum, made by Dr. Dybowski and his companions from 1865 to 1877 in various parts of Eastern Siberia, and subsequently, during four years and a half, in Kamtschatka and on the Commodore Islands. To these have been added other collections made by M. Jankowski in the island of Askold, and by M. Kalinowski in the marshes of the Sungari and elsewhere.

After a short introduction, in which the principal previous authorities on the Siberian avifauna are mentioned, and an account is given of the various explorations made and localities visited by the above-mentioned collectors, the author enters upon a systematic review of the numerous species of the East-Siberian ornithology. The Accipitres treated of are 35, the Striges 17 in number. The rest of this volume is devoted to the Passeres. Short Latin diagnoses are given of every species. The work, when finished, will be one of the most valuable of recent contributions to geographical ornithology, and will be specially useful to students of the European ornithology, as showing clearly the ranges and the variations of the western species, as they extend eastwards.

92. *Whymper's Travels amongst the Great Andes.*

[Travels amongst the Great Andes of the Equator. By Edward Whymper. London: Murray, 1892.]

Mr. Whymper's account of his expedition to Ecuador in 1879-80, which has been so long waited for, has now appeared, and, as those who know the author will have always expected, leaves nothing to be desired as regards the accuracy of its diction, the beauty of its illustrations, and the general finish of the whole work. Mr. Whymper's zoological collections, which were formed with the view of bringing together the species which range highest in the Andes, chiefly consisted of Insects, Crustaceans, and Reptiles, and are described in a "Supplementary Appendix." But several

allusions to birds will be found interspersed in the narrative. An excellent illustration of the way in which Condors are lassoed (or attempted to be lassoed) is given, p. 205, and a list of the 26 species of Humming-birds of Pichincha and its environs, with remarks thereon, will be found at p. 215. No naturalist should fail to read this most delightful and instructive volume.

93. *Wiglesworth's 'Aves Polynesiæ.'*

[*Aves Polynesiæ*. A Catalogue of the Birds of the Polynesian Sub-region (not including the Sandwich Islands). By Lionel W. Wiglesworth. Abh. k. Zool. u. Anth. Ethn. Mus. zu Dresden, no. 6 (1891).]

The author claims for this catalogue the position of an "enlarged second edition" of G. R. Gray's well-known 'List of the Birds of the Tropical Islands of the Pacific Ocean,' published in 1859, carried up to the standard of our present knowledge. But it is even a more useful and much more nearly complete work. In the first place, much greater attention is paid to exact locality than was the case in Gray's List. At the present epoch, as Mr. Wiglesworth well remarks, the "correct indication of habitat" has become the "*sine quâ non* of a faunal work on Polynesia." In the next place, in the case of species peculiar to the subregion (nearly three fourths of the 400) it has been attempted to give a full synonymy. This will be of material assistance to future workers on Polynesian ornithology.

Gray enumerated 220 Polynesian birds. Mr. Wiglesworth comprehends 416 in his catalogue, which, moreover, does not include the species of the Hawaiian archipelago. Of these 416, from 280 to 290 are autochthonous.

In his well-written preface Mr. Wiglesworth divides Polynesia ornithologically into five main divisions:—(1) *North-western Polynesia*—comprising the Marianne, Pelew, and Caroline Islands (3 genera peculiar); (2) *Melano-Polynesia*, i. e. New Caledonia and its adjuncts (6 genera peculiar); (3) *Central Polynesia*, i. e. Fiji, Tonga, and Samoa groups (9 genera peculiar); (4) *Eastern Polynesia*, i. e. the Cook,

Society, Paumotu, and Marquesas Islands and appendages (2 genera peculiar); and (5) *the Central Coral-group*, containing the Marshall, Gilbert, Ellice, and other islands. These divisions are briefly discussed and described. We regret that no map of them is given, as that would have rendered the author's arguments much more easily intelligible.

The Catalogue has been prepared at Dresden under the ægis of Dr. A. B. Meyer, whose kind assistance is fully acknowledged. But the Museums of Berlin, Hamburg, Bremen, Leyden, and London have also been visited for the consultation of types. It would have been of great advantage if the author had stated in each case whether he had examined those types, and, indeed, whether he had personally examined specimens of the species at all. In fact, we should have preferred more notes and less synonymy. But we are thankful to Mr. Wigglesworth for what appears to us to be a very useful piece of work, so far as it goes.

XXXIX.—*Letters, Extracts, Notices, &c.*

WE have received the following letters, addressed to the Editor:—

SIR,—On November 3rd, 1891, I received a pair of Bustard-Quails (of what species I was then ignorant) from Mr. A. Jamrach, who informed me that he had obtained them from India. By the loan of a skin on November 19th, I was enabled to identify them as *Turnix nigricollis* of Madagascar*.

The following notes I transcribe almost *verbatim* from my note-books:—"December 18, 1891. The Black-throated *Turnices* thrive, and the large and more brightly coloured one, which I believe to be a female, occasionally makes a sort of incipient 'boom,' *parva componere magnis*, somewhat resembling the 'drum' of the female Emeu.

* "Black-necked Bustard Quail," J. Sibree, *Ibis*, 1891, pp. 562, 563: *Turnix nigricollis* (Gm.), Ogilvie Grant, *Ibis*, 1889, pp. 471, 472, et op. cit. 1892, pp. 346, 347.

"March 25, 1892. The Madagascar Bush Quails are noisy; the note of the female differs very considerably from that of *Turnix sylvatica*; the male has a short purring chuckle.

"April 13, 1892. The Bush Quails have an egg, not much resembling that of 'Torillo' = *T. sylvatica*. April 20. Another egg laid, but no sign of nesting. One egg was cracked, so we removed both.

"April 26. The Bush Quail laid another egg, which was found broken to pieces this morning. I placed these birds in a larger cage and removed them to a quiet place, with a good supply of dry moss, and on May 4 they had made a nest and laid two eggs, to which a third was added on the 5th, but so far as I could ascertain neither bird sat steadily on the eggs, and all three were eventually broken." I believe that in a larger cage, partially darkened and never disturbed, we might have had some eggs hatched, but the birds were so constantly restless, and so easily frightened, that the cleaning of the cage and supplying food and water prevented them from sitting successfully, and also prevented our ascertaining which of the birds, if either, attempted incubation. I gave two of the eggs to Professor A. Newton, and one to Lieut.-Col. Ed. Butler.

I am, Sir,

Yours &c.,

June 16th, 1892.

LILFORD.

P.S.—Since I wrote this letter my bird-keeper has told me that he *did* on May 4th detect the male bird on the two eggs, so there is little doubt that it is the male of this species that undertakes the duty of incubation.

SIR,—In my Catalogue of the Parrots (p. 302) I have mentioned in a footnote *Chrysotis hecki* (Rehnw.), and given as a description a translation of Reichenow's original one (Journ. f. Orn. 1891, p. 211). As I was not autoptically acquainted with this bird, the only remark I made about it was that the dull rose tinge of the feathers of the pileum and nape seemed to ally this species to *C. lilacina* (Less.) from Guayaquil.

In the last October number of the 'Journal für Ornithologie,' received only yesterday, there is a coloured figure of *C. hecki*, and after having seen it I have very little doubt about the specific identity of *C. hecki* with *C. lilacina*. According to my ideas, the type of the former, which is a living bird in the Zoological Gardens of Berlin, is merely an older and more fully coloured bird of the same species as that in the British Museum from Western Ecuador, which I described as *C. lilacina*.

Yours &c.,

T. SALVADORI.

Turin, Zoological Museum,
21st March, 1892.

SIR,—In reply to your inquiries I can state that there are still two places in Holland where the Spoonbill (*Platalea leucorodia*) breeds every year. One of these is the Naarder Meer, situated near the town of Naarden, in North Holland; the other is the Zwanenwater, situated on the west coast near the town of Helder. In both these places these birds are carefully preserved by the owners, so that no eggs are now allowed to be taken, and the nesting-places can be visited only by special arrangement.

The result of these measures is that the Spoonbills have of late years increased in numbers, and there is now every prospect that these interesting birds will be preserved to Western Europe for many years to come. The older nesting-places at Nieuwer-kerk, between Rotterdam and Utrecht (cf. Gould's 'Birds of Great Britain,' vol. iv., text to pl. 32), and in the Horster Meer near Overmeer an de Vecht (cf. 'Ibis,' 1877, p. 412), are both deserted in consequence of the drainage of the water.

Yours &c.,

s' Graveland, Hilversum,
Holland, May 27th, 1892.

F. E. BLAAUW.

[Dr. C. Kerbert, Director of the Gardens of the Royal Zoological Society of Amsterdam, also asks us, in order to prevent disappointment, to caution English ornithologists that it is no longer permitted to disturb the Spoonbills in their breeding-places by visiting them during the breeding-season.—EDITOR.]

SIR,—In accordance with your kind invitation, I write to call the attention of ornithologists to a fact concerning the distribution of the Sun-bird of Palestine (*Nectarinia oseeæ*) which seems to have escaped the notice of most authorities. In Canon Tristram's work on the 'Flora and Fauna of Palestine,' p. 64, he states that this bird has not been observed (at least to his knowledge) any further north than Carmel. Now I have repeatedly seen and taken specimens of both sexes, young as well as adults, at Beyrout, where it is a fairly common visitant in winter and spring; indeed, it is no unusual occurrence to see one or two at a time in my own little garden, whenever there is a climbing bean in flower or some similar attraction, although my house is near the centre of the town, in a noisy and crowded quarter. I *suspect*, though I cannot prove it, that the bird even breeds in the vicinity of Beyrout occasionally.

I am, Sir,

Yours &c.,

Beyrout, Syria,
May 1892.

W. T. VAN DYCK, M.D.

SIR,—I beg leave to call your attention to a remarkable coincidence, showing how the same errors may be independently propagated in two quarters. In the last number of the 'Records of the Australian Museum,' published at Sydney in April, Professor Newton appears to imply (though his sentence, being ungrammatical, might possibly be interpreted otherwise) that I have repeated a statement of Temminck's that the Sanderling occurs in the Sunda Islands and New Guinea. He seems to suggest that my remark that the Sanderling is a winter visitor to the islands of the Malay Archipelago is an unverified generalization from Temminck.

Curiously enough, in the last number of the 'Aves Hawaienses,' published in this country in May, Mr. Scott Wilson repeats the same charges in a very similar sentence, giving the same references and falling into the same errors.

I based my statement upon four skins: one in the Leyden Museum, obtained in Java about 1826; two in the same Museum, collected on the same island in 1862; and a fourth

in the British Museum, obtained on the Tampussuk River, in N.W. Borneo, by Mr. Pretyman about 1881.

In spite of Professor Newton's implied statement that the Sanderling was not found in Borneo by Everett, there is an example in the British Museum obtained by him on Baram Point, and already duly recorded (Everett, *Ibis*, 1890, p. 465), so that Mr. Scott Wilson is further in error in saying that my statement is not borne out by recent experience.

Further comment is unnecessary.

Yours &c.,

HENRY SEEBOHM.

Horton Grange, Maidenhead,
21st June, 1892.

HIRUNDO RUSTICA at Delagoa Bay.—In Mrs. Monteiro's lately published volume on her experiences at Delagoa Bay, she writes (p. 47) as follows:—

"It was in the beginning of March, and the rain had poured in torrents all night, and continued the whole of the next day, the wind blowing a perfect hurricane, the thermometer suddenly dropping to 63°. About 11 A.M. a drenched miserable Swallow flew into the house and perched himself on one of the partitions of the rooms; then one flew into the kitchen, and my boy caught it and brought it to me. I held the poor mite in my hands for a little while, to warm him, and then let him fly up to his companion in misfortune, by whose side he at once nestled down. In a few minutes more began to come in, at first singly, then by twos and threes, some fluttering helplessly among the white window-curtains and beating themselves against the glass. These I caught and let fly up to their friends, and was surprised to find that they were not in the least alarmed at being touched, but seemed to like the warmth of the hand, and would perch quite confidently on my finger, and not attempt to move when I stroked their little heads.

"Many were brought me half dead by women and boys, who had picked them up from the ground, and who all wanted a 'pen' (threepence) for them; but for answer I

only pointed to my fast-filling house, so they laughed and let me keep the birds, which soon recovered in the dry room. One poor little thing I found suspended in a large spider's web, and, although the wings of a Swallow seem so powerful, it was quite unable to extricate itself. They continued to come in all day, and before 5 o'clock more than a hundred had taken shelter, and the twittering and fuss that went on were most amusing. When it began to grow dark they packed themselves up for the night on the partitions as close as they could possibly crowd together, two and three deep. Most of them went to roost with their tails spread out, perhaps in order to dry them thoroughly, and the round white spot on the tip of each feather had a very curious appearance when they were all asleep and quiet. I fully expected to find the bottom row dead from suffocation the next morning, but only three had fallen victims, and these I immediately skinned. They stayed with me till about noon, one or two occasionally flying out and returning, apparently to report on the state of the weather, and then all leisurely took their departure, no doubt very glad to see the sun again shining brightly. I felt quite sorry when my little visitors departed, but was glad they chose their countrywoman's house in their time of need, for they proved to be English Swallows."

Bird-notes from Mogador.—Mr. C. A. Payton, who writes from Mogador, Morocco, May 13th, under the well-known *nom de plume* of "Sarcelle," tells us ('Field,' 1892, p. 811) as follows:—"Knots (*Tringa canutus*), in rich russet summer plumage, have been arriving here in large flights during the past three days, and pursuing a northward migration, after a good halt for food on the muddy plain outside the Mogador market-gardens, recently partly submerged by spring tides. I have secured some good specimens of these interesting Arctic-breeding birds, which were feeding in company with large numbers of Ringed Plover (*Ægialitis hiaticula*) and Grey Plover (*Squatarola helvetica*), many of them already black-breasted, sundry Sandpipers, a small party of Greenshank (*Totanus canescens*), and a variety of

Terns. Of the Knots I had no previous record here in the month of May, but had shot them in February, March, August (stragglers), September, October, and November. They were in very good condition, and the rich ruddy breasts and variegated backs were extremely beautiful."

Ornithologists Abroad.—Mr. Arthur H. Holland has returned to the Argentine Republic, and settled himself in a new estancia, called "Media Luna," about 40 miles south of Soler, on the Ferro-carril al Pacifico. We have already heard from him on the subject of birds, and have no doubt that, as before, he is devoting all his spare time to Natural History. Herr Ernst Hartert, having completed his catalogue of Cypselidæ and Caprimulgidæ for the British Museum, and written us a valuable paper on the birds of East Prussia, has left Europe for a year's collecting-tour in Venezuela. We fear he has selected a rather troublous time, as the Venezuelans are in the throes of a revolution; but a traveller of such experience both in India and Africa will know full well how to take care of himself.

Dr. Bowdler Sharpe informs us that he has already received a small supplementary collection from Mr. Charles Hose, containing further spoils of Mount Dulit in Borneo, and that he will give us an account of them in the next number of 'The Ibis.'

The first consignment of specimens from Nyassaland collected for Mr. Commissioner Johnston by his Naturalist, Mr. Alexander Whyte, F.Z.S., has already reached this country. There are some 150 birds amongst them. Mr. Johnston writes from "The Residency, Zomba, British Central Africa," on March 27th last, to say that he was then just sending off a second consignment of specimens, illustrative of the Fauna and Flora of the Shiré Highlands, a good proportion of it being from the Milangi and Zomba mountains, ranging from 4000 to 8000 feet above the sea-level. As the birds of this district are as yet quite unknown, the results of the examination of these collections will be of great interest to ornithologists.

Lieut. H. E. Barnes has unfortunately met with an accident at Aden, having injured his hand and has been sent back to India for the better recovery of his health. He forwards us some birdskins, about which he was uncertain, for identification, and promises notes on about 120 species observed or obtained in the neighbourhood of Aden for our next number.

Colius and *Hypocolius*.—Living examples of *Colius* and *Hypocolius* are now together in the Zoological Society's Parrot-house. Of course they have nothing to do with one another, *Hypocolius ampelinus* being a typical Osinine bird and *Colius* an abnormal Picarian; but it is interesting to see them side by side. The *Colies* (*Colius capensis*) have commenced to breed, and two of them sit upon several eggs in the same nest. The *Hypocolii* consist of a fine adult male, presented by Mr. W. D. Cumming of Fao in 1890, and a pair lately received from the same kind donor. The male of the latter is now paying his addresses to the female, and twists his wings and feathers about in a remarkable way, which is well worthy of inspection.

New Extinct Rail.—The 'Christchurch Press' of the 28th March last, of which a copy has been sent to us, gives an account of the expedition of Mr. H. O. Forbes, of the Canterbury Museum, to the Chatham Islands, and of his discovery of additional remains of the large extinct Rail, which he has proposed to call *Aphanapteryx hawkinsi*, after Mr. W. Hawkins, an old resident in the island, who obtained the first specimen*. Mr. Forbes went to Chatham Island on the 21st of January last, accompanied by Mr. Hawkins, and obtained a set of remains of this Rail sufficient to enable a restoration of most of its skeleton to be made. Mr. Forbes is of opinion that this Rail is a close ally of *Aphanapteryx broeckii* of Mauritius, "differing mainly in size," and goes into various speculations on the "disrupted distribution of the genus," supposing this to be the case. Whether

* See 'Nature' of March 5th and April 21st, 1892.

Mr. Forbes is right on this point is perhaps doubtful, but the discovery of this new extinct bird is one of great interest.

Recent Researches in Fossil Birds.—Under this heading will be found an article in the last number of 'Natural Science' which deserves the close attention of ornithologists. It contains an account of some very remarkable discoveries in the Lower Tertiaries of South America recently made by Prof. Ameghino and by Messrs. Moreno and Mercerat. The fossil remains obtained by Prof. Ameghino are said to indicate the former existence of birds of a "totally abnormal type, and larger than any hitherto known, by the side of which Moas may be regarded as dwarfs." In the memoir of Messrs. Moreno and Mercerat ("Los Pájaros Fósiles de la República Argentina") figures are stated to be given of a large number of other gigantic extinct flightless birds of the Lower Tertiaries of Argentina, which are referred to no less than nine distinct genera and to a new Order, "Stereornithes." There seems, however, to be much doubt about the validity of some of the conclusions arrived at, and we urge that, having regard to the undoubted importance of these discoveries, some European paleontologist well versed in the determination of fossil bones should be directed to proceed to Buenos Ayres and give us the benefit of his judgment upon the subject.

Anniversary Meeting of the British Ornithologists' Union, 1892.—The Annual General Meeting of the British Ornithologists' Union was held at the rooms of the Zoological Society of London, 3 Hanover Square, on Wednesday, the 18th of May, at 6 P.M., Mr. PHILIP LUTLEY SCLATER, M.A., Ph.D., F.E.S., in the Chair. The Minutes of the last Annual Meeting having been read and confirmed, the Report of the Committee was read. It stated that one Honorary Member (Herr A. v. Pelzeln) and two Ordinary Members (Col. Sir Oliver St. John and Mr. E. W. Harcourt) of the Union had died during the year, and that four Ordinary

Members had resigned, viz. the Earl of Antrim, Major Becher, R.A., Baron von Hügel, and Mr. C. H. T. Marshall.

The number of the Members of the Union at the close of 1891 was therefore 250, consisting of 220 Ordinary, 1 Extraordinary, 9 Honorary, and 20 Foreign Members. There were 18 Candidates for the Ordinary Membership.

The accounts for the year 1891 were then presented by the Secretary, and approved by the Meeting.

The following Ordinary Members were balloted for and declared to be duly elected:—

E. C. Stewart Baker, District Superintendent of Police,
North Cachar.

The Rev. Maurice C. H. Bird, M.A., Brunstead Rectory,
Stalham, Norfolk.

William E. Brooks, Mount Forest, Ontario, Canada.

Charles William Campbell, H.M. Consular Service,
China.

Harold Mitchell Courage, Snowdenham, Bramley, Guild-
ford.

John David Dignes de la Touche, Chinese Imperial
Maritime Customs.

William George Fairbridge, Capetown.

Frank Finn, B.A., F.Z.S., Mote House, Mote Road,
Maidstone.

John Gerrard, Government Inspector of Mines, Wake-
field.

Edward Suter Hasell, Victoria, British Columbia.

Henry Ashworth James, Kingswood, Watford, Herts.

Francis Arnold Knight, Brynmelyn, Weston-super
Mare.

Thomas Geddes Laidlaw, Bank of Scotland, Edinburgh,
and 8 Morningside Road.

Arthur Moore Laws, Little Clacton Lodge, near Col-
chester.

Dr. St. George Mivart, F.R.S., F.Z.S., Hurstcotc, Chil-
worth, Surrey.

Philip Winchester Munn, Laverstoke, Whitechurch,
Hants.

Fergus Menteith Ogilvie, M.A., F.Z.S., Sizewell House,
Leiston, Suffolk.

William Henry Turle, Newton Stacey, Stockbridge,
Hants.

The outgoing President and Secretary were then re-elected, and Mr. Osbert Salvin was chosen into the Committee in the place of Mr. Howard Saunders, who had retired therefrom.

The Officers for the year 1892-93 are therefore as follows :—

President.

THE RIGHT HON. LORD LILFORD.

Secretary.

F. D. GODMAN, Esq., F.R.S.

Editor.

P. L. SCLATER, Esq., M.A., Ph.D., F.R.S.

Committee.

DR. R. BOWDLER SHARPE.

HENRY SEEBOHM, Esq.

OSBERT SALVIN, Esq., M.A., F.R.S.

After a vote of thanks to the Chairman, the Meeting adjourned.

The Annual Dinner, subsequently held at the Café Royal, was attended by twenty-eight Members and guests.

After the Dinner a proposition was made that an Ornithological Club should be formed for the purpose of holding monthly meetings, at which papers should be read and specimens exhibited. A Committee, consisting of the Earl of Gainsborough, Mr. Seebohm, Mr. Howard Saunders, Mr. Bidwell, and Dr. Bowdler Sharpe, was appointed to consider the advisability of carrying out the proposed scheme.

THE IBIS.

SIXTH SERIES.

No. XVI. OCTOBER 1892.

XL.—*On Birds collected or observed in the Vicinity of Foochow and Swatow in South-eastern China.* By JOHN D. DE LA TOUCHE.—Part II.* (Communicated by H. H. SLATER, F.Z.S.)

(Plate XII.)

II. PICARIÆ.

137. *CYPSELUS PACIFICUS*, Lath. (?). [111.]

Foochow. De la Touche, Ibis, 1887, p. 469.

Swifts with white on the rump, and probably of this species, were seen and shot at by my shooting-men on the Foochow coast at the beginning of June.

138. *CYPSELUS SUBFURCATUS*, Blyth. [112.]

This little Swift is found in summer near Swatow. It nests on the village houses up the Keyong River, and appears to be fairly common there.

Two eggs obtained in April measure 24·5 and 24·3 millim.

139. *CAPRIMULGUS JOTAKA*, T. & S. [107.]

Foochow. Styan, Ibis, 1887, p. 228.

140. *LYNX TORQUILLA*, Linn. [88.]

Foochow. Styan, Ibis, 1887, p. 229.

A winter bird at Swatow. It is more common in the spring.

* For Part I. see above, p. 400.

141. *PICUS CABANISI*, Malh. [73.]

Foochow. Styan, Ibis, 1887, p. 229.

Very common. In February 1884, while up river, I came upon a regular gathering of Woodpeckers in an orchard-like grove close by the river-bank. The trees being quite bare of leaves, a good view could be had of the birds as they ran up the trees in all directions. I shot specimens of this and the two following species, all three species being abundant. I never again saw so many Woodpeckers together.

[It was possibly occasioned by a visitation of some particular larva of an insect to the grove.—H. H. S.]

142. *IYNGIPICUS SCINTILLICEPS*, Swinh. [79.]

Foochow. Styan, Ibis, 1887, p. 229.

Not uncommon on the hills.

Though I did not note this and the preceding species at Swatow, I have no doubt that they occur there also.

143. *GEVINUS GUERINI* (Malh.). [83 & 84.]

Foochow. Styan, Ibis, 1887, p. 229.

This is the commonest Woodpecker in the Foochow district. It also occurs on the Swatow hills.

144. *MICROPTERNUS FOKIENSIS*, Swinh. [85.]

Foochow. Styan, Ibis, 1887, p. 229.

One was shot by my boy in the hill-country west of Swatow.

145. *UPUPA EPOPS*, Linn. [144.]

Foochow. Styan, Ibis, 1887, p. 229.

Appears in winter at Foochow, but is very scarce.

146. *MEROPS PHILIPPINUS*, Linn. [117.]

This Bee-eater arrives at Swatow in April, and is very common during the summer in the rocky valleys.

147. *EURYSTOMUS ORIENTALIS* (Linn.). [119.]

Eurystomus orientalis, Swinh. P. Z. S. 1871, p. 347; Styan, Ibis, 1887, p. 229.

This Roller, which is abundant in the Foochow district in

summer, does not occur in the immediate neighbourhood of Swatow, but my boy shot one up the Keyong River on the 2nd May. No doubt it breeds there.

148. *ALCEDO BENGALENSIS* (Briss.). [120.]

Foochow. Styan, Ibis, 1887, p. 230.

Abundant and resident at Foochow and Swatow.

I kept some young birds in a cage with gauze sides for some weeks, feeding them on fish, which, after a while they learnt to pick up themselves out of a plate at the bottom of the cage. But as soon as they could feed themselves they became very wild, and, their piercing screams in the early morning making them an intolerable nuisance, I let them go.

Mr. Baun, who once noticed some natives catching this Kingfisher, told me that when the bird had been deprived of its back feathers it was let go again, but with a distinguishing mark attached to it, to prevent a needless second capture.

The feathers of *Halcyon smyrnensis* are also largely used in China for making the feather ornaments so much in use among the native women, but those of *H. pileatus* are not appreciated.

149. *CERYLE RUDIS* (Linn.). [124.]

Foochow. Styan, Ibis, 1887, p. 230.

Abundant and resident at Foochow and Swatow.

150. *CERYLE GUTTATA*, Vig. [125.]

Foochow. Styan, Ibis, 1887, p. 230.

Seen by my shooting-boy in the hill-country west of Swatow.

151. *HALCYON SMYRNENSIS* (Linn.). [122.]

Foochow. Styan, Ibis, 1887, p. 280.

Common and resident at Foochow and Swatow.

152. *HALCYON PILEATUS* (Bodd.). [121.]

Foochow. Styan, Ibis, 1887, p. 230.

Not uncommon at Foochow in spring and from the end of

August to the beginning of October. It occurs also sparingly in winter.

I have seen this Kingfisher at Swatow about the lagoons.

153. *CUCULUS CANORUS*, Linn. [104.]

Foochow. Styan, Ibis, 1887, p. 230.

Shot near Swatow in April.

154. *CUCULUS MICROPTERUS*, Gould. [108.]

Foochow. Styan, Ibis, 1887, p. 230.

Shot near Swatow in September.

155. *CUCULUS SPARVERIOIDES*, Vig. [101.]

Shot on Taiyang hills west of Swatow in April.

156. *EUDYNAMIS MACULATA* (Gm.). [115.]

Common in summer on the Swatow plain, arriving about April and remaining till the end of September. It frequents the banyans and other large trees planted about the villages and farm-houses.

157. *CACOMANTIS TENUIROSTRIS* (J. E. Gray). [99.]

Common at Swatow in the spring, and I presume that they remain throughout the summer. They frequent the gardens on the Foreign Settlement and the mangrove marshes. Their plaintive and most irritating cry is constantly heard during the spring, but the birds, being very shy, are seldom seen.

158. *CENTROPUS SINENSIS*, Steph. [93.]

Foochow. Styan, Ibis, 1887, p. 230.

Resident and very common at Foochow and Swatow.

One, which I bought as a nestling at Foochow on 26th August, 1886, and reared, lived in confinement for over eighteen months. It fed on raw meat and dried "water-boatmen," and was also fond of small birds. The adult plumage was assumed in the following summer, and began first to show in patches in the early spring.

159. *CENTROPUS BENGALENSIS* (Gm.). [94.]

Foochow. Styan, Ibis, 1887, p. 230.

Rare on the Foochow hills, but common enough on those to the west of Swatow.

160. *MEGALEMA VIRENS*, Bodd. [89.]

Foochow. Styan, Ibis, 1887, p. 230.

Not uncommon on the Foochow and Swatow hills.

An adult female example obtained near Swatow at the end of February had the tertiaries of a warm cinnamon colour. The rest of the plumage was normal.

N.B.—Mr. Baun's boy procured him a specimen of a Barbet, which he assured us had been shot near his native place, a city about twelve miles S.E. of Foochow. He told us that ten examples had been shot altogether, but that the bird was very rare and only a summer visitant.

Being unable to go to the place myself, I sent my shooting-boy and taxidermist there at the end of September, but they failed to procure me a specimen, and the natives could give them no information on the subject. Mr. Baun sent his bird at once to Professor Collett, but I did not hear anything more about it.

As it *may* be true that the bird was really shot in the locality stated by the man, and not brought, as I at first suspected, from foreign lands, I give here a rough description of it:—

Size small; *bill* (dried) bluish black; *general colour of body* bright green; *crown of head* bright red; a broad blue *eyebrow*; some red on the *lores*; a yellow spot behind the *ears*; *throat* bright blue; and a bright crimson spot on either side of *breast*.

[This looks very like *M. versicolor*, a common Indo-Malayan species, and the whole affair like a Celestial fraud.—H. H. S.]

III. STRIGES.

161. *BUBO IGNAVUS* (Forster). [58.]

Foochow. De la Touche, Ibis, 1887, p. 469.

An adult specimen was shot since by the native wildfowler Tsung-yang at Foochow.

162. *SCOPS GLABRIPES*, Swinh. [64.]

Scops elegans, Styan, Ibis, 1887, p. 230 (nec Cassin).

Foochow. April, June, July, and November.

A nestling bought on 3rd June, 1885, was successfully reared, and after travelling about with me in China from post to post, was brought to Europe and lived over a year in France. When I came over to England in July 1891, I gave it to the Zoological Society's Gardens, where it died about a week afterwards*.

This bird was always wild when strangers were present, but when alone with me it was extremely tame and even affectionate.

It preferred insect food to any other, but would also eat birds, rats, mice, and butcher's meat.

163. *GLAUCIDIUM WHITELYI* (Blyth). [55.]

Foochow. Styan, *Ibis*, 1887, p. 231.

Very common and resident at Foochow and Swatow.

I have also had several live specimens of this Owl at different times. They are easy to keep in confinement, and eat freely.

One, which I had shot at and wounded one morning while out shooting, deceived me by lying motionless on my hand, till, thinking it was dying, I put it out of pain, as I believed, and laid it in my collecting-basket, where it remained motionless till the evening. On taking out the day's captures to examine them this bird jumped out, to my surprise. It lived for over a year after that, in apparently good health.

164. *GLAUCIDIUM BRODIEI* (Burt.). [56.]

This Owl must occur not far west of Foochow. It was obtained by Swinhoe in the Tingchow mountains and by Mr. Baun at Puch'eng.

165. *NINOX SCUTULATA* (Raffl.). [53.]

Foochow. Styan, *Ibis*, 1887, p. 231.

Not uncommon in May. Rather common at Swatow in April.

I have had several live specimens. They stood confinement well, eating butcher's meat, birds, &c. freely. A pellet cast up by one on the day following its capture consisted of remains of beetles and small mammals (bats or mice).

[* Recorded as *Scops semitorques*, P. Z. S. 1891, p. 669.—ED.]

166. *ASIO ACCIPITRINUS* (Pall.). [62.]

Foochow. Styan, Ibis, 1887, p. 231.

Seen once on the Swatow plain in February.

IV. ACCIPITRES.

167. *PANDION HALIAËTUS* (Linn.). [19.]

Foochow. Styan, Ibis, 1887, p. 231.

Resident at Swatow. Eggs were obtained on the coast in the beginning of summer.

168. *CIRCUS CYANEUS* (Linn.). [39.]

Foochow. Styan, Ibis, 1887, p. 231.

Females and young males are very common about Swatow during the winter.

I obtained only one adult male during the five and a half years I spent in the south.

169. *CIRCUS MELANOLEUCUS* (Forster). [42.]

Foochow. Styan, Ibis, 1887, p. 231.

This Harrier seems to be very rare in the south. At Newchwang, in South Manchuria, it is not uncommon.

[Yet, curiously, it is very common in British Burmah.—H. H. S.]

170. *CIRCUS SPILONOTUS*, Kaup. [43.]

Foochow. Styan, Ibis, 1887, 231.

Common at Swatow from the autumn to the spring.

171. *CIRCUS ÆRUGINOSUS* (Linn.). [44.]

Foochow. Styan, Ibis, 1887, p. 231.

Abundant at Swatow on marshes and lagoons all through the cool season.

172. *BUTEO PLUMIPES* (Hodgs.). [26.]

Foochow. Styan, Ibis, 1887, p. 231.

Common at Swatow in winter.

173. *AQUILA HELIACA*, Savigny. [11.]

Foochow. Styan, Ibis, 1887, p. 232.

A live example procured at Foochow by Mr. G. Siemssen, of Foochow, which I kept at Swatow for over a year, is now living in the Zoological Society's Gardens.

[Mr. de la Touche informs me that all the examples he has seen have been immature birds.—H. H. S.]

174. *AQUILA NÆVIA*, Briss. [13.]

I shot a Lesser Spotted Eagle on the lagoons just behind Swatow on 20th March, 1887, and saw another Eagle in the spring of 1888, and two on the coast in the beginning of February 1889, which I believe were of the same species.

Père David considers this species to be the rarest of the Eagles of China.

[Mr. Styan (Ibis, 1891, p. 487) considers the Spotted Eagles of the Yangtse basin to be *A. clanga*; Père David and Mr. de la Touche put them down as *A. nævia*. They seem to have been oftener seen than obtained. One would expect *A. clanga* to occur in the north of China, and *A. hastata* to be the southern form. Messrs. de la Touche and Styan will do well, on their return to China, to devote some attention to this question.—H. H. S.]

175. *NISAËTUS FASCIATUS* (Vieill.).

Foochow. Styan, Ibis, 1887, p. 232.

176. *HALIAËTUS ALBICILLA* (Linn.). [15.]

I saw a good many Sea-Eagles at Foochow in the autumn of 1886, which were probably of this species. Most of them were flying high overhead, and evidently going south, but several were seen about the river, some of them at fairly close quarters. Neither I nor any of the men who used to shoot for me were able to obtain a specimen.

A Sea-Eagle seen on the Swatow coast on 24th July was probably either this Eagle or an immature *H. leucogaster*.

177. *HALIAËTUS LEUCOGASTER* (Gm.).

Foochow. Styan, Ibis, 1887, p. 232.

The immature example mentioned by me (Ibis, 1887, p. 469) as being perhaps *H. albicilla* turned out to be an immature *H. leucogaster*. It was shot on the 2nd November. I saw a Sea-Eagle at Pagoda anchorage in July 1886, which was also, I believe, of the same species.

178. *SPILORNIS CHEELA* (Lath.). [30.]

Foochow. Styan, Ibis, 1887, p. 233.

179. *BUTASTUR INDICUS* (Gm.). [25.]

Foochow. Styan, Ibis, 1887, p. 233.

180. *ASTUR PALUMBARIUS* (Linn.). [33.]

One shot on the hills west of Swatow in January.

181. *ACCIPITER NISUS* (Linn.). [38.]

Foochow. Styan, Ibis, 1887, p. 233.

I must have overlooked the Sparrow-Hawk at Swatow, as I find I have not noted it as occurring at that port. It is probably found on the wooded hills.

182. *ACCIPITER NISOIDES*, Blyth. (See J. H. Gurney, Ibis, 1887, p. 362.) [? 37.]

Accipiter virgatus, Styan, Ibis, 1887, p. 233.

Foochow; spring and autumn. Swatow; two live specimens obtained in spring.

183. *FALCO PEREGRINUS*, Tunst. [47.]

Foochow. Styan, Ibis, 1887, p. 233.

Common at Swatow throughout the cool season.

A Peregrine attended me on several occasions while shooting on the sands near the mouth of the River Min, and once struck a bird not far from me which I had slightly wounded. Another, near Swatow, nearly carried off a wounded Teal which was making off. It only succeeded in ripping it up, striking the bird as it was scrambling up a muddy bank in front of us.

184. *FALCO SUBBUTEO*, Linn. [48.]

Foochow. Styan, Ibis, 1887, p. 233.

Obtained from Taiyang hills, Swatow, in April, and noticed near Swatow in autumn.

185. *FALCO REGULUS*, Pall. [49.]

Foochow. Styan, Ibis, 1887, p. 233.

Obtained in winter in the hill country west of Swatow.

186. *FALCO TINNUNCULUS*, Linn. [52.]

Foochow. Styan, Ibis, 1887, p. 233.

Abundant at Foochow and Swatow during the cool season. A Kestrel which had established itself in the open verandah of the Customs Bungalow at Double Island, near Swatow, seemed to live altogether upon fish, judging from the castings which strewed the floor under its night-quarters. It probably stole them from the fishermen near at hand.

187. *MICROHIERAX MELANOLEUCUS*, Blyth. [45.]

Microhierax sinensis, Styan, Ibis, 1887, p. 234.

Microhierax chinensis, de la Touche, Ibis, 1887, p. 470.

Mr. Seebohm (P. Z. S. 1891, p. 345) considers that "the validity of this species (*M. chinensis*, A. Dav.) must be regarded as very doubtful;" and Mr. H. H. Slater, who compared one of my specimens with those in the British Museum, was unable to detect any difference between it and those from Assam.

This little Hawk is doubtless a resident in the Foochow district, but as yet has been found only some way up the river. It was obtained by Père David in Kiangsi, and Père Heude told me that he knew of a place (in Kiangsi, I believe) where the bird was common.

188. *MILVUS MELANOTIS*, T. & S. [21.]

Foochow. Styan, Ibis, 1887, p. 234.

Also abundant at Swatow. Three eggs were taken from a nest, which was placed on a rock at Double Island, in early spring.

189. *HALIASTUR INDUS* (Bodd.). [20.]

Foochow. Styan, Ibis, 1887, p. 234.

V. STEGANOPODES.

190. *PELECANUS PHILIPPENSIS*, Briss. [769.]

Common on the Foochow coast near the mouth of the River Min all through the summer. There are flocks of them always on or about the Meihua sands. I have never heard of Pelicans occurring in the Foochow district in winter.

These Pelicans may be seen all summer in the Swatow bay, sitting on the fishing-stakes, and I have occasionally met with a small flock in winter on the Swatow coast.

They probably breed near the above-mentioned localities, but I was never so fortunate as to find any of the breeding-places.

191. *PHALACROCORAX CARBO* (Linn.). [770.]

Common at Foochow and Swatow throughout the winter and spring.

At Foochow the Cormorant is employed for fishing purposes. I once met a couple of men who were fishing with Cormorants. They were on a narrow raft made of four or five bamboos, the front ends of which were curved upwards. In the middle of the raft there was a basket for holding the fish; the birds sat on the edge of the raft in front, and the owner stood up behind, armed with a long bamboo, which he used for paddling himself down the stream. The Cormorants had wisps of straw, or some such material, round their necks, instead of rings, to prevent them from swallowing the fish.

192. *ATTAGEN MINOR* (Gm.). [772.]

One seen on the Foochow coast in July. It is occasionally observed at Swatow in the summer. I once saw one in the bay, not far from the harbour. A young male shot on the Swatow coast on 24th July measured 739 millim. *Iris* brown; *bill and pouch* light bluish grey; *eyelids* grey, with a black streak along them; *feet* light bluish pink.

VI. HERODIONES.

193. *ARDEA CINEREA*, Linn. [626.]

Resident. Common at Foochow and Swatow in winter. At Foochow during the summer I saw them only on the coast. My men told me of a place where they breed, not far from the mouth of the River Min. I did not note their summer-quarters at Swatow, but I have no doubt that they breed there also.

194. ARDEA PURPUREA, Linn. [627.]

Occasionally seen near Foochow in April, and once obtained in October.

195. HERODIAS ALBA (Linn.). [628.]

Passes Foochow and Swatow in spring and autumn. Specimens shot in October had entirely yellow bills; others shot in March and April had dark green bills; but two females, shot on 24th March and 14th April, had yellow bills, tipped with green. I shot a young bird at Foochow on the 26th of August.

196. HERODIAS INTERMEDIA, Wagl. [629.]

Seems a rare bird both at Foochow and Swatow. One shot at Foochow on the 7th of May measured 740 millim.; soft parts as follows:—*iris* pale yellow; *bill* yellow, with dark green tip; *skin at base of bill* bright yellow; *legs and feet* black.

197. HERODIAS GARZETTA, Linn. [630.]

Abundant at Foochow from the middle of March to the autumn. A few winter in the district. At Swatow it occurs commonly throughout the winter, but disappears during the summer.

198. HERODIAS EULOPHOTES, Swinh. [631.]

This bird is a rarity at Foochow, where I only obtained a few specimens one year in April and May. I suppose that it breeds in the district; but though I have looked out for it in summer, I never saw any.

At Swatow it is very abundant during the summer, but goes south for the winter.

The colours of the soft parts in this species are as follows:—*iris* pale yellow; *bill* yellow; *skin between the eye and nostril* bright blue; *legs and basal half of feet* black; *extremities of feet* yellow; *claws* greyish red.

199. BUBULCUS COROMANDUS (Bodd.). [632.]

Abundant at Foochow and Swatow during the summer.

200. ARDEOLA PRASINOSCELES, Swinh. [635.]

Very common and resident at Foochow and Swatow.

At Foochow, during the autumn, small parties, composed of young birds or adults in winter plumage, frequent the paddy-fields and the banks of ponds and creeks. In winter they are found singly about ponds or the banks of creeks.

201. ARDETTA FLAVICOLLIS (Lath.). [639.]

Abundant at Foochow during the summer. Not noticed (probably overlooked) at Swatow.

I did not notice this Heron congregating together for breeding purposes, but I believe that they nest here and there on large trees not far from the villages.

202. ARDETTA SINENSIS (Gm.). [642.]

Foochow and Swatow in summer.

203. ARDETTA CINNAMOMEA (Gm.). [640.]

Abundant at Foochow in autumn. I did not see it there either in the spring or during the summer. I obtained specimens at Swatow in spring.

204. ARDETTA EURHYTHMA, Swinh. [641.]

A few obtained at Foochow in autumn.

205. BUTORIDES JAVANICUS (Horsf.). [633.]

Swatow in spring and probably also at Foochow; but I never obtained any in the latter district, though my shooting-boy told me that he had seen this bird on the marshy islands at the mouth of the River Min.

206. NYCTICORAX GRISEUS (Linn.). [634.]

Common and resident at Foochow and Swatow.

There are many heronries round about Foochow. Generally they are placed near a village, and the natives, probably from some superstitious motive, will not allow them to be interfered with. I once was allowed to visit one of these places, but not until I had promised not to disturb the birds. This heronry was established on a clump of pine-trees which covered a hillock overtopping the village. The nests were placed on the summits of the pines, and numbers of Herons were flying about or sitting on the nests. The species noticed were *N. griseus*, *Herodias garzetta*, and *Bubulcus coromandus*.

207. *BOTAURUS STELLARIS* (Linn.). [638.]

Foochow in winter; rather uncommon.

208. *IBIS MELANOCEPHALA* (Lath.) (?). [648.]

According to the Foochow wildfowlers, a white Ibis occurs on the Foochow coast in autumn and spring. My shooting-boy told me that he saw one on the Swatow coast on the 31st of December.

209. *TANTALUS LEUCOCEPHALUS*, Gm. [647.]

Summers on the Foochow coast. It is occasionally seen in couples on the mud- or sand-banks near the mouth of the River Min.

I saw a good many on the marshes near Swatow in September 1887.

210. *PLATALEA MINOR*, T. & S. [646.]

Foochow coast in summer and autumn. It is common in the neighbourhood of Swatow all through the winter.

VII. ANSERES.

211. *CYGNUS*, sp. inc.

Swans have been shot near Foochow, but appear to be very rare in the district. I did not see any there or at Swatow, but my shooting-boy told me that he saw two on the Swatow coast on the 31st December.

212. *ANSER SEGETUM* (Gm.). [702.]

Abundant at Foochow and Swatow in winter. The Geese arrive at Swatow about the end of November and have left before the end of February. They arrive at Foochow towards the end of October.

213. *ANSER ERYTHROPUS* (Linn.). [705.]

Foochow wildfowlers have told me that they had occasionally shot small Geese, which, from their description, appear to have been of this species.

214. *ANSER CINEREUS*, Meyer. [703.]

Foochow wildfowlers have told me that they have also shot this Goose.

215. *ANSER CYGNOIDES*, Linn. [706.]

A Goose, of which the description answers to that of the Swan-Goose, was shot at Foochow by my shooting-boy.

This and the two preceding species are evidently rare at Foochow. For my own part, the only Geese I ever saw or shot either at Foochow or at Swatow were Bean-Geese.

216. *NETTAPUS COROMANDELIANUS* (Gm.). [718.]

Three examples obtained in October and November at Foochow. It seems to be rather rare in the district.

217. *TADORNA CORNUTA* (Gm.). [712.]

Winters at Foochow, where it is rather uncommon. It is abundant about Swatow, large flocks being seen in the bay during the winter.

218. *CASARCA RUTILA* (Pall.). [713.]

I obtained one specimen at Foochow in November 1884. It is a very rare Duck in that locality.

219. *ANAS BOSCAS*, Linn. [710.]

Foochow and Swatow in winter.

220. *ANAS ZONORHYNCHA*, Swinh. [711.]

Resident at Foochow and Swatow; fairly abundant in winter. I found nests and eggs on a rocky islet outside the Swatow Bay in May and June, and some eggs on the point of hatching were taken in July, the young ducklings coming out of the shell in the boat. The nests I found were hidden among the low brushwood and rank grasses on the summit of the island.

221. *QUERQUEDULA CRECCA* (Linn.). [721.]

Very abundant at Foochow and Swatow in winter. They arrive at Foochow at the end of September. Most of them leave in March, but very few being seen in April.

Numbers of this and the following three species are netted in the Foochow district and sold alive for food. The nets employed to catch them have rather wide meshes; they are set upright across the marshy islands in the river; the birds flying low at night are caught by the neck, and the natives, who are on the watch, secure them at once.

222. QUERQUEDULA CIRCIA (Linn.). [720.]

Abundant at Foochow from the end of February to the late spring. They pass again towards the middle of September, but not in such numbers. This Teal also passes Swatow in spring and autumn.

I procured at Foochow a beautiful semi-albino variety of this species. It is very pale, and suffused all over with a pinkish tinge. The soft parts were as follows:—*iris* brown; *bill* dark pink; *legs* flesh-colour; *webs* tinged with blue.

223. EUNETTA FALCATA (Pall.). [723.]

Common in winter at Foochow and Swatow. Especially abundant in the spring. One shot at Foochow as late as 30th April.

224. EUNETTA FORMOSA (Georgi). [722.]

Abundant in winter at Foochow. Occurs also in winter at Swatow.

225. DAFILA ACUTA (Linn.). [714.]

Common at Foochow and Swatow throughout the winter.

226. MARECA PENELOPE (Linn.). [715.]

Winters at Foochow and remains till the beginning of May. Common at Swatow in winter.

227. SPATULA CLYPEATA (Linn.). [717.]

A common winter Duck at Foochow and Swatow; remains late at Foochow.

228. AIX GALERICULATA (Linn.). [719.]

Occasionally shot near Foochow. It is said by the local wildfowlers to be common on the river near Yen-ping-fu.

229. FULIGULA CRISTATA (Steph.). [731.]

Common at Foochow in winter.

230. FULIGULA MARILA (Linn.). [729.]

Abundant at Foochow in winter. I did not shoot any Sea-Duck at Swatow, but I have no doubt that most of the Chinese species are to be found there, either in the bay or on the coast.

The Swatow Ducks are generally very bad eating; but

those shot near Foochow are usually very good. As for the Geese, at both ports they are as a rule excellent.

231. *FULIGULA FERINA* (Linn.). [727.]

Foochow; only one specimen obtained.

232. *CLANGULA GLAUCION* (Linn.). [725.]

Foochow; only once obtained.

233. *MERGUS MERGANSER*, Linn. [734.]

Said by natives to be common up the River Min in the Yen-ping-fu district.

234. *MERUS SERRATOR*, Linn. [736.]

Abundant at Foochow and Swatow in winter. Generally seen in small flocks of from six to eight individuals.

235. *MERGELLUS ALBELLUS* (Linn.). [733.]

Foochow. One shot on 23rd December, 1887.

VIII. COLUMBÆ.

236. *CHALCOPHAPS INDICA* (Linn.) (?). [555.]

Some green Pigeons, probably of this species, were shot by Professor Poliakoff, a Russian naturalist, in 1884, on the hills near the mouth of the River Min, Foochow. I was unable to procure a specimen.

237. *TURTUR RUPICOLA* (Pall.). [558.]

Foochow and Swatow. Common on the hills.

238. *TURTUR CHINENSIS* (Scop.). [559.]

Abundant at Foochow and Swatow.

239. *TURTUR HUMILIS* (Temm.). [561.]

Foochow and Swatow. It is migratory, many breeding in the Foochow district on the tall pines. A few remain there in winter.

IX. GALLINÆ.

240. *PHASIANUS TORQUATUS*, Gm. [590.]

Pheasants are tolerably common on the hills near Foochow and Swatow, but good shooting can only be had at a certain distance from the ports.

241. *EUPLOCAMUS NYCTHEMERUS* (Linn.). [598.]

Said to be not uncommon on the Yen-ping-fu hills west of Foochow. A Foochow shooting-man told my men he had met with this species.

242. *CERIORNIS CABOTI*, Gould. [601.]

A live Tragopan was brought down to Foochow one winter. This species has never to my knowledge been shot near Foochow; but I suspect that it may occur not very far west of that city, probably on the Yen-ping-fu hills.

243. *FRANCOLINUS CHINENSIS* (Briss.). [579.]

Foochow and Swatow hills. Kept by Chinese bird-fanciers in small bamboo cages.

244. *BAMBUSICOLA THORACICA* (Temm.). [569.]

Foochow hills, and, according to my shooting-boy, also found in the hills west of Swatow, but much less common there than at Foochow.

This Partridge is also a favourite cage-bird with the Chinese. The call, when heard at close quarters, is perfectly diabolical.

245. *COTURNIX COMMUNIS*, Bournat. [573.]

Common enough at Foochow and Swatow during the cool season.

246. *TURNIX BLANFORDI*, Blyth. [576.]

Winters at Foochow, but not in any great abundance.

247. *EXCALFACTORIA CHINENSIS* (Linn.). [574.]

A pair of this beautiful little Quail was obtained by my shooting-boy in the country west of Swatow, in January.

248. *RALLUS INDICUS*, Blyth. [699.]

Foochow and Swatow in winter, but not particularly common.

249. *POZZANA ERYTHROTHORAX* (T. & S.). [695.]

Summers at Foochow, and obtained there till the middle of November. Shot near Swatow in April.

Four young birds in down were brought to me at Foochow on the 29th September, 1885. They were jet-black, with



J. G. Kinsman del et lith.

Musgrave, fecit. imp.

GALLINULA COCCINEIPES.

reddish-black legs. The bill was pinkish at the base, black in central part, and pink at the tip. One of them was yet alive, but, though it ate a little boiled rice, it died next morning. Its cry was like that of a chicken in down, varied now and then by a plaintive trill.

250. *Porzana pygmaea* (Kaup). [696.]

Procured at Foochow in March, April, and November.

251. *Gallinula cozzineipes*. (Plate XII.)

Two examples of this new species were shot by my shooting-boy. One, the female described by Mr. Slater ('Ibis,' 1891, p. 44), was shot on the banks of a mountain-torrent in the interior, to the west of Swatow; the male was obtained in the Taiyang hills.

Père Heude, when he showed me the specimen of this species in the Sikawei Museum, told me that it had been given to him by Swinhoe.

252. *Gallinula chloropus* (Linn.). [693.]

Common at Foochow in spring.

253. *Erythra phoenicura* (Forst.). [694.]

Resident and abundant at Foochow and Swatow.

254. *Gallinula cinerea* (Gm.). [692.]

Very common at Foochow throughout the hot season.

255. *Fulica atra*, Linn. [700.]

Foochow and Swatow in winter; not particularly common.

256. *Grus cinerea*, Bechst. [620.]

Small flocks of this Crane occur near Swatow during the winter. Foochow native wildfowlers say that it is found in the Foochow district, and some of them have assured me that they have also seen white Cranes (*G. leucogeranus*?).

257. *Hydrophasianus chirurgus* (Scop.). [690.]

Obtained at Foochow in spring in partial breeding-plumage and in October in winter plumage.

X. GRALLÆ.

258. *Glareola orientalis*, Leach. [617.]

Passes Foochow in April and May. Obtained also during

the autumn migration on the 19th of August, the 2nd of September, and in October. It is not a common migrant. I believe that I saw some near Swatow in September.

259. *VANELLUS CRISTATUS*, Mey. & Wolf. [604.]

Common at Foochow and Swatow during the winter.

260. *CHETTUSIA CINEREA* (Blyth). [605.]

Occurs occasionally at Foochow in the spring.

261. *SQUATAROLA HELVETICA* (Linn.). [607.]

Common at Foochow and Swatow during migration time.

A few winter on the coast.

262. *CHARADRIUS FULVUS*, Gm. [608.]

Very abundant at Foochow in April and at the beginning of May. It passes again in October, but at that season seems to be less common. It winters at Swatow.

263. *ÆGIALITIS VEREDUS* (Gould). [609.]

Rather scarce. It passes Foochow in March. I shot one at Swatow on the 23rd October out of a flock of Golden Plover.

264. *ÆGIALITIS GEOFFROYI* (Wagl.). [610.]

Passes Foochow in April and May, and again from the end of July to, at least, the end of September. I saw very large flocks on the sands near the mouth of the River Min on the 26th of July, 1886; those shot were all in winter plumage.

265. *ÆGIALITIS MONGOLICA* (Pall.). [611.]

Rather abundant at Foochow in April and May. I shot it also on the coast in September.

266. *ÆGIALITIS PLACIDA* (Gray). [612.]

Foochow in winter. Rather rare.

267. *ÆGIALITIS MINOR* (Mey. & Wolf). [614.]

Passes Foochow from the beginning of March to the beginning of May. It winters at Swatow.

268. *ÆGIALITIS CANTIANA* (Lath.). [615.]

Common in winter at Foochow and Swatow.

269. *ÆGIALITIS DEALBATA*, Swinh. [616.]

Swatow in summer, and probably resident. I found two eggs on a low sand-bank at the beginning of June. One of them was addled, and the other was on the point of hatching. The markings of the former resembled those of the eggs of *Sternula sinensis*; the latter was deep yellow, pencilled all over with numerous brown streaks. There was no nest of any kind, but only a little round hollow in the sand. The egg is 33 millim. in length.

270. *STREPSILAS INTERPRES* (Linn.). [619.]

Passes Foochow in September and October. I shot a male, still in breeding-plumage, at Swatow on the 12th of September.

271. *HÆMATOPUS OSCULANS*, Swinh. [618.]

Not uncommon at Foochow and Swatow in winter.

272. *RECURVIROSTRA AVOCETTA*, Linn. [660.]

Very scarce at Foochow. Two were shot on the coast in the middle of February 1887 by a native wildfowler, who told me that the species was unknown to him. At Swatow the Avocet is not uncommon during the winter.

273. *HIMANTOPUS CANDIDUS*, Bonnat. [661.]

The Stilt is rare at Foochow. I procured specimens in March 1885, on the 20th of October, 1885, and on the 18th of April, 1886.

274. *LOBIPES HYPERBOREUS* (Linn.). [689.]

Two examples of this Phalarope were sent to me from Foochow by the native wildfowler Tsung Yang. I once saw a Phalarope in Swatow bay at the beginning of September; and when travelling down the coast at the beginning of April 1890 I noticed, a few hours before reaching Swatow, large flocks of this bird sitting on the water.

275. *SCOLOPAX RUSTICULA*, Linn. [681.]

The Woodcock is rare in the Foochow district, but a few are shot there every winter by foreigners. It is very scarce indeed on the Swatow hills. I have heard of one or two having been shot on the hills beyond Chao-chow-fu; and one

was shot at the end of February 1889 by my shooting-boy in the Taiyang country.

276. *GALLINAGO SCOLOPACINA*, Bp. [685.]

This is the winter Snipe of Foochow and Swatow. It is more abundant in the latter district, especially during the spring migration.

277. *GALLINAGO STENURA* (Bp.). [684.]

This Snipe is tolerably abundant at Foochow in the spring. It returns towards the middle or end of August, and is common throughout the autumn, a few wintering in the district. It winters at Swatow, but does not seem to be particularly common there.

278. *GALLINAGO MEGALA*, Swinh. [683.]

Arrives at Foochow towards the end of March and remains till the beginning of May. The autumn passage begins about the middle of August, and the birds are fairly abundant throughout September and part of October. At Swatow, strange to say, this Snipe is almost unknown. I only saw one during the two years that I spent at that port; it was shot in April by my shooting-boy some distance up the Keyong River.

279. *RHYNCHÆA CAPENSIS* (Linn.). [687.]

Resident and fairly common in the Foochow district. It also occurs near Swatow, but less commonly, I believe.

280. *TRINGA CRASSIROSTRIS*, T. & S. [671.]

Several obtained on the Foochow coast in September and October.

281. *TRINGA CANUTUS* (Linn.). [672.]

I only saw six specimens of the Knot during the whole time that I was at Foochow. They were shot at the beginning of November.

282. *TRINGA CINCLUS* (Linn.). [675.]

Foochow and Swatow in winter; very abundant.

One in partial breeding-plumage was shot on the Foochow coast at the beginning of August.

283. *TRINGA SUBARCUATA*, *Güldenst.* [677.]

Passes Foochow in April, May, and beginning of June. I obtained a specimen at the beginning of August, but did not notice any later on in the season.

284. *TRINGA ACUMINATA* (*Horsf.*). [673.]

Very abundant on marshy land at Foochow during April and May.

285. *TRINGA RUFICOLLIS*, *Pall.* [676.]

Passes the Foochow district in April and May, and is very abundant. It returns in September. I saw large flocks on the coast at the end of September; those shot were all in winter plumage.

286. *TRINGA SUBMINUTA*, *Midd.*

Obtained at Foochow in April. It does not appear to be abundant.

This Stint may be distinguished from the preceding species, when fresh, by the colour of the legs (which is olive-green), and always by its long hind toe.

287. *TRINGA TEMMINCKI*, *Leisl.* [678.]

Foochow and Swatow in winter. Rather scarce.

288. *TRINGA PLATYRHYNCHA*, *Temm.* [674.]

I saw large flocks of this Wader on the Foochow coast in September. They remain rather late, as I obtained specimens in November.

289. *CALIDRIS ARENARIA* (*Linn.*). [670.]

Foochow coast in autumn from the end of August, and Swatow coast in winter.

290. *TRINGOIDES HYPOLEUCUS* (*Linn.*). [669.]

Resident and common in the Foochow district, and also most probably at Swatow, but I do not remember seeing the bird in summer at that port.

291. *EURYNORHYNCHUS PYGMEUS* (*Linn.*). [679.]

The Spoonbill Sandpiper seems to be a regular autumn migrant on the Foochow coast, but it is not abundant. I obtained specimens at the end of September, in October, and in November.

292. *TOTANUS GLOTTIS* (Linn.). [662.]

Very common at Foochow from the early autumn to the late spring, and likewise at Swatow throughout the winter.

293. *TOTANUS FUSCUS* (Linn.). [664.]

Obtained at Foochow in October, November, February, and on the 18th of April. It is not a common Sandpiper in the district.

294. *TOTANUS CALIDRIS* (Linn.). [665.]

Not particularly common at Foochow. I obtained specimens in that district in May, September, and October. At Swatow it is extremely abundant, and passes in March and April and in the autumn.

295. *TOTANUS GLAREOLA* (Linn.). [666.]

Abundant in March and April on the paddy-fields about Foochow; it passes again in September and October. It is also common in spring on the Swatow marshes.

296. *TOTANUS OCHROPUS* (Linn.). [667.]

Common in winter at Foochow and Swatow. Arrives at Foochow at the beginning of September.

297. *TOTANUS INCANUS* (Gm.). [668.]

Uncommon, both at Foochow and at Swatow. I obtained it at Foochow from the end of August to the middle of October, and at Swatow on the 12th September.

298. *TEREKIA CINEREA* (Güldenst.). [659.]

Passes along the Foochow coast from the beginning of August to the end of October.

299. *LIMOSA UROPYGIALIS*, Gould. [657.]

A solitary specimen shot on the Swatow coast on 2nd January.

300. *LIMOSA MELANUROIDES*, Gould. [658.]

Obtained on the Foochow coast at the end of August and beginning of September.

301. *EREUNETES TACZANOWSKII* (Verr.). [680.]

One shot on the sands, Foochow coast, on 22nd Sep-

tember; it was in company with a flock of *Tringa crassirostris* and other Stints.

302. *NUMENIUS LINEATUS*, Cuv. [654.]

Very abundant at Foochow and Swatow throughout the winter.

303. *NUMENIUS CYANOPUS*, Vieill. [655.]

One obtained at Foochow on 22nd October. I saw two at Swatow in the spring of 1887.

304. *NUMENIUS VARIEGATUS*, Scop. [653.]

Passes Foochow in April and May and again during the autumn migration from the end of July. It is also common about Swatow in spring and autumn.

305. *NUMENIUS MINUTUS*, Gould. [656.]

Passes Foochow in the latter half of April, and also in the autumn, as I shot one on the coast on the 22nd of September. According to the native wildfowlers, it is common during the spring passage.

XI. TUBINARES.

306. *DIOMEDEA ALBATRUS*, Pall. [744.]

Several examples of this species were shot on the Foochow coast by wildfowlers in the spring of 1887.

In March 1889 I saw a great many Albatrosses, both dark brown and white, off the coast between Swatow and Amoy.

XII. GAVIÆ.

307. *LARUS CANUS*, Linn. [747.]

Common on the Foochow coast and at Swatow in winter.

308. *LARUS CRASSIROSTRIS*, Vieill. [749.]

Abundant and resident on the Foochow and Swatow coasts.

309. *LARUS CACHINNANS*, Pall. [750.]

Foochow and Swatow coasts in winter and spring. I shot a large Gull on the Swatow coast at the beginning of June which I took to be of this species. I unfortunately allowed the skin to be spoiled and did not get it identified. As far as I

can remember the bird appeared to be immature; the upper parts were extremely pale, and the plumage was much worn.

310. *LARUS RIDIBUNDUS*, Linn. [752.]

Foochow and Swatow during the cool season. Very abundant at the latter port in spring.

311. *LARUS SAUNDERSI* (Swinh.). [754.]

One in summer dress obtained at Foochow on 17th March and two in winter plumage on 21st November. It is scarce in the district. It is common at Swatow in the spring. I shot specimens there in winter and summer plumage on 13th March.

312. *SYLOCHELIDON CASPIA* (Pall.). [755.]

I noticed this Tern on the Foochow coast in September, and obtained specimens in November. It is common at Swatow, where it may be seen all the year round. I saw large flocks on the coast near Namoa Island in winter.

313. *THALASSEUS BERGII* (Licht.). [756.]

Foochow and Swatow coasts in summer. Not abundant.

314. *HYDROCHELIDON LEUCOPTERA* (Schinz). [758.]

Foochow in May. Seen at Swatow in March and April.

315. *HYDROCHELIDON HYBRIDA* (Pall.). [757.]

Foochow in May.

316. *STERNA ANGLICA*, Mont.

Obtained at Foochow in April, May, September, and November, and at Swatow in May and September. It is not uncommon, especially at Swatow.

317. *STERNA FLUVIATILIS*, Naum. [759.]

Very abundant on the Swatow coast in summer. It breeds on the rocky islets in company with *Sterna melanauchen*, and leaves at the end of the warm season.

I believe that this species also occurs in summer on the Foochow coast.

318. *STERNA LONGIPENNIS*, Nordm. [760.]

Some immature Terns obtained at Foochow and Swatow at the end of summer are probably of this species.

This Tern breeds in the marshy flats near Yingtze (Newchwang), South Manchuria.

319. *STERNA MELANAUCHEN*, Temm. [761.]

This Tern is very abundant on the Swatow coast during the warm season, breeding in colonies on the rocky islets outside the Swatow bay.

320. *STERNULA SINENSIS*, Gm. [762.]

Also a summer visitant to Swatow. I found small colonies breeding on the sands at the entrance of the bay, and obtained eggs in June and at the beginning of July, as well as a young bird in down, just out of the egg, which I reared and kept for about six weeks, feeding it on small fishes. The nests were simply little round hollows in the sand with a few twigs or sticks in them.

I obtained this Tern at Foochow in May, at the end of August, and in September.

XIII. PYGOPODES.

321. *COLYMBUS SEPTENTRIONALIS*, Linn. [737.]

A winter bird at Foochow and Swatow. It seems especially common in the latter district.

322. *PODICEPS CRISTATUS* (Linn.). [741.]

Obtained at Foochow in the early spring. I believe that I saw one on the coast near Swatow in January.

323. *PODICEPS CORNUTUS* (Gm.). [740.]

Foochow in winter.

324. *PODICEPS NIGRICOLLIS* (Brehm). [739.]

Shot at Foochow in November, at Swatow in early spring.

325. *TACHYBAPTES FLUVIATILIS* (Tunstall). [738.]

Abundant at Foochow and Swatow throughout the winter. I shot one near Foochow as late as 13th May.

XLI. *On the Birds of East Prussia.*

By ERNST HARTERT.—Part II.

[Concluded from p. 372.]

MICROPUS APUS (L.).

Common. Arrives in East Prussia later than in Western Germany. In the vast forests of the south-eastern parts they are often found breeding in hollow trees.

CAPRIMULGUS EUROPÆUS, L.

Common, breeding all over the province.

GECINUS VIRIDIS (L.).

Commonly breeding; eggs taken in May. Eastern specimens seem to have larger bills as a rule, but I have not sufficient material at hand to make out whether this is constant or not.

GECINUS CANUS (Gm.).

This Woodpecker, which is so common in Hesse and other parts of Germany, is extremely rare in Prussia. I have only seen one, killed near Blandau in December 1877.

DENDROCOPUS MAJOR (L.).

Very numerous everywhere. As a rule the bills of East-Prussian specimens are rather strong.

DENDROCOPUS MEDIUS (L.).

By no means rare in the woods, but not found everywhere.

DENDROCOPUS MINOR (L.).

Is found in many localities, except in the vast pine-forests, but is rare.

DENDROCOPUS LEUCONOTUS (Bechst.).

Very rare, and only observed in the vast pine-forests of the south-east. As it is no doubt a stationary bird, it must necessarily breed in East Prussia.

PICUS MARTIUS, L.

The Great Black Woodpecker is still rather numerous in the great forests of East Prussia. It makes its large nest-

holes chiefly in old pine-trees, but I have found them also in oaks, *Populus tremula*, and *Alnus glutinosa*. The eggs are laid in the middle of April.

LYNX TORQUILLA, L.

Rather common. Eggs generally not found much before June.

MEROPS APIASTER, L.

Has occurred as a straggler in East Prussia. Two specimens shot in Samland are in the Königsberg Museum. Klein has also mentioned the Bee-eater as occurring in Prussia.

ALCEDO ISPIDA, L.

The Kingfisher is rather rare, and nowhere so common as in the western parts of Germany.

CORACIAS GARRULA, L.

Not rare in suitable localities, arriving from the end of April to nearly the middle of May. Its food consists chiefly of beetles, such as species of *Geotrupes*, *Melolontha*, *Prionus*, and others, but especially of different species of *Geotrupes*. The *Scarabæidæ* of the genus *Copris*, and other genera allied to *Geotrupes*, *Copris*, &c., are the principal food of all *Coraciidæ*. I have dissected the stomachs of several species of *Coracias* and of *Eurystomus afer* in Africa, as also of *Eurystomus orientalis*, *Coracias indica* and *affinis* in India, and I have always found them containing a similar food.

UPUPA EPOPS, L.

Not rare.

CUCULUS CANORUS, L.

Common. Does not arrive before the 20th of April.

STRIX FLAMMEA, L.

Not rare. Generally breeds in spring, chiefly in May, but occasionally in autumn. Several such occurrences have been published, one of the first, if not the first of all, by Graf Roedern in the J. f. O. I once found nestlings on the 6th of November not far from Königsberg.

GLAUCIDIUM PASSERINUM, L.

Very rare, but has been shot at different times of the year. As this Owl is a stationary bird all the year round, there can be no doubt that it breeds in East Prussia, although I cannot prove the fact. It has no doubt been commoner in times past, when old trees were more numerous than nowadays.

GLAUCIDIUM NOCTUA (Retz.).

I unite the genera *Carine* and *Glaucidium* into one genus because there are many foreign species in which the characters used to separate them are not easily recognizable.

The present species is not very common in Prussia, but well known. I once found a nest in a hole of a river-bank. Eggs are laid in the middle of May.

NYCTALA TENGMALMI (Gm.).

This Owl has been shot in several months of the year. As it seems to be a resident bird all the year round, it probably breeds within the limits of North-eastern Germany, but this has not yet been proved.

SURNIA ULULA (L.).

Chiefly observed in October. Very rare in many years, but common in others. In all probability it has been a regular breeder in North-eastern Prussia in times past. In our days this must occur very seldom, although it may do so sometimes. This Owl breeds in the Russian Baltic provinces, not very far from East Prussia.

NYCTEA SCANDIACA (L.).

Occurs every winter in East Prussia; it is generally very rare, but sometimes rather numerous. According to Brehm ('Thierleben'), it was found breeding in 1843 in the district of Ragnit.

SYRNIUM URALENSE (Pall.).

This rare Owl breeds regularly in some of the north-eastern forests of East Prussia. The eggs are deposited in the nests of Buzzards and other larger birds of prey or in hollow trees. The eggs are laid in April, mostly in the first half of the month. The cry of the male is similar to the loud

barking of a large dog; that of the female is an unmelodious screech. (Cf. Schmidt, J. f. O. 1885, p. 82; Hartert, 'Feinde der Jagd,' p. 81 (1885); id. Mitth. orn. Ver. Wien, 1887.)

SYRNIUM LAPPONICUM (Retz.).

Has been killed, in 1832, in the district of Gumbinnen. It is of very rare occurrence in the eastern parts of Germany.

SYRNIUM ALUCO (L.).

Common.

ASIO ACCIPITRINUS (Pall.).

Extremely common during its migration, especially in October, less numerous in spring. It undoubtedly breeds regularly in East Prussia, but in very small numbers.

ASIO OTUS (L.).

Breeds in East Prussia, but is more numerous during migration. The eggs, which are always deposited in old nests of Crows or other birds, are usually found in April, but the time when they are laid is very uncertain. They are sometimes found rather late in May, sometimes early in April or even in March.

BUBO BUBO (L.).

Is absent from many parts of the pine-forests of the south-east, but not rare in the north-eastern parts. The eggs are sometimes deposited on the ground, but usually in old nests of the larger birds of prey. The young birds are often reared by the foresters and sold for use in the "Krähenhütte," to attract the crows, ravens, and birds of prey—an interesting sport much in favour in many parts of Germany.

FALCO PEREGRINUS, L.

A regular breeder in all the pine-forests of larger size, rarer in other woods. It arrives at its breeding-places early in March, and I have found an egg in the last days of March, but the clutch is generally not ready before April. As rocks are entirely absent from East Prussia, the Peregrine always breeds in trees, almost always in pines. The eggs are usually

three in number, but in East Prussia four are often found. According to my observations the male assists the female in incubation.

FALCO ÆSALON, Tunst.

Not very rare during the migration-period, chiefly in October. I did not meet with it in the middle of the winter.

FALCO SUBBUTEO, L.

Rather scarce. Breeds very late, eggs not being found before the middle of June.

CERCHNEIS TINNUNCULUS (L.).

Very common. Exceptionally a pair remains during the winter, then frequenting old towers or castles.

CERCHNEIS VESPERTINA (L.).

Generally a rare visitor during migration, but sometimes occurring in quantities. In September 1887 great numbers passed through East Prussia. I saw at least a hundred myself, and specimens were obtained in many parts of East Prussia. All those that I observed were in young plumage; not a single old bird was obtained or seen, so far as I could make out. In the following spring, on the 9th and 10th of May, I saw a troop of five old females and one male, but they remained a few days only and did not breed. In 1884 I saw a pair late in May and during the first days of June, but they also did not breed there. Probably this species passes through much more frequently than it is supposed to do.

PANDION HALIAËTUS (L.).

Not rare in many suitable localities, but not found everywhere. Eggs are laid in the second half of May.

PERNIS APIVORUS (L.).

A somewhat rare bird in East Prussia, but breeds regularly.

MILVUS MILVUS (L.).

Not rare. Arrives in March and lays its eggs in April and May. If possible it takes an old nest of another bird,

but if it does not succeed in finding one it builds a new nest of rather small size, which being used for many subsequent years grows by-and-by into a very large "horst."

MILVUS MIGRANS (Bodd.).

Commoner than the former in watery districts, especially near the Frische Haff, in the districts of Johannisburg, Sensburg, Allenstein, Lötzen, and others. Returns at the end of March or in April. The breeding-time varies much, but the eggs are generally laid much later than those of *Milvus milvus*. This species, as well as the last-named, is extremely fond of lining the nest with coloured rags and papers, often not in the best and cleanest condition.

BUTEO BUTEO (L.).

The Buzzard is extremely common. I have found full clutches of eggs at the end of March, but generally they are not full before April. It seems likely that *Buteo desertorum* occurs as an accidental straggler, but supposed specimens of it should always be examined by an experienced ornithologist.

ARCHIBUTEO LAGOPUS (Brünn.).

Very numerous from October to April, especially in more open districts. Seems to avoid the interior of large forests. This bird is a Buzzard, and by no means an Eagle. All its movements, its bill and feet, are those of a true Buzzard. Even at a distance when gliding through the air it can be recognized as a Buzzard by the wings being held above the horizontal line.

HALIAËTUS ALBICILLA (L.).

Often seen on the coasts in winter, but also still breeds occasionally.

AQUILA CHRYSAËTUS (L.).

Often shot in winter, rarely in summer. There can be little doubt that even at the present day a few pairs breed here and there in the large forests of the eastern parts of the province, but it is everywhere vigorously persecuted by the forester's gun.

AQUILA POMARINA, Brehm.

As regards the name of this Eagle, I think that "*nævia*,"

maculata, and the other older names are more or less doubtful, and that we do best to accept Brehm's term, which doubtless refers to the small North-German form.

This Eagle is found everywhere in the greater forests of East Prussia, and is one of the commonest birds of prey.

It arrives at the beginning of April. Eggs are laid in East Prussia from the first days of May until the middle of the month, and sometimes later. The number of eggs is mostly two, but very often one only is found. It has been stated that this bird occasionally lays three eggs, but I have never found more than two.

The large nest is placed on different kinds of trees, on pines and firs as well as on oaks and other foliated trees, generally not very high above the ground.

AQUILA CLANGA, Pall.

The Larger Spotted Eagle is of very rare occurrence in East Prussia, but specimens have been procured from time to time, and it breeds exceptionally in the province.

CIRCAËTUS GALLICUS (Gm.).

This bird is rare in East Prussia, but it breeds regularly in different parts of the province, especially in the southeastern district, where lakes abound.

ACCIPITER NISUS (L.).

A permanent resident.

ASTUR PALUMBARIUS (L.).

Found during the whole year, but less common than the last species.

CIRCUS SWAINSONI, Smith.

Often shot on migration in autumn; in most years very rare, but rather numerous in 1890 and less so in 1891.

CIRCUS CYANEUS (L.).

More numerous, and especially in September. Breeds in small numbers.

CIRCUS CINERACEUS (Mont.).

This species is rather more frequently met with than *Circus*

swainsoni. It apparently breeds occasionally, as I have seen specimens that were shot in summer; but if it breeds it is certainly a rare bird.

CIRCUS ÆRUGINOSUS (L.).

Common in swampy districts.

VULTUR MONACHUS (L.).

A specimen was killed in June 1881. Known as an accidental straggler even more to the north.

GYPS FULVUS (Gm.).

Several times as an accidental straggler. Killed in the spring of 1844, in 1851, and in June 1881.

TURTUR TURTUR (L.).

Generally not rare.

COLUMBA CENAS, L.

Generally very common. Arrives late in March or about the middle of that month, and leaves the country in October. It does not winter in East Prussia.

COLUMBA PALUMBUS, L.

In most localities common. It does not winter in this country, but it often does in Western and Southern Germany.

TETRAO BONASIA, L.

Not rare now in many parts of East Prussia, especially in the forests of the east, but is said to have been much more numerous formerly. I have proofs that it was once frequently met with in certain forests where it is not found now.

TETRAO TETRIX, L.

Although still not rare in many forests was no doubt much more numerous in former times.

TETRAO UROGALLUS, L.

Only found in a few large forests. Hybrids between *T. urogallus* and *T. tetrix* have been shot a few times.

LAGOPUS LAGOPUS (L.).

This species was commoner in former times, but became very rare after the drying up and cultivation of the large

moors. At present it is, so far as I could make out, only met with on the great moor in the district of Dingken, and in small numbers. This is the only place in Germany where it occurs.

COTURNIX COTURNIX (L.).

Not numerous in East Prussia.

PERDIX PERDIX (L.).

Common, but suffers much from severe winters.

ARDEA GARZETTA, L.

Two specimens were killed many years ago near Pillau. They are preserved in the Königsberg Museum.

ARDEA PURPUREA, L.

I think Bock's "*Ardea violacea* vel *Ardea rubra*" ('Naturforscher,' 1778) is referable to this species. It may occur as an accidental straggler.

ARDEA CINEREA, L.

Common, breeding in large colonies, but occasionally in single pairs.

ARDEOLA RALLOIDES (Scop.).

May accidentally occur, as it has been killed in West Prussia.

ARDETTA MINUTA (L.).

I have only met with this bird a few times, but it seems to be much less rare than I once believed it to be.

NYCTICORAX NYCTICORAX (L.).

Bock states ('Naturforscher,' 1778) that the Night Heron breeds in Prussia. He received specimens on the 18th of May, 1849. I shot a young bird in the first plumage on the 30th of August, 1880, near Pillau.

BOTAURUS STELLARIS (L.).

Common during migration, but also found breeding in many localities. I have taken eggs in the middle of May.

CICONIA CICONIA (L.).

Common and breeding.

CICONIA NIGRA, L.

By no means rare, although not found everywhere. Nowhere else in Germany so numerous as in East Prussia.

PLATALEA LEUCORODIA, L.

Has been killed several times. Bock states that a specimen was shot in 1719 near Angerburg. In 1822 a pair were shot at Königsberg.

SYRRHAPTES PARADOXUS (Pall.).

During the two well-known invasions many specimens of this bird were observed and killed in East Prussia.

FULICA ATRA, L.

Extremely common on the Haffs and on some of the greater lakes, and apparently becoming more and more frequent on the smaller waters in several places.

GALLINULA CHLOROPUS (L.).

Very common on the smaller ponds and backwaters of rivers. It does not remain during the winter, as it often does in Western Germany.

ORTYGOMETRA PORZANA (L.).

Common. I have found a full clutch of 13 eggs as early as the 10th of May.

ORTYGOMETRA PARVA (Scop.).

Specimens are seldom procured, but these birds are, no doubt, much more numerous than they are supposed to be. If there were more ornithologists to search for such birds, probably *O. bailloni* would be found also.

CREX CREX, L.

Common.

RALLUS AQUATICUS, L.

Breeds regularly, but not in great numbers, and is very locally distributed.

GRUS GRUS (L.).

Breeds in many suitable localities.

OTIS TETRAX, L.

Has been shot as a straggler.

OTIS TARDA, L.

Is still found breeding in the "Werder" between Danzig and Marienburg, but I do not know whether this is the case in East Prussia at present. In times past it nested in many places, and not long ago one was shot.

SCOLOPAX RUSTICULA, L.

Numerous on migration, especially in autumn. Found breeding in many localities. Occasionally some are seen in the middle of winter, in December and January.

GALLINAGO GALLINAGO (L.).

Commonly breeding and very numerous on migration.

GALLINAGO GALLINULA, L.

Occurs commonly during migration, but I do not know of its breeding in recent times.

GALLINAGO MAJOR (Gm.).

Passes through in great numbers and breeds in some places in the north-eastern parts. I found it breeding in the district of Darkehmen.

NUMENIUS PHÆOPUS (L.).

Of very rare occurrence on the coast.

NUMENIUS ARQUATA (L.).

Passes through in great numbers. I have not found its eggs, but it is said to breed in the north-east.

LIMOSA ÆGOCEPHALA (L.).

Not rare on passage. Not long ago it bred regularly in the district of Labiau, and probably still breeds there.

LIMOSA LAPPONICA (L.).

Fairly common on passage on the sea-coasts and on the Haffs.

PHILOMACHUS PUGNAX (L.).

Found breeding here and there, and passes through in great numbers.

TOTANUS HYPOLEUCUS (L.).

Very numerous on passage. Breeds in many places. Eggs may be found at the end of May.

TOTANUS GLAREOLA (Gm.).

Common during migration, but breeds in a few localities only.

TOTANUS OCHROPUS (L.).

Breeds in many forests.

TOTANUS CALIDRIS, L.

I did not find this species breeding, but it is common on passage.

TOTANUS FUSCUS (L.).

Of rather rare occurrence in autumn.

TOTANUS LITTOREUS (L.).

Common on passage, chiefly in autumn.

TOTANUS STAGNATILIS, Bechst.

This Eastern species was shot near Königsberg in May 1863. It has been recorded from Prussia in May 1844 (Bock, Bericht Privatschule, 1845).

TRINGA MINUTA, Leisl.

Common in autumn.

TRINGA TEMMINCKI, Leisl.

Seems to be rare in Prussia. The only occurrence of which I know is that of six young birds on the 21st of August, 1882, of which I shot two.

TRINGA SUBARCUATA (Göld.).

On the coasts during migration in summer and autumn, but rather scarce.

TRINGA ALPINA, L.

Very common during migration.

TRINGA CANUTUS, L.

Not rare on migration.

TRINGA MARITIMA, Brünn.

This species has never been recorded from East Prussia. A female killed in West Prussia, in February 1850, is now in the Museum at Danzig.

CALIDRIS ARENARIA (L.).

Very numerous in autumn along the sea-coast.

PHALAROPUS LOBATUS (L.).

Several times procured and observed on the Frische Haff, chiefly in September.

RECURVIROSTRA AVOCETTA, L.

Of very rare and irregular occurrence.

ÆDICNEMUS ÆDICNEMUS (L.).

I did not meet with this species in East Prussia, but it doubtless occurs there occasionally. It has been procured several times in West Prussia. It has been found breeding near Thörn (W. Prussia), and was shot near Riesenbergr in June 1889.

VANELLUS VANELLUS (L.).

Common.

CHARADRIUS DUBIUS, Scop.

Breeds rather commonly.

CHARADRIUS ALEXANDRINUS, L.

I did not meet with this species, but Herr Lindner informs me that the Museum of Königsberg possesses a specimen that was shot in the province.

CHARADRIUS HIATICULA, L.

Common during migration.

CHARADRIUS MORINELLUS, L.

Passes through in autumn, according to the late E. von Homeyer and Herr Lindner (*in litt.*). I did not meet with it, but it has been recorded by Bock.

CHARADRIUS PLUVIALIS, L.

Not rare on passage. I never met with it during the breeding-season, but Herr Kuwert states that it has been found breeding on his ground (Lindner, *in litt.*)

CHARADRIUS SQUATAROLA (L.).

Not uncommon during migration.

ARENARIA INTERPRES (L.).

Not common on migration in autumn.

HÆMATOPUS OSTRALEGUS, L.

Very rare on migration.

CYGNUS OLOR (Gm.).

Breeds in small numbers on some of the greater lakes. The "*Anas cygnus*" of Bock ('Naturforscher,' 1778) is not the *Anas cygnus* of Linnæus, but *Cygnus olor*.

CYGNUS CYGNUS (L.).

Numerous in spring and autumn, sometimes in the midst of winter.

ANSER FINMARCHICUS, Gunn.

I once saw a specimen in the hands of a bird-stuffer, which I believed to belong to this species, but I could not find it again for re-examination.

ANSER SEGETUM (Gm.).

Passes through in great numbers, chiefly in October and March.

ANSER ARVENSIS, Brehm.

I saw two specimens, killed near Königsberg in 1881, which quite agreed with the description of this form.

ANSER ANSER (L.).

Passes through early in autumn and in spring, but is much less numerous than *Anser segetum*. I do not know of its breeding in East Prussia at the present time.

ANSER ALBIFRONS (Scop.).

Rather rare on the Baltic Sea and on the Haffs late in autumn.

BRANTA LEUCOPSIS (Bechst.).

Rare on the sea-coast and on the Kurische Haff.

BRANTA BERNICLA (L.).

Not rare on the sea-coast, and occasionally found in the interior.

TADORNA TADORNA (L.).

Has been shot occasionally near the coast.

ANAS CRECCA, L.

Breeds regularly in East Prussia, but in small numbers. It is found on small waters inland.

ANAS QUERQUEDULA, L.

Breeds in great numbers on the Haffs, but does not occur in winter.

ANAS STREPERA, L.

Not rare as a breeder on some of the lakes of the southern parts. Occurs also on passage. I found clutches in the second half of May, and even before that time.

ANAS PENELOPE, L.

Common on passage, but breeds in very small numbers only.

ANAS ACUTA, L.

Passes through on migration and breeds on some of the lakes.

ANAS BOSCHAS, L.

Very common. A few are seen also in winter.

SPATULA CLYPEATA (L.).

Breeds in small numbers.

FULIGULA FULIGULA (L.).

Not rare in winter.

FULIGULA MARILA (L.).

In winter, but not very common, and only on the sea-coast.

FULIGULA CLANGULA (L.).

Common in winter. Breeds commonly in the southern and eastern parts in hollow trees, mostly high above the ground.

FULIGULA FERINA (L.).

Not rare on passage, and regularly breeds on some of the lakes. Eggs laid in the second half of May.

FULIGULA NYROCA (Güld.).

Not uncommon in summer. Eggs to be found in the middle of May.

FULIGULA RUFINA (Pall.).

A male and a female in the Königsberg Museum are stated to have been killed in the province.

CLANGULA GLAUCION (L.).

In immense numbers frequenting the sea-coast and the Haffs during the winter.

HENICONETTA STELLERI (Pall.).

This beautiful Duck was not very rare some time ago, especially from 1840 to 1850, and many were shot near Pillau and some near Danzig, but only on the sea. I have not been able to ascertain its occurrence within the last 25 years.

SOMATERIA MOLLISSIMA (L.).

A few may be observed every winter. An adult female was shot in August 1887 near Pillau.

CEDEMIA NIGRA (L.).

CEDEMIA FUSCA (L.).

Both these species are not rare on the sea and the Haffs during the winter; the latter is somewhat the more common.

MERGUS MERGANSER, L.

This species is found in East Prussia during the winter, and breeds plentifully in the southern and eastern parts. The eggs are deposited in large hollow trees, and are laid from the end of April until the middle of May.

MERGUS SERRATOR, L.

This species, too, breeds in East Prussia, but is not so numerous as the last-mentioned. The eggs are deposited on the grassy islands, not in hollow trees.

MERGUS ALBELLUS, L.

Not rare during the winter until April.

PELECANUS ONOCROTALUS, L.

A specimen, of which a picture is in the Museum of Königsberg, was killed near Johannesburg in 1608.

PHALACROCORAX CARBO (L.).

I think that Bock's *Anas arborea*, as well as his *Pelecanus graculus*, is referable to this species. At present there are several large colonies of Cormorants in East Prussia. In 1884 I found a single nest on an island in the Kissain lake.

HYDROCHELIDON NIGRA (L.).

Common, and breeds in several localities.

HYDROCHELIDON LEUCOPTERA (Schinz).

In May 1882 an adult specimen was shot near Johannisburg.

STERNA MINUTA, L.

Löffler records the occurrence of this Tern in East Prussia, but I did not see it anywhere.

STERNA HIRUNDO, L.

Breeds in many places.

STERNA CASPIA, Pall.

I saw a single specimen of this Tern in September 1882 among a lot of *Sterna hirundo*, but could not shoot it.

RISSA TRIDACTYLA (L.).

Obtained several times near Pillau in winter.

LARUS MINUTUS, Pall.

This pretty little Gull is not rare in autumn. I shot it in the first plumage early in August, and late in November in full winter plumage. Many years ago it was found breeding not far from Danzig, and I have always suspected that it still breeds somewhere in the most north-eastern part of Germany. This becomes more probable since Herr Lindner observed it on the Kurische Nehrung in 1890 during the breeding-season.

LARUS RIDIBUNDUS, L.

Breeds in large colonies.

LARUS CANUS, L.

Common along the coast during the winter.

LARUS FUSCUS, L.

Common along the coast during the winter.

LARUS MARINUS, L.

Not rare on the sea in winter, but much rarer than *L. fuscus*.

LARUS ARGENTATUS, Brünn.

Not rare in winter, but apparently does not breed in this country.

LARUS GLAUCUS, Brünn.

Extremely rare. A specimen was killed on the coast in the winter of 1882, which I have examined.

LARUS LEUCOPTERUS, Faber.

A young specimen was killed long ago near Pillau.

STERCORARIUS PARASITICUS (L.).

Not common along the coast in winter, somewhat less rare in October.

STERCORARIUS POMATORHINUS (Tcmn.).

Very rare. A specimen shot near Pillau.

PODICEPS FLUVIATILIS, Tunst.

Not rare in summer on small ponds.

PODICEPS NIGRICOLLIS (Brehm).

Breeds on some lakes, especially in the eastern parts. As a rule many nests are placed close together.

PODICEPS AURITUS, L.

Has been shot a few times on passage, but does not breed.

PODICEPS GRISEIGENA, Bodd.

This species has been recorded as breeding in East Prussia by Rathke and others. I did not find it in summer, but it has been shot occasionally on passage.

PODICEPS CRISTATUS, L.

Breeds in large colonies on the Haffs and many lakes. Generally many nests are near together, but occasionally a single pair inhabits a lake or pond.

COLYMBUS SEPTENTRIONALIS, L.

Common on the sea in winter.

COLYMBUS ARCTICUS (L.).

This species is not rare in winter. Several adult specimens have been seen and procured in summer during the breeding-time, and therefore it seems very probable that this species occasionally nests within the limits of North-eastern Germany. Bock (1778) says that "*Anser colymbus*" has been caught near Friedrichstein in June; he, no doubt, refers to the present species. It has been observed several times on lakes in Pomerania, and I shot an adult female on the 29th July on the Frische Haff, which had laid eggs not long before, to judge from the dissection.

MERGULUS ALLE (L.).

Has been shot a few times on the sea, but is a great rarity for East Prussia.

URIA GRYLLE (L.).

A regular but not common winter visitor along the coast.

URIA LOMVIA (L., 1758).

Uria troile, L.

Has been shot near Danzig, but not, so far as I know, on the East Prussian coast.

ALCA TORDA, L.

Not very rare in winter on the Baltic Sea and on the Haffs.

XLII.—On a little-known Species of Lark, of the
Genus *Otocorys*. By ERNST HARTERT.

(Plate XIII.)

WHEN preparing the Catalogue of the Birds of the Senckenberg Museum at Frankfurt-a.-M., I found in the Collection a stuffed specimen of a Lark, no doubt belonging to the genus *Otocorys*. As it was of an entirely unknown



J. G. Reulemann del. et lith.

Mindern Ber.

OTOCORYS BERLEPSCHI

species, I briefly described it in the 'Journal für Ornithologie' under the name of *Otocorys berlepschi*, calling it after my friend Freiherr Hans von Berlepsch. In my Catalogue of the Birds in the above-named Museum I gave a more careful description of it.

This species, however, is so interesting that I wish to introduce it again to the notice of English ornithologists by the accompanying figure, which has been prepared by Mr. Keulemans from a water-colour drawing of the specimen. I add a short description of it.

OTOCORYS BERLEPSCHI. (Plate XIII.)

Otocorys berlepschi, Hartert, J. f. O. 1890, p. 103; id. Cat. B. Senckenb. Mus. p. 37.

Top and sides of the head, chin, throat, and upper breast black, with a faint purplish gloss; ear-coverts tipped with pale brown; occiput, hind neck, interscapular region, smaller upper wing-coverts, and tail-coverts bright vinaceous cinnamon; outer and inner webs of all the quills brown, faintly margined and tipped with brownish grey; tail dark brown, central pair and outer webs of lateral rectrices paler brown; lower parts bright vinaceous cinnamon, spotted with brown on the breast and whitish along the middle of the abdomen. Total length about 6·5 inches, wing 4·15, tail 2·8, culmen 0·46, tarsus 0·8. The bill is of the somewhat acute form of that of *Otocorys bilopha*.

A slip of paper was attached to the stand of the specimen with the words "*Alauda? Caffraria*." This is a somewhat uncertain locality, but I think it is most probable that the bird came from the interior of South Africa, from which we still receive many entirely new forms.

A somewhat bright rufous coloration is exhibited in the other southern species of Horned Larks.

The entirely black throat and breast, the brown outer web of the first primary, which is white in all the other species of *Otocorys*, and the rather rufous colour of the upper and under tail-coverts are the most characteristic features of this species, on which further information would be very acceptable.

XLIII.—*On a case of a Cuckoo and a Swallow being reared in the same Nest.* By the Rev. CHARLES WOLLEY-DOD.

EDGE HALL is twelve miles south of Chester, and in its garden small birds have a good time, as cats and bird-nesting boys are carefully prohibited. Their worst enemies appear to be Jays, which hunt for their nests early, before anyone is about, and carry off the young birds. Nevertheless, the numbers of Pied Wagtails, Spotted Flycatchers, and Swallows seem yearly to increase. The garden is a favourite resort for Cuckoos, and a young Cuckoo generally occupies at least one of the Wagtail's nests, and appears on the lawn in due time, waited upon by the old birds. I have often watched to see whether more than one pair of birds took part in the feeding, but I never could make out that it was so.

About midsummer this year my gardener came to tell me that he had found a young Cuckoo dead in a Wagtail's nest, built in a wall close to the back door of my house. He passed the nest at least a dozen times a day, and had missed seeing the old birds within twenty-four hours. I found the young Cuckoo, about a week old, and of course the sole occupant of the nest. It was plump, and bore no outward sign of injury, and had not been dead many hours. My man was sure that the Wagtails had learnt wisdom by experience, and that when they found what it was they were rearing they had deserted it. But this was rather slender evidence of desertion, and this young bird's fate must remain a mystery. About two days later, it was on the morning of the twenty-second of June, my gardener told me that there was a young Cuckoo in a Swallow's nest in the potting-shed. The "coin of vantage" chosen by these particular Swallows to build in must be fully described in order to understand what follows. The potting-shed, about thirty feet long and eight wide, is a lean-to shed outside the wall of the kitchen garden, with another cross-wall at one end. The other end and half the side on which it is entered are boarded or glazed, leaving open about fifteen feet in length and six in height. The eaves of the iron roof rest upon a horizontal beam, which makes a

sort of ledge inside, between which and the roof is a wedge-shaped cavity, convenient for keeping trowels, hammers, &c., which are held in the angle of the wedge. Amongst other things, the gardener had put there a thin bit of board, just where a rafter comes down and crosses the horizontal beam. On this board, projecting and resting on one side against the rafter, the Swallows had built their nest, two-thirds of which were blocked at the sides and back, and there was access to it only by the concave channel of the corrugated iron roof, which afforded a space of about two inches between the nest and the roof for about one third of its circumference. I do not think it would be possible for a Cuckoo to have got into the nest to lay an egg; how the young bird was intended to get out when full-grown was another difficult problem. However, there the young Cuckoo was, and I judged it to be about a week old; I took it out of the nest to examine it, and it was lively and vigorous, its feathers beginning to grow.

On inquiry I found that about a week before this two broken Swallow's eggs had been noticed beneath the nest. I believe these were afterwards removed by the old Swallows, because I found one of them dropped on the other side of the wall against which the shed leans, and the gardener had not touched the broken eggs; as the Swallows continued to visit the nest he had not thought anything of the incident. I also learnt that about a month before the garden-boy had come upon a Cuckoo sitting on a box in the shed. It flew away, but two hours afterwards was there again. Later in the day I felt in the nest again and discovered that besides the young Cuckoo there were two young Swallows, evidently hatched later, and apparently three or four days younger. I watched for some time to see whether the Cuckoo would make any attempt to eject his companions, but he did not seem to notice them. The next morning I took the nest down to examine it. There was only one young Swallow, the other had disappeared; I suspect it had died and the old birds had carried it away, for I could see no disposition at all in the Cuckoo to interfere with the survivor, which seemed weakly and starved.

On that day, June 23rd, I put another piece of board by the side of the first in the wedge of the roof, and on it I lodged an empty Blackbird's nest, in which I placed the young Cuckoo, leaving the Swallow in its own nest. When the old birds next came, they sat upon a box which hung against the wall just opposite their nest, inside the shed. After twittering there for about ten minutes and taking a survey of the new nest they flew off and returned with food six times in half an hour. I think they fed only the Cuckoo in the Blackbird's nest, neglecting their own nest and progeny. Later in the day, as the little Swallow seemed to be getting cold and starved, I put it with the Cuckoo into the Blackbird's nest. From that time I took down this nest every time I wanted to look at the birds, and replaced it on the board.

The two nestlings lived peaceably together, and both got fed and grew. The Swallow generally had its head visible from under the rear of the Cuckoo's wing. The Cuckoo after a day or two began to resent being touched or looked at, rising up in the nest and making threatening demonstrations, drawing back his head and striking with his beak. His rate of growth was astonishing. I often sat in the corner of the shed and watched the parent birds. When they first saw me there, they generally went and sat up on their favourite box opposite the nest, the first waiting for the arrival of the other, and they appeared on that visit to swallow the food they had brought in their mouths. They then went off together, and one or other came about once in two minutes, flying at once to the nest, though I could not then distinguish which of the two young ones was fed at each visit. The droppings were all carried away from the ledge by the old birds in their beaks, and let fall at some distance from the nest. In one of my inspections I dropped a white feather with which the Swallow's nest had been lined, and at its next visit the old bird picked it up from the ground and carried it away. This made me think that the broken eggs had been removed in the same way.

On the 28th we had a garden-party, and many visitors went

to see the infant prodigy, which was now feathered all over and very fierce, rising up and drawing himself back so as to get a good strike at the intruders. He quite filled the nest, and besides pecking savagely, he opened his wings and stamped his feet about, apparently not from any ill-will to his foster-brother, who, however, did not seem to like such rough behaviour.

On coming the next morning my gardener found that the Blackbird's nest, which had been carelessly replaced on the narrow lath, had fallen six feet to the ground and was lying bottom upwards. The Cuckoo was sitting by the side of it, but the Swallow was beneath it; neither seemed any the worse. A broader piece of board was substituted, and a prop put on each side of the nest, as the Cuckoo now often stood up, and, being big and heavy, might easily overbalance it. Twice on that day I found four Swallows in the shed, and, as there was no other nest there in use, I wondered whether the additional pair had been called in to help in the feeding; it did not prove to be so; still I think their presence was not accidental, but that they had been invited in by the parent birds.

The feedings now became more frequent, and I counted seven visits in ten minutes; both young ones were making satisfactory progress, the Cuckoo always fluttering and striking when approached or handled, but the little Swallow remaining quiet and crouching in the bottom of the nest; it sometimes tried to avoid being trampled upon by clinging to the inside of the nest, with its head over the edge, but it had a rough time of it.

At 9 o'clock in the evening of the 2nd of July, and about the same time on one or two subsequent days, when Swallows had ceased to fly, the old birds were not at the nest or in the shed, and I still wonder where they passed the night. The young Swallow, however, was at that time uppermost in the nest, lying on the Cuckoo's wing, and if there had been any disposition to eject him it could have been done with the greatest ease. The two little Swallows first found, or rather the eggs which produced them, had probably been saved from

ejection by the closeness of the iron roof to the top of the nest, but when they were changed to the Blackbird's nest, and it was placed farther away from the eaves, there was plenty of head-room. However, from first to last the Cuckoo showed no hostility to the little Swallow, though it several times pecked at the parents whilst feeding their own baby.

On the 3rd of July the Cuckoo left the nest and sat in the dark angle behind it. I could now watch the old birds feed both the young ones, and they were beginning to be more attentive to their own. The Cuckoo remained out all that day—greatly, no doubt, to the relief of his companion—but the next morning was in the nest again. He was now nearly full-grown and full-fledged, and, fearing he would trample the Swallow to death, I put it into the original nest, which I put back to nearly its original place, so as to be safe from the invasion of the Cuckoo. This time, so far from neglecting it, the old birds found it and fed it at once; it competed with its companion for their attention, twittering whenever they came with food, whilst the Cuckoo had for some days begun his querulous little squeaking chirp, which was now almost incessant.

About 4 in the afternoon of July 5th the Cuckoo, which had been in and out of the nest several times, stepped upon one of the props which I had put to support the nest and overbalanced it. The prop fell to the ground with a great rattle, but the Cuckoo, with much fluttering, recovered himself. The old birds, both of whom were present, at once showed signs of the wildest alarm; they flew round and round, in and out of the shed, screaming, and dashing at the Cuckoo, whom, I believe they no longer recognized as the nestling they had reared, but took for a Hawk which had just made away with one of their young ones. Anyhow, they fed him no more, but avoided him and approached their own chick by a circuitous route. The Cuckoo now flew from one part of the shed to another, continuing his squeaking note, but the Swallows avoided him, or only made threatening dashes at him. Next morning he was sitting on a fruit-tree outside the shed; but still the Swallows

avoided him, and the alarm was taken up by other Swallows, who mobbed him as they do a Hawk; he flew first into a wellingtonia, followed by a dozen Swallows, then back again over the shed into a large oak, where he sat forty feet up, still followed by screaming Swallows. Soon after he flew down into the kitchen garden, where Blackbirds and Thrushes became noisy and surrounded him, the Thrushes staring inquisitively, the Blackbirds settling above on the wall and keeping up that note of warning which they always raise against a suspected intruder. After that he came and sat upon a garden frame, opposite his native shed, where I was observing the parent birds, and I had an opportunity of watching what took place at a distance of three or four yards. The two old Swallows made frequent dashes at him, approaching first in front and then in the rear, and turning off when within three or four inches of him, making him start every time. (Certain pairs of Swallows in my garden always year after year assail me in the same way if I pass near their nest, coming so close to my face that I can often feel the waft of their wings, and making an audible snap with their beaks when at the nearest point.) From time to time one would fly into the shed and go up to the nest as if to satisfy itself that its remaining little one was still safe. After half an hour of this I felt some compassion for the young Cuckoo, and, catching two or three insects, I went to feed him; but he would not let me come close, but again flew about fifty yards into a clump of thinly furnished spruce, where he sat on a branch about twelve feet from the ground, uttering his querulous chirp incessantly. The Blackbirds discovered him and became noisy again. It was now nearly 1 o'clock and I left him, and never saw him afterwards. I went round the garden to search for it two or three times that afternoon and the next day, and though I should easily have recognized his note, even if the birds had not attracted me by their excitement, I could not find him, nor did my gardener, who was constantly about, see anything of him; whether, when he found that it did not answer to pose as a starving beggar, he determined to work for a livelihood and succeeded, I cannot tell. He

was quite strong and at home on the wing, skimming confidently during his flight, like an old bird, and he might easily have found food, if his instinct taught him how to look for it. There seems to be some uncertainty as to the age at which a young Cuckoo begins to provide for himself, but it is not easy to see what useful experience he gains by watching Wagtails run about the grass coursing flies, or Swallows hawking them in the air; but as long as I saw him he showed no disposition to look for food himself, nor did any bird show any inclination to help him.

As for the young Swallow, the old birds now devoted all their attention to it. For the rest of that day,* and the two days which followed, one or both of them were always near the shed, and I am sure that they troubled themselves no more about the monster from the care and fear of which they were now released. The 7th and 8th of July were very stormy, and the young bird sat for most of the time on the edge of the nest, twittering to his parents, who spent much of the day on the box opposite to him; he seemed as well feathered and nearly as big as they were. The morning of the 9th was calm and bright, and when I went to look at the nest at 7 o'clock the young Swallow had flown.

XLIV.—*Remarks on some recently described Extinct Birds of Queensland**. By R. LYDEKKER.

In the four communications cited below, together with an earlier one relating to a bone belonging to the *Dinornithide*, Mr. De Vis has described a number of bird-remains from the superficial deposits of Queensland which are referred to upwards of 27 distinct species. Eight of these are assigned

* C. W. DE VIS. A Glimpse of the Post-Tertiary Avifauna of Queensland. *Proc. Linn. Soc. N. S. W.* (2) iii. p. 1277 (1888).

——. On the Trail of an Extinct Bird. *Ibid.* vi. p. 117 (1891).

——. Note on an Extinct Eagle. *Ibid.* vi. p. 123 (1891).

——. Residue of the Extinct Birds of Queensland as yet Detected. *Ibid.* vi. p. 437 (1892).

to new and extinct genera, while the remainder are included among genera still existing.

Some of these remains are considered to belong to types which might naturally be expected to occur in an assemblage of birds from the Australian region, such as *Tribonyx*, *Porphyrio*, *Dendrocygna*, *Biziura*, *Pelecanus*, and *Dromæus*, together with an extinct type (*Progura*) allied to the living *Goura*. A Moa and a form considered to be allied to the Kiwi are, however, unexpected elements in an Australian avifauna. So far as the femur referred to the Moas (*Dinornithidæ*) is concerned, it appears to me that the specimen is rightly determined (judging from the figure); and, if there is no doubt about its Australian origin, we must apparently admit that this group of birds was formerly represented in Australia. I shall have more to say about the presumed *Apteryx*-like bird in the sequel.

Including Owen's *Dromornis*, out of a total 28 species of birds recognized by Mr. De Vis, 9 of the 24 genera to which they are assigned are regarded as extinct; and the author is thus led to consider that the deposits in which these remains occur are of early Pliocene rather than Pleistocene age. I have, however, considerable doubts whether all these so-called genera will be eventually admitted as valid; while, apart from this, the number of extinct birds occurring in the superficial deposits of New Zealand, some of which undoubtedly belong to the human period, shows that very little weight can be attached to such inferences.

With regard to the presumed generic distinctness from all existing forms of some of the remains described by Mr. De Vis, I may observe that many of the specimens are so fragmentary and battered that in my opinion it is extremely hazardous to attempt even their generic determination. I may, however, premise that if such specimens had been obtained from a deposit like the London Clay, where, from its age, the probability is so great as to amount almost to a certainty that they would belong to extinct genera, I should not so much object to the founding of genera upon such fragmentary remains. But the question is very different

when we have to do with bones belonging to a comparatively modern epoch. In such cases a comparison with the corresponding bones of every living species belonging to the groups to which the fossil is considered to be allied is essential before any bone can be regarded as indicating a new species, much less a new genus.

A case in point occurs with the fragment of the upper end of a humerus figured in pl. xxiv. fig. 1 of the last paper on the list, which is referred to a new genus of Accipitrines, under the name of *Necrastur*. Now I am far from asserting that Mr. De Vis may not be perfectly justified in referring this bone to the Accipitres, although its Accipitrine affinities are not apparent from the figure; but even if he be correct in this, I am scarcely prepared to admit that he has conclusively made out its right to generic distinctness. Moreover, even if it be eventually proved that he is right in both these respects, I quite fail to see of what possible advantage it can be to cumber science with a generic name for a bird known merely by such a fragment of bone, and of which the precise affinities cannot possibly be conjectured. I may add that in his description of this bone on p. 437 Mr. De Vis confuses the ulnar with the radial side, and thereby renders his remarks somewhat difficult to follow.

Again, the fragment of the distal end of a tarso-metatarsus figured in pl. xxiii. fig. 7 of the same memoir is so battered and imperfect that I cannot help having some doubt whether the bird to which it belonged was really specifically distinct from the author's previously described *Dromæus patricius*. In describing this specimen the author lays stress on the absence of the perforation between the third and fourth metatarsals (p. 447), which it is suggested may prove of generic importance; but this reads rather strange when contrasted with the observations on page 451, where it is stated that the absence or presence of such a canal in *Apteryx* is not even of specific value.

The occurrence in Australia of a representative of the *Apterygidæ*, if well authenticated, would be a matter of extreme interest, but I venture to think that ornithologists

will pause before they admit that the lower end of the tarso-metatarsus of an immature bird figured on plate xxiii. fig. 8 of the author's fourth memoir, under the name of *Metapteryx*, proves that such was ever the case. In the first place, the presumed *Apteryx*-like bird had no hallux; while, when we contrast the form of the cleft between the extremities of the third and fourth metatarsals in Mr. De Vis's figure of the fossil bone with that of the corresponding bone of a young *Apteryx* drawn alongside for comparison, one is astonished at the boldness of the author in venturing to say so unhesitatingly that there is any alliance between the two forms. A little more experience of immature birds' bones by Mr. De Vis would, moreover, I think, lead him to retract the statement (pp. 450-1) that the *Apteryx* is the only living bird in which the divisions between the three metatarsals are indicated by lines on the shaft of the tarso-metatarsus*. And, as a minor matter, I cannot help expressing my astonishment at the statement made on page 453 to the effect that the fossil bird was not larger than the modern Kiwis, when both the measurements and the figures of the fossil and recent metatarsals indicate that the one was in reality nearly double the size of the other.

Although Mr. De Vis has undoubtedly done some good work in regard to the Pleistocene birds of Queensland, yet I am afraid that, until he produces much more conclusive evidence as to the affinities of the owners of some of the bones which he describes, many of his genera and species are not likely to find their way into palæontological works when authors have any regard for their own reputation.

* They are distinctly visible in the tarso-metatarsus of an immature Turkey in my possession.

XLV.—On the Birds collected by Mr. F. J. Jackson, F.Z.S., during his recent Expedition to Uganda through the Territory of the Imperial British East-African Company. By R. BOWDLER SHARPE, LL.D., F.L.S., &c. With Notes by the Collector.—Part V.*

(Plate XIV.)

Order STRIGES.

Fam. BUBONIDÆ.

226. BUBO LACTEUS.

Bubo lacteus (Temm.); Sharpe, Cat. B. ii. p. 33 (1875); Fischer, Zeitschr. i. p. 373 (1884; Ngurumán); id. J. f. O. 1885, p. 122 (Kipini, Wapokomoland, Lake Naivasha); Salvad. Ann. Mus. Gen. (2) vi. p. 206 (1888; Shoa); Shelley, P. Z. S. 1888, p. 356 (Useri River).

No. 162. ♂. Turquel, Sük, Jan. 9, 1890.—Irides brown. Stomach contained bones, apparently of fish. * Generally seen in pairs.

No. 193. ♀. Turquel, Sük, Jan. 22, 1890.—Irides brown; bill whitish horn; feet white. Stomach contained rats &c.

227. SCOPS CAPENSIS.

Scops capensis, Smith; Sharpe, Cat. B. ii. p. 52; Fischer, J. f. O. 1885, p. 122 (mainland near Lamu); Reichen. J. f. O. 1892, p. 20 (Umpeke).

No. 156. ♂. Turquel, Sük, Jan. 6, 1890.—Irides bright yellow; feet dusky. Very plentiful along the banks of the river Turquel, where its call may be constantly heard, though the bird is very rarely seen. The call resembles a single trill like the note of a cricket, but is much deeper.

No. 197. ♂. Turquel, Sük, Jan. 23, 1890.—Irides bright yellow.

228. ASIO CAPENSIS.

Asio capensis (Smith); Sharpe, Cat. B. ii. p. 239; Shelley, Ibis, 1888, p. 291 (Rombo).

No. 86. ♂. Machako's, Feb. 28, 1889.

* Concluded from p. 322.

229. *STRIX FLAMMEA*.

Strix flammea, L.; Sharpe, Cat. B. ii. p. 291; Fischer, Zeitschr. i. p. 373 (1884; Pangani); Salvad. Ann. Mus. Gen. (2) i. p. 78 (1884; Daimbi, Shoa); Fischer, J. f. O. 1885, p. 122 (Zanzibar, Pangani, Lamu); Reichen. J. f. O. 1887, p. 54 (Wembaere Steppes).

No. 153. ♀. Turquel, Sük, Jan. 5, 1890.—Irides brownish black. Had four nestlings brought to me yesterday. Gedge saw another bird. Plentiful in the dark-foliaged trees along the river in Turquel.

No. 196. ♀. Turquel, Sük, Jan. 23, 1890.

Order ACCIPITRES.

230. *CIRCUS MACRURUS*.

Circus macrurus (S. G. Gm.); Sharpe, Cat. B. i. p. 67 (1874); Shelley, Ibis, 1888, p. 290 (between Kake and Taveita).

Circus swainsoni, Smith; Salvad. Ann. Mus. Gen. (2) i. p. 76 (1884; Daimbi, Shoa); id. op. cit. vi. p. 225 (1888; Dembi, Shoa).

No. 105. ♀ juv. Machako's, March 21, 1889.

No. 152. ♂ ad. Turquel, Sük, Jan. 3, 1890.—Irides, feet, and cere yellow. Stomach contained a rat. Very plentiful. Terribly fat.

No. 187. ♂ juv. Turquel, Jan. 19, 1890.—Irides brown; legs yellow; cere yellow. Very plentiful.

231. *MELIERAX GABAR*.

Melierax gabar (Daud.); Sharpe, Cat. B. i. p. 89.

Nisus gabar, Fischer, J. f. O. 1885, p. 91 (Usegua).

Micronisus gabar, Salvad. Ann. Mus. Gen. (2) i. p. 72 (1884; Daimbi, Shoa); id. op. cit. vi. p. 203 (1888; Shoa).

No. 104. ♀ juv. Machako's, March 21, 1889.

No. 111. ♀. Machako's, March 26, 1889.

No. 119. ♂. Machako's, April 3, 1889.

232. *MELIERAX NIGER*.

Melierax niger (Bonn. et Vieill.); Sharpe, Cat. B. i. p. 91.

Micronisus niger, Salvad. Ann. Mus. Gen. (2) i. p. 73 (1884; Daimbi, Shoa).

No. 155. ♀. Turquel, Sük, Jan. 5, 1890.—Irides crimson-brown; cere yellow; feet orange, marbled with black.

233. MELIERAX sp. inc.

No. 203. ♂. Turquel, Sük, Jan. 25, 1890.—Irides brown; cere yellow; feet yellow. Stomach contained rats and mice.

A young bird in very dark brown plumage, too dark, indeed, to permit of its being identified with *M. polyzonus*. The upper tail-coverts are white, barred with ashy, showing that the adult bird is allied to *M. polyzonus*, but I have not been able to identify the species satisfactorily.

234. ASTUR POLYZONOIDES.

Astur polyzonoides (Smith); Sharpe, Cat. B. i. p. 113; Reichen. J. f. O. 1891, p. 144 (Mpapwa).

Nisus badius, Fischer, Zeitschr. i. p. 375 (1884; Mkaramo); id. J. f. O. 1885, p. 121 (Usegua).

Astur spheurnus, Rüpp.; Reichen. J. f. O. 1887, p. 53 (Mussure).

No. 137. ♀. Turquel, Sük, Dec. 24, 1889.—Cere, feet, and irides yellow; bill horn-blue.

No. 166. ♀. Turquel, Sük, Jan. 9, 1890.—Irides orange-red; feet bright yellow; cere yellow; bill horn-blue.

235. BUTEO AUGUR.

Buteo augur, Rüpp.; Sharpe, Cat. B. i. p. 175; Fischer, Zeitschr. i. p. 374 (1884; Great Aruscha); id. J. f. O. 1885, p. 122 (Mombasa, Wito, Naivasha); Reichen. J. f. O. 1887, p. 54 (Kagehi).

Pterolestes augur, Salvad. Ann. Mus. Gen. (2) i. p. 51 (1884; Shoa); id. op. cit. vi. p. 196 (1888; Shoa); Reichen. J. f. O. 1892, p. 20 (Karagüe).

No. 34. ♀. Mianzini, Masailand, Aug. 29, 1889.—Iris brown; cere and feet yellow. Stomach contained large grasshoppers.

No. 74. ♀. Ukambani, Feb. 11, 1889.

No. 264. ♂. Mount Elgon, Feb. 13, 1890.—Iris brown; feet yellow; cere yellow.

236. *BUTEO DESERTORUM*.

Buteo desertorum (Daud.); Sharpe, Cat. B. i. p. 179; Fischer, Zeitschr. i. p. 374 (1884; Maurui); Salvad. Ann. Mus. Gen. (2) i. p. 49 (1884; Shoa); Fischer, J. f. O. 1885, p. 122 (Maurui).

No. 36. ♂ juv. Kikuyu, Sept. 4, 1889.—Irides whitish yellow; feet dusky yellow; cere yellow; bill horn-blue, lighter at the base.

No. 204. ♂. Turquel, Sük, Jan. 25, 1890.—Cere yellow; feet yellow; bill horn-blue; irides brown. Stomach contained rats.

237. *AQUILA RAPAX*.

Aquila rapax (Temm.); Sharpe, Cat. B. i. p. 242; Fischer, Zeitschr. i. p. 373 (1884; Little Aruscha); id. J. f. O. 1885, p. 122.

Nos. 194, 195. ♂. Turquel, Sük, Jan. 22, 1890.—Cere and feet yellow; bill horn-colour; irides light brown. Very plentiful in the plains of Turquel.

238. *LOPHOAËTUS OCCIPITALIS*.

Lophoaëtus occipitalis (Daud.); Sharpe, Cat. B. i. p. 274; Salvad. Ann. Mus. Gen. (2) vi. p. 195 (1888; Farré).

Spizaëtus occipitalis, Fischer, Zeitschr. i. p. 374 (1884; Pangani to Great Aruscha); id. J. f. O. 1885, p. 121 (Bagamoyo, Malindi, Wito, Wapokomoland, Maurui); Reichen. J. f. O. 1887, p. 53 (Schasche, Ugaia); id. J. f. O. 1892, p. 19 (Bukoba).

No. 213. ♂. Turquel, Sük, Jan. 29, 1890. Cere and feet yellow; irides bright yellow. Plentiful.

239. *ASTURINULA MONOGRAMMICA*.

Asturinuia monogrammica (Temm.); Sharpe, Cat. B. i. p. 275; Fischer, Zeitschr. i. p. 374 (1884; Maurui); id. J. f. O. 1885, p. 121 (Mombasa, Wito, Wapokomoland, Pan-

gani); Shelley, Ibis, 1888, p. 290 (Taveita); Reichen. J. f. O. 1891, p. 144 (Mpapwa).

No. 9. Busoga, June 12, 1890.—Iris crimson-brown; cere coral-red; feet also coral-red.

240. *CIRCAËTUS CINERASCENS*.

Circaëtus cinerascens, Müll.; Sharpe, Cat. B. i. p. 285.

No. 142. ♂. Turquel, Sük, Dec. 27, 1889.—Irides pale yellow (whitish); feet dull scaly yellow; cere yellow. Stomach contained long green snake.

241. *HALIAËTUS VOCIFER*.

Haliaëtus vocifer (Daud.); Sharpe, Cat. B. i. p. 310; Fischer, Zeitschr. i. p. 374 (1884; Pangani River, Osi-Tana district from Kilimanjaro and Maeru Mountains, Great and Little Aruscha, Komboko, Ngurumán and Lake Naivasha); Salvad. Ann. Mus. Gen. (2) i. p. 45 (1884; Shoa); Fischer, J. f. O. 1885, p. 121 (Zanzibar, Kingani, Mombasa); Reichen. J. f. O. 1887, p. 54 (Wembaere Steppes, Simiu River, Nassa on Speke Gulf); Salvad. Ann. Mus. Gen. (2) vi. p. 196 (1888; Cialalakà, Shoa); Reichen. J. f. O. 1892, p. 19 (Victoria Nyanza).

No. 188. ♂ ad. Turquel, Sük, Jan. 20, 1890.—Cere and bare skin of face pale yellow; feet white; bill horny black; iris brown. Plentiful.

No. 205. Young. Iris brown; feet white; bill black; cere dull lead-colour.

242. *MILVUS KORSCHUN*.

Milvus korschun (Gm.); Sharpe, Cat. B. i. p. 322.

Milvus forskali, Fischer, Zeitschr. i. p. 375 (1885; Coast of Naivasha Lake); id. J. f. O. 1885, p. 121 (Zanzibar, Wapokomoland, Maurui, Paré, Aruscha, Masailand, to Naivasha); Reichen. J. f. O. 1887, p. 53 (Usukuma district).

Milvus migrans (Bodd.); Shelley, Ibis, 1888, p. 295 (Manda Bay).

No. 203. ♂. Turquel, Sük, Jan. 25, 1890.—Iris brown; cere yellow; feet yellow.

243. *ELANUS CÆRULEUS*.

Elanus cæruleus (Desf.); Sharpe, Cat. B. i. p. 336; Salvad.

Ann. Mus. Gen. (2) i. p. 60 (1884; Adda-Galla); id. op. cit. vi. p. 198 (1888; Soddé, Shoa).

Elanus melanopterus, Fischer, Zeitschr. i. p. 375 (1884; Pangani); id. J. f. O. 1885, p. 121 (Zanzibar, Mombasa); Reichen. J. f. O. 1887, p. 53 (East of Kagehi).

No. 199. ♂ juv. Turquel, Sük, Jan. 24, 1890.—Iris pale brown; feet and cere yellow; bill black. Very plentiful.

244. *POLIOHIERAX SEMITORQUATUS*.

Poliohierax semitorquatus (Smith); Sharpe, Cat. B. i. p. 370; Salvad. Ann. Mus. Gen. (2) i. p. 64 (1884; Ambo-Karra); Fischer, J. f. O. 1885, p. 122 (Wapokomoland); Salvad. Ann. Mus. Gen. (2) vi. p. 199 (1888; Sherba, Shoa); Reichen. J. f. O. 1891, p. 144 (Bilisanda, Uniamuesi).

No. 160. ♀. Turquel, Sük, Jan. 8, 1890.—Iris brown; cere and bare skin round the eye and base of bill coral-red; bill horn-blue at tip, fading to bluish white at base; legs scaly coral-red. Stomach contained a small sand-lizard.

No. 165. ♂. Turquel, Jan. 9, 1890.

No. 206. ♀. Turquel, Jan. 26, 1890.—Cere and bare skin of face crimson-red; feet coral-red; iris brown.

245. *FALCO CUVIERI*.

Falco cuvieri, Smith; Sharpe, Cat. B. i. p. 400; Fischer, J. f. O. 1885, p. 122 (Usaramo).

Hypotriorchis cuvieri, Salvad. Ann. Mus. Gen. (2) i. p. 62 (1884; Shoa).

No. 1. Imm. Kikuyu Forest, Aug. 10, 1889.—Iris brown; cere and feet yellow; bill horn-blue. Stomach contained a small bird.

No. 87. ♂ ad. Kikumbulu, Aug. 21, 1890.—Iris brown; feet orange-yellow; bill horn-blue, shading to black at tip; cere and eyelids yellow.

246. *FALCO ELEONORÆ*.

Falco eleonoræ, Gené; Sharpe, Cat. B. i. p. 404.

No. 114. ♀. Machako's, March 30, 1889.

An immature bird, which must belong to this species and not to *F. subbuteo*, as the wing is 11·2 inches in length. It is in the young or "Hobby" stage of plumage.

247. *CERCHNEIS TINNUNCULUS*.

Cerchneis tinnunculus (L.) ; Sharpe, Cat. B. i. p. 425.

Tinnunculus alaudarius, Fischer, Zeitschr. i. p. 374 (1884; Maurui) ; Salvad. Ann. Mus. Gen. (2) i. p. 64 (1884; Shoa, on migration) ; id. op. cit. vi. p. 199 (1888; Shoa) ; Shelley, Ibis, 1888, p. 295 (Lamu).

Falco tinnunculus, Fischer, J. f. O. 1885, p. 122 (Maurui). No. 123. ♂. Kavirondo, Dec. 12, 1889.—Iris brown ; feet yellow.

Order PELECANIFORMES.

Suborder PHALACROCORACES.

248. *PHALACROCORAX LUCIDUS*.

Graculus lucidus (Licht.) ; Heugl. Orn. N.O.-Afr. ii. p. 1490 (1873) ; Fischer, J. f. O. 1885, p. 114 (Osi-Tana district).

No. 6. ♂ ad. Ripon Falls, River Nile, May 21, 1890.—Iris green ; upper mandible black, lower one fading into white at gape ; pouch mottled olive-green and yellow ; a yellow patch below each eye.

249. *PHALACROCORAX AFRICANUS*.

Phalacrocorax africanus (Gm.) ; Fischer, Zeitschr. i. p. 394 (1884 ; Naivasha Lake) ; Shelley, Ibis, 1888, p. 307 (Manshundwani ; Jipi) ; Reichen. J. f. O. 1892, p. 4 (Uganda).

Microcarbo africanus, Salvad. Ann. Mus. Gen. (2) ii. p. 251 (1884 ; Lake Cialalakà) ; id. op. cit. vi. p. 325 (1888 ; Lake Harà, Shoa).

Graculus africanus, Fischer, J. f. O. 1885, p. 114 (Osi-Tana district ; Kingani ; Barawa).

Graculus pygmaeus (Pall.) ; Heugl. Orn. N.O.-Afr. ii. p. 1491 (1873).

Nos. 5, 7. ♀ ad. Ripon Falls, River Nile, May 21, 1890.—Eyelids pinkish flesh-colour ; bare skin of face flesh-colour ; bill dusky, with yellow markings ; iris crimson.

The second bird had the bare skin of the face of a bluish tint. Breeding.

"All the Cormorants were shot at the Ripon Falls. Thousands of the larger and smaller kinds, as well as Darters, flew up and down the river daily. The *Ploti* were moulting and very fat."—F. J. J.

Order ANSERIFORMES.

250. *CHENALOPEX ÆGYPTIACA*.

Chenalopex ægyptiacus (L.); Fischer, Zeitschr. i. p. 392 (1884; Pangani, Ronga River, Lake Naivasha); Salvad. Ann. Mus. Gen. (2) i. p. 241 (1884; Shoa); Fischer, J. f. O. 1885, p. 115 (Kingani, Tana River, Barawa); Reichen. J. f. O. 1887, p. 46 (Wembaere Steppes, Simiu River, Kagehi); Salvad. Ann. Mus. Gen. (2) vi. p. 319 (1888; (Torrent of Ciacià, Shoa); Shelley, Ibis, 1888, p. 306 (Jipi); Reichen. J. f. O. 1892, p. 6 (Victoria Nyanza).

No. 72. ♂ ad. Lake Naivasha, July 28, 1890.—Feet pink.

251. *QUERQUEDULA XANTHORHYNCHA*.

Anas flavirostris, Smith; Fischer, Zeitschr. i. p. 394 (1884; Lake Naivasha).

Anas xanthorhyncha, Forst.; Heugl. Orn. N.O.-Afr. ii. p. 1316 (1873); Salvad. Ann. Mus. Gen. (2) i. p. 243 (1884; Shoa); id. op. cit. vi. p. 320 (1888; Shoa).

No. 113. ♂. Machako's, Feb. 29, 1889.

252. *SARCIDIORNIS AFRICANA*.

Sarcidiornis africana, Eyton; Salvad. Ann. Mus. Gen. (2) i. p. 239 (1884; Lake Cialalakà, Shoa); id. op. cit. vi. p. 319 (1888; Lake Addò, Shoa); Shelley, P. Z. S. 1889, p. 371 (Kilimanjaro).

Sarcidiornis melanonota, Reichen. J. f. O. 1892, p. 6 (Bussisi).

No. 128. ♂ (head). Ukambani, April 14, 1889.

Order PELARGIFORMES.

Suborder ARDEÆ.

253. *BUTORIDES ATRICAPILLUS*.

Butorides atricapilla (Afzel.); Reichen. J. f. O. 1887, p. 50 (Kagehi).

- Ardetta atricapilla*; Shelley, Ibis, 1888, p. 304 (Tangani).
 No. 106. ♂. Kavirondo, Oct. 24, 1889.—Iris light yellow.
 Upper mandible black, lower black, fading into yellow
 at base; bare skin round the eye dull yellow; legs
 pale brown, fading into dirty yellow.

Suborder CICONIÆ.

254. CICONIA EPISCOPUS.

Ciconia episcopus, Finsch & Hartl. Vög. Ost-Afr. p. 722
 (1870); Fischer, J. f. O. 1885, p. 118 (Kipini; Lamu
 Coast).

Adult. Lake Naivasha.

Suborder SCOPÆ.

255. SCOPUS UMBRETTA.

Scopus umbretta, Gm.; Finsch & Hartl. Vög. Ost-Afr.
 p. 727 (1870); Fischer, Zeitschr. i. p. 384 (1884; Great
 Aruscha, Lake Naivasha); Salvad. Ann. Mus. Gen. (2) i.
 p. 229 (1884; Sciotalit, Shoa); Fischer, J. f. O. 1885, p. 118
 (Kau on the Osi River, Wito, Pangani); Reichen. J. f. O.
 1887, p. 48 (Lake Victoria, Ugaia); Salvad. Ann. Mus.
 Gen. (2) vi. p. 315 (1888; Shoa); Reichen. J. f. O. 1891,
 p. 142 (Ugogo).

No. 102. ♂ ad. Machako's, March 21, 1889.

Suborder PLATALEÆ.

256. PSEUDOTANTALUS IBIS.

Tantalus ibis, L.; Finsch & Hartl. Vög. Ost-Afr. p. 729
 (1870); Fischer, Zeitschr. i. p. 385 (1884); Salvad. Ann.
 Mus. Gen. (2) i. p. 230 (1884; Shoa); Fischer, J. f. O.
 1885, p. 117 (Malindi, Osi-Tana district, Barawa); Reichen.
 J. f. O. 1887, p. 49 (Ruwana River); Salvad. Ann. Mus. Gen.
 (2) vi. p. 316 (1888; Lake Cialalakà, Shoa).

No. 190. ♂. Turquel River, Sük, Jan. 20, 1890.—Bill dull
 yellow; bare skin of face bright crimson-red, fading
 into yellow; thighs brighter crimson, fading into flesh-
 colour; iris brown. One of a large flock.

257. IBIS HAGEDASH.

Ibis hagedash (Lath.); Finsch & Hartl. Vög. Ost-Afr.

p. 735 (1870); Fischer, Zeitschr. i. p. 386 (1884; Great Aruscha, Lake Naivasha); id. J. f. O. 1885, p. 117 (Osi-Tana mouth; Wami River).

No. 107. ♂. Victoria Nyanza, Oct. 24, 1889.—Iris white; front of foot and base of upper mandible dull purplish carmine.

Order CHARADRIIFORMES.

Suborder OTIDES.

258. OTIS MACULIPENNIS.

Otis maculipennis (Cab.); Fischer, Zeitschr. i. p. 388 (1884; Gelidja in Gallaland, Maurui to Aruscha); id. J. f. O. 1885, p. 116 (Paré Mts., Pangani, Kipini).

Eupodotis maculipennis, Shelley, P. Z. S. 1889, p. 371 (Useri River).

No. 163. ♂. Turquel, Sük, Jan. 9, 1890.—Iris white; feet white; bill dusky on upper mandible, pale brown on the lower. Scarce. First seen in Turquel.

No. 176. ♀. Karakaw, Turquel, Jan. 16, 1890.—Feet white; iris pale brownish yellow; upper mandible dusky, lower one pale horn-blue.

259. OTIS CANICOLLIS.

Otis canicollis, Reichen.; Fischer, Zeitschr. i. p. 388 (1884; Ngaruka); id. J. f. O. 1885, p. 116 (Massa, Barawa).

No. 82. ♂. Machako's, Feb. 22, 1889.

260. OTIS MELANOGASTER.

Otis melanogaster, Rüpp.; Finsch & Hartl. Vög. Ost-Afr. p. 614 (1870); Salvad. Ann. Mus. Gen. (2) i. p. 213 (1884; Daimbi, Shoa); Reichen. J. f. O. 1887, p. 48 (Kabondo); Salvad. Ann. Mus. Gen. (2) vi. p. 309 (1888; Lake Cialalakà, Shoa).

No. 85. ♂. Machako's, Feb. 27, 1889.

Suborder CURSORII.

261. ORTYXELUS MEIFFRENI.

Ortyxelos meiffrenii (Vieill.); Heuglin, Orn. N.O.-Afr. ii. p. 912 (1873).

- No. 145. ♂ ad. Turquel, Sük, Dec. 30, 1889.—“Little Courser.” Breeding. Feet white; iris light brown. Very rarely seen. Shot in scrub.

Suborder CHARADRII.

Fam. CHARADRIIDÆ.

262. *ÆGIALITIS TRICOLLARIS*.

- Ægialitis tricolor* (Vieill.); Salvad. Ann. Mus. Gen. (2) i. p. 218 (1884; Torrent of Kora, Shoa); id. op. cit. vi. p. 309 (1888; Shoa); Shelley, Ibis, 1888, p. 305 (Jipi).

Charadrius tricolor, Reichen. J. f. O. 1887, p. 46 (Irangi); Seebohm, Geogr. Distr. Charadr. p. 134 (1888).

- No. 41. ♂ ad. Ulu, Ukambani, Jan. 2, 1889.

- No. 75. ♂ ad. Makarungu, Ukambani.

263. *ÆGIALITIS ASIATICA*.

- Ægialitis asiaticus* (Pall.); Fischer, J. f. O. 1885, p. 115 (Usegua, Little Aruscha); Shelley, Ibis, 1888, p. 305 (Manda Island).

Charadrius asiaticus, Reichen. J. f. O. 1887, p. 47 (Ruwana River).

- No. 108. Victoria Nyanza, Oct. 25, 1889.—Iris dark brown; feet pale slaty white; toes dark slate-colour.

264. *CHETTUSIA MELANOPTERA*.

- Chettusia melanoptera* (Cretzschm.); Reichen. J. f. O. 1887, p. 47 (Ugaia).

Vanellus melanopterus Seebohm, Geogr. Distr. Charadr. p. 224.

- Stephanibyx melanoptera*, Salvad. Ann. Mus. Gen. (2) i. p. 220 (1884; Licce, Shoa); id. op. cit. vi. p. 310 (1888; Shoa).

- No. 81. ♀ ad. Machako's, Feb. 20, 1889.

265. *LOBIVANELLUS SENEGALENSIS*.

Lobivanellus senegalensis, Seebohm, Geogr. Distr. Charadr. p. 191 (1888); Salvad. Ann. Mus. Gen. (2) vi. p. 310 (1888; Lake Cialalakà, Shoa).

- Nos. 111, 112. Victoria Nyanza, Oct. 26, 1889.—Iris silvery grey; feet yellow; bill yellow, the tip black;

eyelids and lower part of lappet yellow, the upper part dark carmine.

Fam. SCOLOPACIDÆ.

266. TOTANUS GLAREOLA.

Totanus glareola (L.); Finsch & Hartl. Vög. Ost-Afr. p. 750 (1870); Fischer, J. f. O. 1885, p. 116 (Usegua); Reichen. J. f. O. 1892, p. 9 (Uganda).

No. 123. ♂. Machako's, April 5, 1890.

267. GALLINAGO MAJOR.

Gallinago major, Gm.; Heugl. Orn. N.O.-Afr. ii. p. 1199 (1873); Fischer, J. f. O. 1885, p. 116 (Zanzibar, Usegua); Shelley, Ibis, 1888, p. 307 (Jipi).

No. 113. ♂. Victoria Nyanza, Oct. 26, 1889.—Plentiful on edge of swamp.

268. GALLINAGO NIGRIPENNIS.

Gallinago nigripennis, Bp.; Finsch & Hartl. Vög. Ost-Afr. p. 769 (1870).

Gallinago equatorialis, Rüpp.; Salvad. Ann. Mus. Gen. (2) i. p. 224 (1884; Finn-Finni, Shoa).

No. 35. ♂. Mianzini, Masailand, Aug. 4, 1889.—Legs greenish olive. A second one seen.

Fam. PARRIDÆ.

269. APHALUS CAPENSIS.

Parra capensis, Smith; Finsch & Hartl. Vög. Ost-Afr. p. 783, note (1870).

Aphalus capensis, Elliot, Auk, v. p. 301 (1888).

No. 54. Lake Naivasha, Sept. 14, 1889.

This is by far the most northerly record for this Jacana, which has hitherto not been obtained further north than the Shiré River.

Order PODICIPEDIFORMES.

270. PODICEPS INFUSCATUS.

Podiceps infuscatus, Salvad. Ann. Mus. Gen. (2) i. p. 251 (1884; Lake Kilolé, Adda-Galla).

No. 59. Lake Naivasha, Sept. 16, 1889.

This specimen fully bears out the characters given by Count Salvadori for the separation of the African Great Crested Grebe. The bill is shorter, the upper surface and the flanks are blacker, and the white on the outer aspect of the scapulars is absent.

Order RALLIFORMES.

271. GALLINULA ANGULATA.

Gallinula angulata, Sundev.; Sharpe, ed. Layard's B. S. Afr. p. 624 (1884).

Gallinula minor, Boehm, J. f. O. 1882, p. 188 (Kakoma). No. 5. ♀. Teita, Dec. 3, 1888.

272. LIMNOCORAX FLAVIROSTRIS.

Ortygometra nigra (Gm.); Finsch & Hartl. Vög. Ost-Afr. p. 779 (1870); Fischer, Zeitschr. i. p. 386 (1884; Ngurumán, Lake Naivasha); id. J. f. O. 1885, p. 117 (Zanzibar, Osi-Tana district, Barawa); Reichen. J. f. O. 1887, p. 48 (Kagehi); id. J. f. O. 1889, p. 267 (Quilimane).

Limnecorax niger, Shelley, Ibis, 1888, p. 304 (Lamu). Nos. 147, 148. ♂ ♀ juv. Turquel, Suk, Jan. 1, 1890.—
Iris brown; bill dusky pea-green; feet olive-brown.
Caught in fish-trap on river bank.

Order COLUMBIFORMES.

273. TURTUR CAPICOLA.

Turtur capicola, F. & H.; Shelley, Ibis, 1883, p. 312; Fischer, Zeitschr. i. p. 377 (1884; Great Aruscha, Pangani, Matióm, Mossiro, Naivasha); id. J. f. O. 1886, p. 118 (Zanzibar); Reichen. J. f. O. 1887, p. 51 (Loeru, Ussure, Ugaia).

No. 128. ♂. Kitoshi, Dec. 13, 1889.—Legs dark carmine; bill dusky.

274. TURTUR LUGENS.

Turtur lugens (Rüpp.); Shelley, Ibis, 1883, p. 303; Salvad. Ann. Mus. Gen. (2) i. p. 208 (1884; Let-Marefià, Shoa); Fischer, J. f. O. 1885, p. 119 (Ngurumán); Salvad. Ann.

Mus. Gen. (2) vi. p. 303 (1888; Shoa); Shelley, P. Z. S. 1889, p. 369 (Taveta).

No. 108. ♀. Machako's, March 23, 1889.

275. *TURTUR SENEGALENSIS*.

Turtur senegalensis (L.); Shelley, Ibis, 1883, p. 315; Fischer, Zeitschr. i. p. 377 (1884; Mkaramo, Masinde); Salvad. Ann. Mus. Gen. (2) i. p. 208 (1884; Shoa); Fischer, J. f. O. 1885, p. 118 (Mombasa, Gallaland, Barawa, Pangani); Reichen. J. f. O. 1887, p. 51 (Ussandawi, Kagehi); Salvad. Ann. Mus. Gen. (2) vi. p. 304 (1888; Shoa).

No. 8. ♀. River Voi, Teita, Dec. 7, 1888.

No. 120. ♀. Machako's, April 4, 1889.

No. 158. ♂. Turquel, Sük, Jan. 7, 1890.—Irides black; edge of eyelid dull carmine; feet scaly carmine.

No. 159. ♂. Turquel, Jan. 7, 1890.

276. *CHALCOPELIA AFRA*.

Chalcopelia afra (L.); Finsch & Hartl. Vög. Ost-Afr. p. 554 (1870); Fischer, Zeitschr. i. p. 378 (1884; Pangani, Aruscha, Matióm, Ngurumán); id. J. f. O. 1885, p. 119 (Zanzibar, Coast districts, Wapokomoland); Salvad. Ann. Mus. Gen. (2) i. p. 304 (1884; Shoa); Reichen. J. f. O. 1887, p. 51 (Nassa, Speke Gulf); Shelley, P. Z. S. 1889, p. 369 (forests of Taveta); Reichen. J. f. O. 1892, p. 15 (Uganda).

No. 233. ♂. Savé, Elgon, 6000 feet, Feb. 7, 1890.—Iris brown; bill dark carmine, fading into pinkish yellow at tip; legs colour of an unripe plum. Plentiful.

277. *COLUMBA GUINEA*.

Columba guineensis, Bonn.; Shelley, Ibis, 1883, p. 278; Fischer, Zeitschr. i. p. 276 (1884; Ngurumán, Komboko, Lake Naivasha); id. J. f. O. 1885, p. 119 (Uniamuesi); Reichen. J. f. O. 1887, p. 51 (Ussandawi); Shelley, P. Z. S. 1889, p. 369 (Kilimanjaro).

Columba guinea, Salvad. Ann. Mus. Gen. (2) i. p. 206 (1884; Shoa).

No. 66. ♀. Mau, Sept. 19, 1889.

278. TURTUR SEMITORQUATUS.

Turtur semitorquatus (Rüpp.); Shelley, Ibis, 1883, p. 303; Fischer, Zeitschr. i. p. 376 (1884; Great Aruscha, Pangani, Mkaramo, Little Aruscha); Salvad. Ann. Mus. Gen. (2) i. p. 208 (1884; Shoa); Fischer, J. f. O. 1885, p. 108 (Zanzibar, Mombasa, Lamu, Wapokomoland); Reichen. J. f. O. 1887, p. 51 (Loeru, Schasche); Salvad. Ann. Mus. Gen. (2) vi. p. 303 (1886; Shoa); Shelley, Ibis, 1888, p. 303 (Manda Island); id. P. Z. S. 1889, p. 369 (Kilimanjaro).

No. 89. ♀. Lumbwa.—Iris dark, with a ring of gold; bill dull slate-colour; feet dull carmine. Fully developed egg inside.

No. 231. ♂.—Savé, Elgon, 6000 feet, Feb. 2, 1890. Bill dusky; eyelids dull dark carmine; irides pale crimson; feet dull purplish carmine, the colour of an unripe plum.

No. 232. ♀.—Savé, Elgon, Feb. 2, 1890. Plentiful. Mostly in pairs. Evidently about to breed.

279. PALUMBUS ARQUATRIX.

Palumbus arquatrix (Temm.); Shelley, Ibis, 1883, p. 283. *Stictænas arquatrix*, Salvad. Ann. Mus. Gen. (2) i. p. 207 (1884; Let-Marefià, Shoa); id. op. cit. vi. p. 303 (1888; Shoa).

No. 90. ♂. Machako's, March 8, 1889.

No. 283. ♂. Mt. Elgon, 8000 feet, Feb. 19, 1890.—Iris dark grey; feet and bill bright yellow; eyelids mottled orange and yellow. Plentiful at 9000 feet.

No. 76. ♂. Sotik, Oct. 4, 1889. Iris dark grey; feet, bill, and bare skin round eye bright lemon-yellow.

280. TRERON CALVA.

Treron calva (Temm.); Shelley, Ibis, 1883, p. 267; Reichen. J. f. O. 1887, p. 50 (Kagehi).

No. 130. ♂. Kitoshi, Dec. 16, 1889.—Iris blue; base of bill coral-pink, the tip white. Feet coral-red; toes white. Plentiful in flocks along the wooded water-courses between Mts. Elgon and Chibchiragnani.

Order GALLIFORMES.

Suborder PTEROCLETES.

281. PTEROCLES TRICINCTUS.

Pterocles tricinctus, Sw.; Heugl. Orn. N.O.-Afr. iii. p. 867.

Nos. 180. ♀; 182, 183. ♂. Turquel, Sük, Jan. 17, 1890.

—Bill dark greenish brown.

No. 214. ♀. Turquel, Sük, Jan. 29, 1890.

282. PTEROCLES GUTTURALIS.

Pterocles gutturalis, Smith; Heugl. Orn. N.O.-Afr. iii. p. 862 (1873); Fischer, Zeitschr. i. p. 379 (1884; Mabungo on Pangani River); id. J. f. O. 1886, p. 116 (Steppes between Paré Mts., Kilimanjaro, Maeru Mts., and Donjö Ngai); Reichen. J. f. O. 1887, p. 50 (Wembaere Steppes); Salvad. Ann. Mus. Gen. (2) vi. p. 306 (1888; Gumbicü, Shoa); Shelley, Ibis, 1888, p. 294 (Useri River); id. P. Z. S. 1889, p. 370 (Useri River); Reichen. J. f. O. 1891, p. 142 (Kjaia, Uniamuesi).

Nos. 85, 86. ♀ ad. River Athi, Masailand, Aug. 7, 1890.—Bill horn-blue or slate-colour; feet pale slate-colour; iris brown. Plentiful in small parties. Fully formed eggs in both.

283. PTEROCLES LICHTENSTEINI.

Pterocles lichtensteini, Temm.; Heugl. N.O.-Afr. ii. p. 865 (1873); Salvad. Ann. Mus. Gen. (2) i. p. 209 (1884; Amal Country, Shoa); id. op. cit. vi. p. 305 (1888; Shoa).

Nos. 179, 181. ♂. Turquel, Sük, Jan. 17, 1890.—Iris brown; bare skin round eye yellow; feet chrome-yellow. Plentiful in the stony, open, bushy plains of Turquel.

284. PTEROCLES DECORATUS.

Pterocles decoratus, Cab.; Heugl. Orn. N.O.-Afr. ii. p. 870 (1873); Fischer, Zeitschr. i. p. 378 (1884; Ronga River, Little Aruscha); id. J. f. O. 1885, p. 117 (Steppes between Paré Mts., Kilimanjaro, Maeru Mts., and Donjö Ngai); Reichen. J. f. O. 1887, p. 50 (Wembaere Steppes); Shelley, Ibis,

1888, p. 294 (Langora, Rombo, Useri River) ; id. P. Z. S. 1889, p. 369 (Useri River).

No. 88. ♀. Wilderness, River Tsavo, Aug. 22, 1890.—Bill horn-brown; eyelids pale greenish yellow; feet pale yellowish green.

Suborder H E M I P O D I I.

285. TURNIX LEPURANA.

Turnix lepurana (Smith) ; Finsch & Hartl. Vög. Ost-Afr. p. 593 (1870) ; Fischer, Zeitschr. i. p. 382 (1884 ; Pangani and Maurui) ; id. J. f. O. 1885, p. 117 (Zanzibar, coast-land from Dara Salam to Lamu, Maurui) ; Reichen. J. f. O. 1891, p. 142 (Mkigwa, Uniamuesi, Tabora).

No. 33. ♀. River Ndai, Kikumbuli, Dec. 23, 1888.

No. 157. ♀. Turquel, Sük, Jan. 6, 1890.—Iris pale yellowish white or straw-colour; feet whitish flesh-colour; bill dull blue or horn-colour.

Suborder P H A S I A N I.

Fam. PERDICIDÆ.

286. FRANCOLINUS COQUI.

Francolinus coqui (Smith) ; Ogilvie Grant, Ibis, 1892, p. 41 ; Shelley, P. Z. S. 1889, p. 370 (Duruma).

No. 1. ♂. Gulu-gulu, Nov. 9, 1888.—Legs yellow-ochre ; iris orange-red.

287. FRANCOLINUS STREPTOPHORUS, Ogilvie Grant, Ibis, 1891, p. 126, 1892, p. 42.

No. 81. ♀ juv. Masailand, July 29, 1890.—Iris bright brown; bill dusky above, dirty white below; legs greenish white. One of a pair seen at foot of Mt. Longhonot in open scrubby plain.

Nos. 341, 342. ♂ ♀. Mount Elgon, March 1, 1890.—Iris bright brown; bill dusky; gape and lower part of mandible yellow; feet dull yellow. First seen at south foot of Elgon. In pairs or singly.

The characters of this species are fully given by Mr. Ogilvie Grant in the 'Ibis' for 1891, p. 126.



J. G. Emilemanis del. et lith.

FRANCOLINUS GEDGII

Montarni Bros. imp.

288. *FRANCOLINUS GRANTI*.

Fracolinus granti, Hartl.; Fischer, Zeitschr. i. p. 382 (1884; Little Aruscha, Paré, coast to Kilimanjaro, Ngaruka, Ngurumán); id. J. f. O. 1885, p. 119 (Bagamoyo, Pangani, Mombasa, Kipini, Lamu, Barawa, Maurui); Reichen. J. f. O. 1887, p. 52 (Salandá, Kagehi, Ugaia); Shelley, Ibis, 1888, p. 303 (Taka, Manda Isl.); id. P. Z. S. 1889, p. 370 (Useri River); Ogilvie Grant, Ibis, 1892, p. 42.

No. 83. ♀. Machako's, Feb. 23, 1889.

No. 118. ♀. Victoria Nyanza, Oct. 27, 1889. The first seen or heard since leaving Ukambani.

289. *FRANCOLINUS ULUENSIS*.

Fracolinus uluensis, Ogilvie Grant, Ibis, 1892, p. 44.

No. 78. ♂. Machako's, Feb. 19, 1889.

No. 110. ♂. Machako's, March 26, 1889.

Mr. Ogilvie Grant has recently described this species from Mr. Jackson's collection (*antea*, p. 44).

290. *FRANCOLINUS ELGONENSIS*.

Fracolinus elgonensis, Ogilvie Grant, Ibis, 1891, p. 126, 1892, p. 45.

No. 269. ♀. Mount Elgon, Feb. 15, 1890.—Iris brown; bill dusky horn-colour, lower mandible fading into whitish-brown colour at base; feet pale yellowish white. Shot out of a covey of four at 11,000 feet. Apparently the same species as seen on Mau at about 9000 feet.

This is another of Mr. Jackson's discoveries, and has been described by my colleague Mr. Ogilvie Grant from the above-mentioned specimen.

291. *FRANCOLINUS GEDGII*. (Plate XIV.)

Fracolinus gedgii, Ogilvie Grant, Ibis, 1891, p. 124, 1892, p. 47.

No. 1. ♂ ad. Elgon Plains, Feb. 2, 1890.—Legs brown in front; reddish from behind; iris dark brown.

The characters which distinguish this new species, named in honour of Mr. Gedge, who accompanied Mr. Jackson on his expedition, have been fully given by Mr. Grant (*l. c.*).

292. *FRANCOLINUS JACKSONI*.

Francolinus jacksoni, Ogilvie Grant, Ibis, 1891, p. 123, 1892, p. 51, pl. i.

No. 15. Mianzini, Masailand, Aug. 17, 1889.—Iris brown; eyelids coral-red; bill dark coral-red; bare part of thighs coral-red, dusky behind.

No. 33. Mianzini, Masailand, Aug. 29, 1889.—Bill dark coral-red; eyelids brighter.

This splendid species is very distinct from any of the other African Francolins, as will be seen from Mr. Grant's descriptions.

293. *FRANCOLINUS HILDEBRANDTI*.

Francolinus hildebrandti, Cab. [= ♀]; Grant, Ibis, 1892, p. 49; Fischer, Zeitschr. i. p. 382 (1884; Naivasha, Great Aruscha); id. J. f. O. 1885, p. 125 (Ngurumán).

Francolinus altumi [= ♂], Fischer & Reichen. J. f. O. 1884, p. 179; Fischer, J. f. O. 1885, p. 120 (Maurui); Reichen. J. f. O. 1887, p. 51 (Ussandawi); Shelley, P. Z. S. 1889, p. 370 (syn. excl.; Useri River, Kilimanjaro).

No. 58. ♂. Lake Naivasha, Sept. 14, 1889.—Iris brown; feet coral-red; lower mandible coral-red; rest of bill dusky.

Nos. 64, 65. ♂ ♀. Masailand, July 25, 1890.—Lower mandible orange-yellow; upper one dusky horn-brown, orange at gape; feet bright coral-red; iris brown.

Mr. Ogilvie Grant has already drawn attention to the interesting specimen procured by Mr. Jackson, which is moulting from the "*hildebrandti*" plumage into the "*altumi*" plumage, and which seems to prove that *F. altumi*, F. & R., is only the male of *F. hildebrandti*, Cab.

294. *PTERNISTES INFUSCATUS*.

Pternistes infuscatus, Cab.; Fischer, Zeitschr. i. p. 383 (1884; Little Aruscha); id. J. f. O. 1885, p. 120 (Maurui, Paré, Mambrui); Shelley, P. Z. S. 1889, p. 370 (Useri River); Ogilvie Grant, Ibis, 1892, p. 55.

Pternistes rubricollis, Reichen. J. f. O. 1891, p. 143 (Ugogo, Bibisanda, Uniamuesi).

No. 53. ♂. Doreta, Masailand, July 18, 1890.—Irides brown; bill dark brownish horn; bare skin round eye and chin red; throat bright yellow; feet very dark shiny brown. Mostly in pairs at this season. Several broods of young ones seen.

295. *PTILOPACHYS VENTRALIS*.

Ptilopachys ventralis (Val.) : Heugl. Orn. N.O.-Afr. iii. p. 879 (1873).

No. 169. ♂. Ngoboto, Sük, Jan. 14, 1890.—“Hill Francolin.” Iris brown; bare skin round eye and base of chin dull carmine; base of bill also carmine, the tips dull dusky yellow; feet dark coral-pink. First seen on Jan. 10th, observed in pairs on rough stony hill-sides.

296. *COTURNIX DELEGORGUEI*.

Coturnix delegorguei, Deleg.; Finsch & Hartl. Vög. Ost-Afr. p. 591 (1870); Fischer, Zeitschr. i. p. 381 (Bondei); id. J. f. O. 1885, p. 121 (Gelidja); Reichen. J. f. O. 1887, p. 53 (Kawanga); Shelley, Ibis, 1888, p. 303 (Jipi, Kili-manjaro).

No. 19. ♂. Teita, Dec. 13, 1888.

Fam. NUMIDIDÆ.

297. *NUMIDA CORONATA*.

Numida coronata, Cab.; Elliot, Monogr. Phasian. pl. 40; Fischer, Zeitschr. i. p. 380 (1884; Ngurumán, Ngaruku); id. J. f. O. 1885, p. 119 (Takaungu, Pangani, Naivasha); Reichen. J. f. O. 1887, p. 51 (Kibaia).

No. 77. ♂. Makarungu, Ukambani, Feb. 17, 1889.

298. *NUMIDA PTILORHYNCHA*.

Numida ptilonorhyncha, Licht.; Finsch & Hartl. Vög. Ost-Afr. p. 570 (1870); Elliot, Monogr. Phasian. pl. 42; Salvad. Ann. Mus. Gen. (2) i. pp. 212, 272 (Adda-Galla); id. op. cit. vi. p. 309 (1888; Shoa).

No. 141. ♀. Turquel, Sük, Dec. 27, 1889.—Iris brown; bare skin of neck, face, and wattles blue. Thousands of them.

No. 150. ♂. Turquel, Sük, Jan. 3, 1890.

No. 215. ♀. Turquel, Sük, Jan. 29, 1890.

299. *ACRYLLIUM VULTURINUM*.

Acryllium vulturinum (Hardw.); Fischer, Zeitschr. i. p. 381 (1884; Ronga River and Litema Mts.); id. J. f. O. 1885, p. 119 (Barawa, Massa, Pangani River from Mkramo to Aruscha).

Numida vulturina, Hardw.; Finsch & Hartl. Vög. Ost-Afr. p. 575 (1870); Shelley, P. Z. S. 1889, p. 371 (Useri River, Tana River, Duruna River).

No. 6. ♂ ad. Butzuma, Teita, Dec. 6, 1888.

Conclusion.

The concluding remarks on Mr. Jackson's famous collection must of necessity be brief, for the story has been told in the foregoing pages, so far as the record of the specimens is concerned. As regards the notes which Mr. Jackson has appended to the latter, they are sufficient to show the care with which he worked; but it is only just to him to say that these notes are taken from his rough 'Diary,' and it is to be hoped that he will before long find time to give us a paper on the habits and distribution of the birds observed by him during his adventurous journey. As Englishmen, we must all be proud of our countryman, whose many responsibilities can have left him but little leisure for the observation of Natural History; and it is to be wished that there were a few more explorers imbued like Mr. Jackson with the love of science, and sustained by the energy which enables a naturalist, after a hard day's march, to work till the small hours of the morning in preparing the specimens procured at random during the day. It is the lustre which rewards scientific exploration like that of Emin Pasha which will also be the meed of travellers like Mr. Jackson; and, however remarkable may be the energy which carries a man through vast and inhospitable forests, or the heroism which uproots the flags of a friendly nation, there will be a more enduring reward in future for the traveller who not only traverses unknown

districts, but who adds a mass of information to the natural history of a country such as Mr. Jackson has done.

With great regret I have refrained from giving a comparative table of the species of the Elgon district, such as I gave in my account of Mr. Whitehead's Kina Balu collection ('Ibis,' 1891, p. 274), but "the time is not yet!" Until we know more of the ornithology of the other great mountain ranges of Central Africa, of Kenia, of Ruwenzori, of the other mountains which probably occur in succession till the Peak of the Camaroons is reached, it is impossible to form a just comparison of their respective avifaunas; but it is certainly interesting to find that in his latest paper on the Birds of the Camaroons (J. f. O. 1892, pp. 177-195) Dr. Reichenow records several Uganda species (such as *Pedilorchynchus stuhlmanni* and *Lanius mackinnoni*), showing a still closer connection between the birds of Elgon and the Camaroons than was evidenced even by the presence of such allied species as *Trachyphonus purpuratus* and *T. elgonensis*, *Heliobucco cinereiceps* and *H. bonapartii*, and others.

XLVI.—Remarks on the correct Generic Name of the Linnets.

By THE EDITOR.

DR. SHARPE (Cat. Birds, xii. p. 235), Mr. Howard Saunders (Manual of British B. p. 179), and other British Ornithologists, apparently misled by Dr. Stejneger, have lately altered the generic name of the Linnets to *Acanthis*. But I cannot at all agree with Dr. Stejneger's arguments ('Auk,' i. p. 145) on this subject. Bechstein, in his 'Ornithologisches Taschenbuch' (1802), arranged the fourteen species of the genus *Fringilla* which he recognized in four subgenera, giving short characters (taken from the shape of the bill and from the nature of the food) to each of them. The list of his subgeneric sections and species is as follows:—

a. FRINGILLA.

- | | |
|-------------------------------|-------------------------|
| 1. <i>F. cœlebs</i> . | 4. <i>F. montana</i> . |
| 2. <i>F. montifringilla</i> . | 5. <i>F. petronia</i> . |
| 3. <i>F. domestica</i> . | 6. <i>F. nivalis</i> . |

b. LINARIA.

- | | |
|---------------------------|-----------------------------|
| 7. <i>F. cannabina</i> . | 9. <i>F. flavirostris</i> . |
| 8. <i>F. citrinella</i> . | |

c. ACANTHIS.

- | | |
|---------------------------|-------------------------|
| 10. <i>F. carduelis</i> . | 12. <i>F. linaria</i> . |
| 11. <i>F. spinus</i> . | 13. <i>F. flammea</i> . |

d. CALCARIUS.

- 14.
- F. lapponica*
- .

It is quite evident from this list, and from the subgeneric characters given by Bechstein to *Acanthis* ("mit einem dünnern, an den Seiten etwas zusammen gedrückten, und scharf und lang zugespitzten Schnabel"), that his *Acanthis* was intended for the Goldfinch (*F. carduelis*) and the Siskin (*F. spinus*), and that it is a perversion of Bechstein's intention to transfer it, as Dr. Stejneger proposes, to the Redpoll (*F. linaria*), although Bechstein unaccountably placed the latter in the same group. Bechstein's subgeneric term for the Linnets was evidently *Linaria*, not *Acanthis*. *Acanthis*, therefore, is simply a synonym of *Carduelis*, and should not be used for the Linnets. Indeed, Dr. Stejneger did not seek to apply it to the Linnets, but to the Redpolls (which he keeps separate from them), instead of *Ægiothus* of Cabanis.

Again, I may remark that *Linota*, as a generic term, appears to have been first published by Bonaparte in 1831 in the "Aggiunte e correzioni" to his 'Saggio di una Distribuzione metodica degli Animali vertebrati' (p. 141). This is seven years earlier than the 'Comparative List' (1838) quoted by Dr. Sharpe and others. The correct generic synonymy of the Linnets is therefore as follows:—

Type.

- | | |
|---|--------------------------|
| <i>Linaria</i> , Bechst. Orn. Taschenb. i. p. 121 (1802) | <i>F. cannabina</i> . |
| <i>Cannabina</i> , Brehm, Isis, 1828, p. 1277 (1828) | <i>F. cannabina</i> . |
| <i>Linota</i> , Bp. Saggio Distr. met. Anim. p. 141 (1831) | <i>F. cannabina</i> . |
| <i>Ægiothus</i> , Cab. Mus. Hein. i. p. 161 (1851) | <i>F. linaria</i> . |
| <i>Linacanthus</i> , Des Murs, Enc. d' Hist. Nat., Ois. v. p. 303 | |
| (1854) | <i>F. linaria</i> . |
| <i>Agriospiza</i> , Sund. Meth. nat. Av. Tent. p. 23 (1872) | <i>F. flavirostris</i> . |

It would appear, therefore, that *Linaria*, previously used in Botany, being rejected, *Cannabina* is the oldest name applicable to the Linnets, while those who separate the Redpolls from the Linnets should call the former group *Ægiothus*. At the same time, not being in favour of changing well-established terms on technical grounds, I think it unnecessary to alter the term *Linota*, which is used for the Linnets and Redpolls together in the B. O. U. List.

XLVII.—*Note on Nestor norfolcensis*, Pelz.

By H. B. TRISTRAM, D.D., F.R.S.

ON studying Count Salvadori's descriptions of *Nestor productus* and *N. norfolcensis* in the British Museum Catalogue of Birds (xx. pp. 9, 10), I was surprised to find that a mounted specimen which has been for twenty years in my possession corresponds with the description of *N. norfolcensis*, and not with that of *N. productus*. I had never thought before of comparing my bird with any other specimen. Unfortunately the most striking peculiarity of the Norfolk Island Nestor, the sulcated ridge on the upper mandible, is wanting in my specimen, for the sheath had long been lost before it came into my possession, but the core shows that the bill must have been more massive than in *N. productus*. The lower mandible is perfect. I have now examined the specimens of the Philip Island Parrot in the British Museum, and in the Norwich, Cambridge, and Derby (Liverpool) Museums. They all agree together in the points of distinction given by Latham and Pelzeln as separating *N. productus* from the Norfolk Island species, while my specimen has all the characters specified as belonging to *N. norfolcensis*. The tail is of a uniform brown, without the least trace of bars, the tail-feathers towards the base of their inner webs being pale red, but not toothed with red, as in the other species. The axillaries and under wing-coverts are white without a shade of yellow, and the inner webs of the wing-primaries are toothed with white. These last particulars are not given by Latham, but are mentioned

by Pelzeln, and the specimen agrees with the diagnosis of both authors. In measurements it seems slightly smaller than its congener.

I am sorry I am not able to give a complete history of my specimen. I obtained it by exchange from the Trustees of the Derby Museum, to whom it had come from the Knowsley collection, along with the famous White Porphyrio (*cf.* Rowley, Orn. Misc. i. p. 37). It is possible that it may have been the example mentioned as having been in the possession of Governor Hunter. It may have been in the Leverian Museum, and thence obtained by the Earl of Derby. But whencesoever derived by him, it is to be feared that it is too probably the last relic of an extinct race.

XLVIII.—*Note on the Rubecola tytleri of Jameson.*

By WM. EAGLE CLARKE, F.L.S.

AT a meeting of the Wernerian Society of Natural History, Edinburgh, on the 25th of April, 1835, Professor Jameson exhibited and described what he believed to be a new bird, to which he gave the name *Rubecola tytleri*. Of this species no adequate description appears to have been published. In the 'Memoirs of the Wernerian Society' (vii. p. 487), and in the 'Edinburgh New Philosophical Journal' (xix. p. 214), however, there appeared, in identical terms in both publications, an account of the "Proceedings" of the meeting, and in this the bird is shortly described as agreeing "in the grouping of the colours with the common Robin, yet, in the form of the bill, it presented as it were a link between the genus *Rubecola* and *Phœnicura*." The specimen is also described as having been sent to the Edinburgh University Museum by Lieut. Tytler "from the Himalayan Mountains."

If this practically forgotten species had not been awarded synonymic value in several works, if some doubt did not exist as to its identity, and if it had not been, as I am now able to state, associated with the wrong species, then *Rubecola tytleri* might have been allowed to remain in the shades of obscurity in which Professor Jameson left it.

Under the circumstances, however, it was, perhaps, not undesirable that the type specimen should be forthcoming.

While engaged in re-arranging the Bird-collections in the Edinburgh Museum of Science and Art, with which the University Collections have long been incorporated, I came across the type specimen of *Rubecola tytleri*. An examination of it leaves no room for doubt that it is simply an old male of *Muscicapa parva*, Bechstein, and that it is not referable to *M. albicilla*, Pallas (= *M. leucura*, Gmelin), with which it has been hitherto, though doubtfully, associated.

One more point remains for notice regarding this bird, namely, that its synonymic appellation is usually quoted as *Erythaca tytleri* (cf. Cat. B. Brit. Mus. iv. p. 162). I am not yet aware that Professor Jameson ever applied the generic name *Erythaca* to this species; and he certainly has not done so in the references above furnished.

It may be of interest to note that Mr. Oates ('Fauna of British India,' Birds, ii. p. 9) remarks that he has not seen an example of *Siphia* [= *Muscicapa*] *parva* from any portion of the Himalayas.

XLIX.—Notices of recent Ornithological Publications.

[Continued from p. 466.]

94. *Baldamus on the Cuckoos and other parasitic Birds.*

[Das Leben der europäischen Kuckucke, nebst Beiträgen zur Lebenskunde der übrigen parasitischen Kuckucke und Stärlinge. Von A. C. Eduard Baldamus. Mit 8 Farbendrucktafeln. Berlin, 1892. 224 pp.]

The veteran ornithologist Dr. E. Baldamus, whose studies on the Cuckoo question are so well known to us, returns to his favourite theme in the present volume, and gives a summary of the results which he has arrived at. So far as we can make out his views, it seems that the celebrated theory of the similarity of the Cuckoo's eggs to those of the foster-parent is not much advanced in this publication, although fresh instances in support of it are given. Nor is any explanation of the facts brought forward, although Prof.

Newton and others have made suggestions on this subject. But the question arises, has the author ever read Prof. Newton's article and other recent English publications on the Cuckoo question? It would certainly seem as if he had never heard of Hudson's most important observations on the parasitic Icteridæ of Argentina (see P. Z. S. 1874, p. 153, and Arg. Orn. i. p. 72); at all events he does not refer to them, and on this part of his subject the information given is by no means up to date.* The final result arrived at by the author, as given in the penultimate paragraph of this memoir, is, as regards parasitism, that the Cuckoos do not sit themselves because their eggs are so slowly developed that one general sitting would not do for them, and that it is, therefore, necessary that they should be incubated separately, which can only be done by foster-mothers. But it seems to us quite as likely that parasitism was the original cause of the slow development of the consecutive eggs.

Eight coloured plates appended to the memoir contain figures of the eggs of various parasitic *Cuculidæ* and *Icteridæ* and their foster-parents.

95. *Beddard on Animal Coloration.*

[Animal Coloration: an account of the principal facts and theories relating to the Colours and Markings of Animals. By Frank E. Beddard, M.A. London: Swan Sonnenschein & Co., 1892.]

This useful volume contains a complete account of the modern theories of animal coloration—protective, warning, mimicking, and sexual—with illustrations drawn from many groups of the animal kingdom.

Birds, though sharing with insects the brightest colours and tints found in nature, do not offer so many instances of the more striking phenomena of this kind as Insects.

Among instances of so-called protective mimicry in birds are mentioned the Cuckoos, in which family the genera *Centropus* and *Carpococcyx* show much resemblance to the Gallinaceous Birds, and *Cuculus* and its allies, more especi-

* For instance, no mention whatever is made of *Molothrus rufo-axillaris* and its excessively curious habits, as observed by Mr. Hudson.

ally *Hierococcyx*, seem to mimic the Hawks. A further and even more striking instance, not mentioned by Mr. Beddard, is the similarity of the Indian Cuckoo *Surniculus lugubris* to the common Indian Drongo or King Crow, *Dicrurus ater*. Whether these likenesses are really advantageous to the mimicking species, and are real instances of mimicry (comparable to the classical instances of the South American *Leptalis* and its corresponding Heliconid), it is not easy to say. Mr. Beddard thinks that in some cases these likenesses, of which several other instances are given, may be due to real structural affinities.

A very interesting example of protective coloration in birds is given in the case of the South American Bittern (*Butorides involucris*), which was observed by Mr. W. H. Hudson to conceal itself very successfully by flying in among tall reeds and clinging there in an upright position, where its colours and even its shape harmonized closely with its surroundings.

Finally a long chapter is devoted to sexual coloration, of which Birds undoubtedly show many striking examples. Mr. Beddard by no means attributes their sexual differentiation of colour to sexual selection only. It may be due in part, he says, to the different mode of life of the two sexes. We meet with sexual coloration in animals which cannot be moved by any choice or æsthetic preference; but it is also true that it is most highly developed in the higher animals, to which, however, the Mammals form a very striking exception; so that on the whole there are probably several very different causes all tending towards sexual coloration.

This indicates the whole drift of the book, which is in fact a protest against the too hasty and badly digested generalizations with regard to the facts of colour, form, and habits among animals that are so common at the present time.

Mr. Beddard's volume, which should be of great interest not only to the professed naturalist but also to the general public, is very well illustrated with four coloured plates and a large number of woodcuts.

96. *Bronn's 'Thier-Reich' (Aves).*

[Dr. H. G. Bronn's Klassen und Ordnungen des Thier-Reichs wissenschaftlich dargestellt in Wort und Bild. Sechster Band. Vierte Abtheilung: Vögel. Von Hans Gadow u. Dr. Emil Selenka. Leipzig u. Heidelberg, 1891.]

The recently issued number of the "Aves" of 'Bronn's Thier-Reich,' containing Lieferungen 37 to 41, concludes the Anatomical portion of this standard work. The first four numbers, prepared by Dr. Selenka, were issued in 1869 and 1870, after which the subject slept until 1884, when the authorship was taken up by Dr. Gadow, who has now brought this volume to a conclusion.

Prof. Selenka's contribution contained the Osteology and the commencement of the Myology, which was finished by Dr. Gadow, who also has given us chapters on the Nervous System, the Sense-organs, the Pterylosis, and the Digestive, Respiratory, Vascular, and Urinogenital Systems, concluding with a general account of the Embryology and Development, thus making altogether a volume of 1008 pages, illustrated by 59 plates.

If we understand right, Dr. Gadow proposes to issue a second volume, on the Systematic Arrangement of Birds, of which he has given us a foretaste in a paper lately read before the Zoological Society of London. *

97. *Butler on the Carolina Parakeet.*

[Notes on the Range and Habits of the Carolina Parakeet. By Amos W. Butler. Auk, ix. p. 49.]

The former range of the Carolina Parakeet (*Conurus carolinensis*), now almost exterminated, and confined to one or two restricted areas in the Southern States, is described in this article. Within historic times this Parakeet extended into New York, Pennsylvania, Maryland, Kansas, Nebraska, and probably Colorado. In Indiana and Ohio it was a characteristic bird. Wilson mentions its occurrence near Lake Michigan in lat. 42°.

98. *Capellini on an Egg of Æpyornis.*

[Sul primo uovo di *Æpyornis maximus* arrivato in Italia. Memoria del Prof. Giovanni Capellini. Bologna. 1889. Pp. 22.]

This memoir (separate copy of one in the Mem. R. Acc. Sc. Inst. di Bologna, ser. iv. vol. x.) contains an account of an egg of *Æpyornis* procured from Southern Madagascar for the writer by Dr. E. Pélagaud, of Lyons. The egg measures m. 0.300 by m. 0.220. Its contents were examined, but the examination did not lead to any very definite results, except that the egg had probably contained an embryo.

99. *Chapman on the Species of Quiscalus.*

[A Preliminary Study of the Grackles of the Subgenus *Quiscalus*. By Frank M. Chapman. Bull. Am. Mus. Nat. Hist. iv. p. 1.]

Mr. Chapman has collected, through the assistance of his fellow-workers on N. American birds, a series of 800 specimens of the Grackles of the subgenus *Quiscalus*, with the laudable object of solving the *vexata quæstio* of the limits of the species and subspecies of this difficult group. His conclusions are (1) that *Q. æneus*, which ranges from Canada to the Rio Grande, only varies in coloration in the "limited part of its habitat adjoining the area of *Q. quiscula*, with which it completely intergrades"; (2) that *Q. quiscula* assumes three phases of coloration, the first of which reaches its extreme development (commonly called *Q. quiscula aglaeus*) at the southern limit of the bird's range (where the third phase is unknown); while the third phase occurs at its northern limit, where the first is unknown, and the second phase (connecting the first and the third) is most abundant at the centre of the range, where, however, the other two phases also occur. Mr. Chapman is of opinion that we have here a case of two distinct species, the intergradation of which is due to hybridization where their habitats adjoin. For the reasons why he adopts this view instead of the more obvious one of the imperfect segregation of two representative forms we must refer our readers to his paper.

100. *Dalgleish on the Petrels of Madeira.*

[Notes on the Petrels of Madeira and adjoining Seas. By J. J. Dalgleish, M.B.O.U. Proc. R. Physical Soc. Edinb. xi. p. 27.]

Mr. Dalgleish gives a *résumé* of the present state of our knowledge of the Petrels of the Madeiran Seas, which resort to the island-groups of Porto Santo and the Desertas for breeding-purposes. They are of six species at least, namely, *Puffinus kuhli*, *P. obscurus*, *P. anglorum*, *Bulweria columbina*, *Procellaria leucorrhoa*, and *Æstrelata mollis*, of all of which eggs have been obtained. Besides these, *Procellaria pelagica*, *Oceanites oceanicus*, and *Pelagodroma marina* * are stated to have been observed "off Madeira."

It would, moreover, seem certain from what Mr. Grant tells us (*Ibis*, 1891, p. 469) that *Puffinus assimilis* is also found on the Desertas, whether nesting or not is as yet uncertain. Mr. Salvin assures us that the late Mr. Harcourt was wrong (*cf.* *Ibis*, 1891, p. 627) in following Yarrell, as to the identity of *P. assimilis* with *P. obscurus*. These two species are quite distinct.

101. *Elliot on "Acquired Characters."*

[The Inheritance of Acquired Characters. President's Address delivered at the Annual Meeting of the American Ornithologists' Union, New York, Nov. 18, 1891. By D. G. Elliot. *Auk*, ix. p. 77.]

Mr. Elliot addresses his colleagues of the American Ornithologists' Union on the inheritance of acquired characters in a very sensible way. He points out some of the many difficulties that the reception of this new dogma would involve, and begs for further investigations and experiments that may throw more light upon this obscure question.

102. *Forbes on Avian Remains from Timaru.*

[On Avian Remains found under a Lava-flow near Timaru, in Canterbury. By H. O. Forbes. Trans. New Zealand Inst. 1890, p. 366.]

Mr. Forbes describes some remains of birds lately found in loess covered by a lava-stream near Timaru, in the province

* On this species *cf.* Macpherson, *Ibis*, 1891, p. 602.

of Canterbury, New Zealand. They are identified as belonging to *Alpteryx australis* and several species of *Dinornis*. The formation in which they are found, although covered by a lava-flow, is considered to be of "new Pliocene or even Pleistocene age."

103. *Gadow on the Anatomy of Opisthocomus.*

[Crop and Sternum of *Opisthocomus cristatus*: a contribution to the question of the correlation of organs and the inheritance of acquired characters. By Hans Gadow. Proc. Roy. Irish Acad. ser. 3, vol. ii. p. 147.]

Dr. Gadow describes and figures the peculiar crop and stomach of the Hoatzin, *Opisthocomus cristatus*, and preaches us an excellent sermon with this extraordinary Neotropical monotype for his text. This, he tells us, is an instance in which "an obviously primary modification, itself referable to mechanical strain during the life of the adult, seems to have caused other organic changes, which are repeated in the embryo at a time before such a strain could come into play." Similar cases have been previously recorded by the same writer (Zool. Jahrb. Abth. f. Syst. v. p. 629). It is, indeed, sufficiently manifest that the enormous crop of the Hoatzin has produced the depression of the furcula, its partial fusion with the sternum, and the distortion of the anterior margin of the carina which are characteristic of this curious form. In nestlings of a week old all these peculiarities are already present. Similar conditions prevail in embryos of the last week before hatching, and even in younger embryos their commencement is plainly apparent. We have here, therefore (*pace* Weissman), a clear case of the inheritance of acquired characters.

104. *Godman and Salvin's 'Biologia Centrali-Americana.'*

[*Biologia Centrali-Americana*; or, Contributions to the Knowledge of the Fauna and Flora of Mexico and Central America. Edited by F. DuCane Godman and Osbert Salvin. (Zoology.) Part CII. 4to. London: 1892. Published for the Editors by R. H. Porter, 18 Princes Street, Cavendish Square, W.]

Since our last notice of the 'Biologia Centrali-Americana' (above, p. 451), another portion of the "Aves" of this great work has been issued. The discussion of the Central-American Trochilidæ, of which no less than 118 species are now recognized, is commenced, and the genera *Heliothrix*, *Hemistephania*, *Glaucis*, *Iache*, *Phæoptila*, *Chlorostilbon*, *Thalurania*, *Microchera*, *Callipharus*, *Eupherusa*, *Elvira*, *Hypuroptila*, and *Lampornis* are treated of. The arrangement followed is quite a new one—that of Mr. Salvin's new catalogue (Cat. B. Brit. Mus. vol. xvi.), in which the serration of the bill is used as a character to divide the Trochilidæ into three sections. The genera first taken belong to the first section, "*Trochili serrirostres*."

The following species are figured in this part:—*Oreopyra calolæma*, *Delattria hemileuca*, *Hemistephania veraguensis*, and *Chalybura melanorrhœa*.

105. *Hutton on the Moas.*

[On the Classification of the Moas. By Capt. F. W. Hutton, F.R.G.S. Abstract of paper read to the Canterbury Philosophical Institute on October 1st, 1891.]

This is an abstract of what appears to be an important memoir on the Dinornithidæ. The family is divided by Capt. Hutton into seven genera, to which 26 species are referred. The generic characters are based "chiefly on the skulls," but also partly on "the sternum, the pelvis, and the robustness of the leg-bones." The species are "distinguished almost entirely by size." The genera recognized are *Dinornis*, (with two subgenera *Dinornis* and *Tylopteryx*), *Palapteryx*, *Anomalopteryx*, *Cela*, *Mesopteryx*, *Syornis*, and *Euryapteryx*. *Dinornis excelsus*, *D. validus*, *D. firmus*, *D. potens*, *D. torosus*, *Palapteryx plenus*, *Anomalopteryx antiquus*, *Euryapteryx ponderosus*, and *E. pygmeus* are characterized as new species. It seems to us that it will be difficult to reconcile Capt. Hutton's arrangement with that of the same group lately given by Mr. Lydekker in his Catalogue of Fossil Birds (cf. Ibis, 1891, p. 456).

106. *Irby's Key List of British Birds.*

[British Birds : Key List. By Lieut.-Col. L. Howard Irby, F.L.S. Second edition, revised and enlarged. London : R. H. Porter.]

Col. Irby has published a second edition of his Key List of British Birds, "revised and enlarged." It is "not intended for scientific ornithologists, but for those who have only a slight knowledge of birds, so as to enable them to determine a species without having to search through bulky volumes." Col. Irby now recognizes 376 birds as "British," against 377 in his first edition. The salient characters of each of these are pointed out, and a concise summary of their mode of occurrence, whether resident, regular visitant, occasional visitant, or straggler, is likewise given. The habitat or geographical range of the rarer species is stated in marginal notes. The nomenclature and arrangement are those of the 'Ibis' List "with some modifications." Col. Irby's Key List will, we think, be found very useful to those for whom it is intended, especially when used in conjunction with some recognized manual or text-book on the same subject.

107. '*Irish Naturalist*.'

[The '*Irish Naturalist*,' a monthly Journal of general Irish Natural History. Edited by George H. Carpenter, B.Sc. Lond., and R. Lloyd Praeger, B.A., B.E., M.R.I.A. Vol. i. Nos. 1-4, April-July, 1892.]

Having regard to the political aspirations of Ireland, it was quite to be expected that the Naturalists of that portion of the United Kingdom should wish to have an organ of their own. That all the existing Natural History Societies in Ireland should have agreed to support it is a gratifying proof of the superiority of science to politics. The first number of the journal started under these auspicious circumstances contains several ornithological articles. Mr. A. G. More writes upon recent additions to the list of Irish birds. Nine such are specified, while one (*Sterna anglica*) is noted as to be struck off the Irish List. Mr. R. J. Ussher comments on the marked increase of the Crossbill (*Loxia curvirostris*) in Ireland. Formerly merely a straggler, it appears of late years to have

become a resident and breeding species. Shorter notes on birds are also given in other numbers of the 'Irish Naturalist,' and Mr. R. Patterson catalogues the birds of Rathlin Island, co. Antrim.

108. *Mivart's 'Elements of Ornithology.'*

[Birds: the Elements of Ornithology. By St. George Mivart, F.R.S. With 174 illustrations, whereof 140 are original drawings. London: Porter and Dulau. 1 vol., 330 pp., sm. 8vo. 1892.]

It was with some surprise, we confess, that we first heard that Dr. Mivart was engaged in writing a book upon birds. We were still more surprised, however, when we found what a nice little volume he had produced, after what, we believe, was but a few months' labour. Mivart's 'Birds' cannot, of course, be placed quite in the same category as Günther's 'Fishes' and Flower and Lydekker's 'Mammals.' But it is, nevertheless, a useful book, and will be much appreciated by those who are commencing the study of Ornithology.

Dr. Mivart begins his work with a long "introduction," in which he reviews the principal groups of the whole order of birds, and mentions the characteristic species of each of them. This introduction is illustrated by a series of 140 figures, very nicely drawn and printed in the text. The drawing of these illustrations (by Keulemans, we believe) is excellent, but the process by which they were engraved leaves, in many cases, something to be desired. It would have also been better, we think, to have arranged this part of the volume exactly or more nearly in the same order as is subsequently put forward in chapter vi. The interposition of the Penguins between the Auks and the Puffins, and the location of the Humming-birds among the true Passeres, may cause the unwary student to err concerning the true affinities of these birds.

After the introduction we have essays on the external and internal structure of birds and on the other systems of organs. A separate chapter is devoted to the geology and geography of birds, in which much information is compressed into a few pages. Finally we have the difficult subject of classification taken up and treated in a judicious

manner. After mentioning the principal schemes put forward since the demolition of the Cuvierian system, and acknowledging the "exceptional credit," due to Mr. Seebohm for his "absolute diagnostic characters," Dr. Mivart gives us his own ideas of the leading groups of birds, as culled from previous authorities, and divides the class into 18 Orders, of which 17 are Carinate and 1 Ratite. A concluding table gives a list of the genera in each family and subfamily, with the approximate number of species in each genus. Lastly we may note that the casual errors in the volume seem to be exceptionally few. The Oven-bird (p. 118), though it may occasionally "burrow in the ground," is more notorious for its huge oven-like nest made of hardened clay; a V is omitted after F in the description of fig. 141 (p. 138); the specific name of *Odontopteryx* is *toliapicus*, not *toliapus* (p. 237); and *Cathartæ* (p. 271) is the correct plural of *Cathartes*. On the whole we can cordially recommend the 'Elements of Ornithology' as containing a mine of modern information on the subject of birds, compressed into a small compass.

109. *Packard's 'Labrador Coast.'*

[The Labrador Coast: a journal of two summer cruises to that region, with notes on its early discovery, on the Eskimo, on its physical geography, geology, and natural history. By Alpheus Spring Packard, M.D., Ph.D., &c. New York and London: 1891.]

Dr. Packard has reprinted in an octavo volume the account of the collections and observations made in Labrador in his student-days, and has added thereto a summary of the results of more recent explorations, so as to form a kind of scientific guide to the Labrador coast which will be very useful to future travellers. Chapters are devoted to the geology, zoology, and botany of the country. The 'List of Birds of Labrador,' compiled by Mr. L. M. Turner, and published in the 'Proceedings of the U. S. National Museum' for 1885, has been "revised and brought down to date" by Mr. Allen. It enumerates 208 species, to which one is added upon the authority of Dr. Robert Bell of the Canadian

Geological Survey, namely, "*Procellaria tenuirostris*, Aud." A final chapter to the volume contains a useful bibliography of the subject.

110. *Salvin and Hartert on the Picariæ.*

[Catalogue of the Birds in the British Museum. Volume XVI. Catalogue of the Picariæ in the Collection of the British Museum: Upupæ and Trochili, by Osbert Salvin; Coraciæ, of the Families Cypselidæ, Caprimulgidæ, Podargidæ, and Steatornithidæ, by Ernst Hartert. 8vo. London: 1892.]

The sixteenth volume of the 'Catalogue of Birds,' which has been anxiously expected by Ornithologists for some time, is now out. Mr. Salvin had finished the Trochilidæ some time ago, but was unable from pressure of other work to proceed with the remaining families. The necessity of finding another author to complete the volume has caused this delay.

As regards the Trochilidæ, Mr. Salvin as an authority is *facile princeps* amongst living Ornithologists, and the collection upon which he has worked is also *facile princeps* amongst existing collections. It "comprises the two largest collections of Humming-birds that have been hitherto made," viz. that of Gould and that of Messrs. Godman and Salvin, and contains altogether the enormous number of 8253 specimens, which are referred to 482 species. The account of the Trochilidæ occupies the greater part of this bulky volume. We will not presume to criticize Mr. Salvin's new arrangement of this difficult group, which he divides into three "sections"—*Trochili serrirostres*, *Tr. intermedii*, and *Tr. lævirostris*—according to the presence or absence of serrations on the sheath of the mandible. While this character brings together many obviously allied forms, it widely separates others (viz. *Glaucis* and *Threnetes*) which have been hitherto placed near one another. The concise characters of the species given by Mr. Salvin and his apposite remarks on their affinities and ranges will, we are sure, be highly appreciated by working Ornithologists. Besides the Trochilidæ Mr. Salvin has catalogued the Upupæ, containing the two families Upupidæ (with 5 species) and Irrisoridæ (with 10 species).

Herr Hartert's contribution to the present volume contains an account of four families of the suborder "Coraciæ," according to Dr. Günther's classification, namely the Cypselidæ, Caprimulgidæ, Steatornithidæ, and Podargidæ. Herr Hartert has had a very tough job to master as regards the Caprimulgidæ, and those who have paid attention to this embarrassing group will, we are sure, much appreciate the way in which he has surmounted his difficulties. According to Herr Hartert's arrangement the Caprimulgidæ contain 86 species, while the Cypselidæ have 78 species, the Podargidæ 24, and the Steatornithidæ only 1, but a good many subspecies are likewise recognized.

The 16th volume of the Catalogue, therefore, gives us altogether an account of 687 species of birds, represented in the National Collection by no less than 12,286 specimens.

The following new genera are established in this volume:—*Neolesbia*, Salvin, type *Cyanolesbia nehrkorni*, p. 145; *Æronautes*, Hartert, type *Panyptila melanoleuca*, p. 459; and *Claudia*, Hartert, type *Cypselus squamatus*, p. 469.

The only actually new species now named for the first time seem to be *Caprimulgus yucatanicus* and *Ægotheles salvadorii*; but there are also two new subspecies proposed, namely *Collocalia francica merguiensis* and *Chætura cinereiventris guianensis*.

The following species are figured in this volume:—*Upupa somalensis*; *Irrisor bollii*; *I. jacksoni*; *Scoptelus castaneiceps*; *Panychlora micans*; *Chlorostilbon peruanus*; *Helianthus laticlavus*; *H. violicollis*; *Heliotrypha speciosa*; *H. barrali*; *Agyrtria cæruleiceps*; *Amazilia sumichrasti*; *Iolama luminosa*; *Phæolæma cervinigularis*; *Eriocnemis dyseli*; *E. ventralis*; *Chætura ussheri*; *Caprimulgus griseatus*; *C. whitelyi*; *Lyncornis mindanensis*; *Batrachostomus harterti*.

111. *Sclater, f., on the Economic Importance of Birds in India.*

[The Economic Importance of Birds in India. By W. L. Sclater, M.A. Indian Mus. Notes, vol. ii. no. 5, p. 117. Calcutta: 1891.]

Mr. W. L. Sclater contributes a paper on this subject to

a recent number of 'Indian Museum Notes.' The author points out that birds are destroyed in large quantities in India for two purposes only—(1) for the sake of their skins or feathers; (2) for eating—and expatiates under both these heads.

The principal birds killed for their feathers are the Egrets, *Herodias alba*, *H. intermedia*, and *H. garzetta*, which are much valued for their breeding-trains. Their skins are sold and exported "in very large quantities."

112. *Sharpe and Grant on the Picariæ.*

[Catalogue of the Birds in the British Museum. Volume XVII. Catalogue of the Picariæ in the Collection of the British Museum. Coraciæ and Halcyones, with the families Leptosomatidæ, Coraciidæ, Meropidæ, Alcedinidæ, Momotidæ, Todidæ, and Coliidæ, by R. Bowdler Sharpe. Bucerotes and Trogonæ, by W. R. Ogilvie Grant. London: 1892.]

The issue of the 17th volume of the 'Catalogue of Birds' renders the first twenty volumes of this great work complete, and the whole of the Orders Accipitres, Striges, Passeres, Picariæ, and Psittaci are thus finished. The present volume, prepared partly by Dr. Bowdler Sharpe and partly by Mr. Ogilvie Grant, as shown on the second titlepage, "contains an account of the remaining families of the suborder Coraciæ, as understood by Seebolin, as well as those of the Halcyones, Bucerotes, and Trogonæ." In these three suborders there are nine families, containing altogether 397 species. These are represented in the British Museum Collection by 7904 specimens, showing the large average of nearly 20 specimens to each species. Only 16 of the recognized species are unrepresented in the Museum.

Dr. Sharpe commences the volume with the Leptosomatidæ, Coraciidæ, and Meropidæ—the three remaining families of Coraciæ, according to the arrangement here adopted. We observe that he maintains his *Eurystomi laticor* and *calonyx* as distinct, in which, however, other authorities do not agree with him*. The suborder Halcyones,

* Cf. Dresser, *Ibis*, 1891, p. 99.

which next follows, is likewise most appropriately entrusted to the author of the well-known Monograph, who now recognizes 183 species of Kingfishers. That he has done well in finally uniting *Alcedo bengalensis* to *A. ispida* few ornithologists, who have studied the question, will be inclined to doubt. Whether he is equally to the front in keeping *Ceryle varia* distinct from *Ceryle rudis* is not certain; but, as in the case of many other subspecies, this is "a matter of opinion." The Alcedinidæ are followed by the Momotidæ, Todidæ, and Coliidæ, of which the accounts are likewise prepared by Dr. Sharpe. Among the Momotidæ we observe that he has given three new names hypothetically, —*Momotis parensis* (p. 320), *venezuelæ* (p. 321), and *argenticinctus* (p. 323). Without expressing an opinion on the advisability of creating hypothetical species, we certainly think that these names, being in print, ought to have been inserted in the Systematic and Alphabetical Indexes.

Mr. Grant completes the volume with an account of the suborders Bucerotes and Trogones, in which, we are pleased to see, he does not find it necessary to make any serious deviation from previous arrangements of these groups, further than the introduction of two new genera of Bucerotidæ. The Bucerotidæ, it may be remarked, are divisible into two very distinct subfamilies typified by *Bucorax* and *Buceros*. This is not very well shown in the table (p. 349), where *Rhinoplax*, which, whatever the structure of the casque may be, certainly belongs to the Bucerotinæ, is first separated off by itself. Moreover, the subfamily Bucerotinæ is omitted altogether in the Systematic Index.

Besides the three hypothetical species above mentioned the following new specific and subspecific terms are first published in this volume:—*Ceryle americana septentrionalis*, *C. æquatorialis*, *Alcedo ispida floresiana*, *Ceyx euerythra*, *Halcyon torquatus forbesi*, *H. admiralitatis*, *H. tutuila*, *H. tannensis*, *H. chloris armstrongi*, *H. c. vidali*, *H. suvensis*, *H. humii*, *H. h. meyeri*, *H. h. davisoni*, *Todirhamphus youngi*, *Momotus bartletti*, *Colius affinis*, *Trogon bolivianus*, *Harpactes vidua*, and *H. dulitensis*.

The following new generic names appear to be first published in this volume:—*Aspatha*, Sharpe, for *Prionites gularis*, Lafr.; *Gymnolæmus*, Grant, for *Anthracoceros marchii*, Oust.; *Ptilolæmus*, Grant, for *Buceros tickelli*, Blyth; and *Ortholophus*, Grant, for *Buceros albocristatus*, Cassin.

The following species are figured:—*Dicrocercus hirundineus*, *D. furcatus*, *Melittophagus cyanostictus*, *M. meridionalis*, *M. pusillus*, *Eurystomus orientalis*, *E. calonyx*, *E. solomonensis*, *E. azureus*, *Alcedo quadribrachys*, *A. guentheri*, *Ceryle æquatorialis*, *C. stictoptera*, *Halcyon torquatus*, *H. forbesi*, *H. malimbicus*, *H. armstrongi*, *H. solomonis*, *H. chloris*, *H. humii*, *Momotus bartletti*, *M. subrufescens*, *M. microstephanus*, *M. æquatorialis*, *Colius leucotis*, *C. affinis*, *Lophoceros jacksoni*, *L. damarensis*, *Trogon bolivianus*, *Hapaloderma vittatum*, and *Harpactes dulitensis*.

113. *Shufeldt on Fossil Birds from the Upper Pliocene.*

[Fossil Birds from the Equus Beds of Oregon. By Dr. R. W. Shufeldt. Amer. Nat. 1891, p. 818.]

This is a brief abstract of a memoir (shortly to be published) on a large collection of bird-bones from the Upper Pliocene of the Silver-Lake region in Oregon. These specimens are referred to 51 species, of which many are new, and amongst them is a new Flamingo, *Phænicopterus copei*. All the species are referable to modern genera.

114. *Smith on the Great Bustard in Wilts.*

[Recent Occurrence of the Great Bustard in Wilts. By the Rev. A. C. Smith. 8vo. Devizes, 1891.]

The Rev. A. C. Smith gives particulars of a specimen of *Otis tarda* which was shot on Feb. 5th last year in Alington Mead, on the Avon, about three miles from Chippenham. Six other specimens were obtained in different southern counties about the same period, all females. The last previously recorded occurrence of this bird in Wilts was in 1871.

115. *Wilson and Evans's 'Aves Hawaiienses' **.

[*Aves Hawaiienses*: the Birds of the Sandwich Islands. By Scott B. Wilson, F.Z.S., assisted by A. H. Evan, M.A., F.Z.S. Part III. May 1892. 4to. London: R. H. Porter.]

The present part of this valuable work gives us excellent figures of various species of the peculiar Hawaiian genera *Hemignathus* and *Himatione*. Of the former *H. obscurus*, *H. olivaceus*, *H. procerus*, and *H. hanapepe* are depicted; of the latter *Himatione parva*, *H. montana*, and *H. stejnegeri*.

Besides the above we have full accounts of five more widely distributed species also met with more or less frequently in the Hawaiian Archipelago; these are *Charadrius fulvus*, *Streptilas interpres*, *Numenius tahitiensis*, *Totanus incanus*, and *Calidris arenaria*. *Totanus incanus* is carefully figured in young and adult plumages, and its distinctions from the nearly allied *T. brevipes* are pointed out. Mr. Seebohm ('Plovers and Sandpipers,' p. 360) admits these two forms only as subspecies, and says that they completely "intergrade."

L.—*Letters, Extracts, Notices, &c.*

WE have received the following letters, addressed to the Editor of 'The Ibis':—

SIR,—For the purpose of collecting birds, I am at present at the Great Loo Choo Island (Okinawa Shima), and have been stopping here for about four months. But the restrictions put upon me, and the constant worrying by the local Japanese authorities, make it impossible for me to do my work, which is so much more to be regretted, I think, as additional specimens from this locality are desirable.

I am, Sir,

Yours &c.,

P. AUG. HOLST.

May 17th, 1892.

SIR,—I observe that in my notes on the *Hallux* of the Kittiwake, contributed to the July 'Ibis,' I have inadver-

* For notice of Part II. see above, p. 178.

tently stated (at p. 445) that the presence of the tendon shown in fig. 2 indicates the possession by the hallux of a *flexor longus hallucis*. I should have said an *extensor* tendon.

Will you kindly insert this correction in the October number and oblige

Yours &c.,

Edinburgh Museum of Science
and Art, 11th July, 1892.

WM. EAGLE CLARKE.

Mr. Hartert's Expedition.—Mr. Hartert wrote to us from Curaçao (19th June, 1892) as follows:—"On my arrival in Venezuela I found things very bad, so that it was nearly impossible to travel about in the Andes or anywhere. Therefore, after a short visit in Caracas and San Esteban, I left the country and came over to this little island, where I am collecting now. I have been able to add but a few species to the list that has been recently published in the J. f. O. by our friend Hans von Berlepsch.* Insect-life, as would be expected, is very poor on this island, especially as regards Lepidoptera.

"From here I shall proceed to the island of Aruba, and I hope that meanwhile everything in Venezuela will become quiet and settled. I shall not forget to give you some news before or after my arrival in Venezuela. Mrs. Hartert goes with me to the other islands.

"The journey from Europe was somewhat tiresome, and nothing of special interest for ornithologists occurred. On St. Thomas and Porto Rico beautiful scenery was seen and I was able to obtain a few birds, but nothing of great interest, I believe."

In a second letter, dated July 28th, Mr. Hartert told us that he had also visited the islands of Aruba and Bonaire, and had made some good collections.

Finding it impossible to carry out his plans in Venezuela, in consequence of the disturbed state of the country, Mr. Hartert has since returned to Europe.

* See above, p. 447.

Mr. P. L. Jouy's Collection.—By the Smithsonian Report for the year 1889 (only received 1892) we learn that Mr. Jouy's collection has been transferred to the U. S. National Museum. It contains 651 specimens representing 172 species, from Korea and Tshu-Shima, Japan. "This is one of the most valuable and interesting collections ever acquired by the Museum, being, as it is, the result of several years of intelligent collecting in a hitherto ornithologically entirely unexplored country. Besides some undescribed forms, the collection contains examples of a number of very rare species represented in but few museums, as, for instance, *Platalea minor*, *Herodias eulophotes*, *Lanius sphenocercus*, *Otis dybowskii*, *Ciconia boyciana*, *Puffinus leucomelas*, *Urosphena squamiceps*, *Xanthopygia xanthopygia*, *Erithacus sibilans*, *Galerida corensis*, &c., and last, but not least, a pair of *Pitta nympha*, the first specimens found since Schlegel and Temminck described the species from a Japanese drawing."

The Stafford Collection of British Birds.—The Stafford Collection of British Birds, which we have lately had the pleasure of inspecting under the guidance of Mr. O. H. Latter, is now deposited in the new Museum at Charterhouse School, Godalming. The collection was formed by the late Mr. Wm. Stafford of Godalming during about 50 years. The majority of the specimens were stuffed and set up by Mr. Stafford himself. The greater part of the collection is composed of birds caught in the Godalming district; a few were purchased in Leadenhall Market. After Mr. Stafford's death the collection was purchased (in 1890) by a joint syndicate composed of the Governors of Charterhouse, residents in the neighbourhood, and Charterhouse Masters, and was by them presented to Charterhouse Museum. Since then a few specimens have been purchased in order to fill in gaps and make a complete collection of all British Birds. The number of species represented is about 275, with a total of about 500 specimens.

Edible-bird's-nest Swifts in the Andaman Islands.—A recent number of the 'Englishman' of Calcutta contains the following account of the mode of collecting the nests of one of the species of *Collocalia* in the Andaman Islands. According to the most recent work on this genus (Hartert in Cat. Birds Brit. Mus. vol. xvi.) three species of *Collocalia* occur in the Andamans (*C. innominata*, *C. inexpectata*, and *C. linchi*), but not the true *C. esculenta*, which is a Moluccan species. It would be desirable to know which of these three species makes the edible nests.

"The Swifts arrive at the Andamans towards the end of November. Before their advent a party of convicts and Andamanese is sent round to all the caves in which the birds build, to clear away the old nests in which the previous season's young have been hatched out, to bring in all the refuse, which is sold for rs. 5 per seer, and generally to clean the caves. The fine break between the monsoons, in October, is generally taken advantage of for this work, but instances have occurred where the collectors have been overtaken by a storm, their boats smashed up and lost, and they themselves placed in rather an awkward position.

"The birds take their time about commencing to build, and if there has been a wet December the first crop of nests is generally a poor one, being soiled by the damp and drippings from the roofs of the caves. However, about the last week in January, the collectors go round the islands to the different caves, a journey which takes about three weeks in an open boat, and bring in all the nests that have been built. The best quality, resembling pure isinglass, and worth their weight in silver, are found in caves in limestone and volcanic rock, the nests built in sandstone and serpentine being inferior.

"The birds now build much faster, and at the end of February a second collection is made, which is usually the best of the season. The third collection is made in April, when the nests, though of good quality, are thin and dry. The birds are then left to build and hatch out their young. They leave the island soon after the south-west monsoon sets in.

"The nests are very carefully removed from the rock, by an iron trident, and are kept in clean linen bags, as it is important that they should not be crushed, soiled, or wetted by the sea-water. When brought into Port Blair they are cleaned from all feathers and impurities, and then packed in circular bundles weighing about 4 lbs. each, and sealed according to their quality. There are three classes of nests:—1st class, which are pure white, resembling isinglass, and which realize from rs. 130 to 145 per viss. 2nd class, which are clean, but yellow in colour, and realize about rs. 100 to 110 per viss. 3rd class, which are discoloured and have feathers and other foreign matter in them, and realize about rs. 90 per viss. The refuse and clippings over from cleaning the nests realize about rs. 4·8 per seer.

"The nests are formed from a gelatinous secretion from the salivary glands of the birds, but there is one kind of Swift which makes its nests of grass straws, moss, and feathers glued together, and fastened on to the rock by this secretion.

"The caves in which the nests are found are scattered about the islands, some, such as those at Stewart's Sound, far inland; others in rocks concealed in mangrove swamps; and the Malays, who were the original traders here in these articles, must have been very persevering to have found them. I suppose they watched the flight of the Swifts. Many of the caves are quite dark, and in these torches are necessary, and occasionally ladders; others are only to be approached through the surf."

Surnames taken from Birds.—Places named from certain well-known birds are common in most countries, and from these places surnames are frequently derived. "Gladstone"—a name now in every one's mouth—is one of such surnames, its derivation being obviously Glead's-stone, *i. e.* the stone which the Glead or Kite (*Milvus regalis*) frequents. Hawkstone (in Shropshire) is similarly formed; and in Germany we find many corresponding terms, such as Adlerstein, Geierstein, and Falkenstein. In Hampshire I know of a field called "Kite-hill," and in Berkshire there is a

village "Crowthorn"—so called, no doubt, originally from the thorn on which the Crow used to sit. On referring to Lower's 'Patronymica Britannica' I find "Gladstone" given as a "local" name, but without any derivation. Can any of our readers kindly tell me where the original "Glead's-stone" is? Probably it is somewhere in the lowlands of Scotland, as the ancestors of the present Premier are said to have been in business at Leith.—P. L. SCLATER.

News of various Ornithologists.—Mr. Frank Withington (late of Buenos Ayres) is now at Zumpango in Mexico, where he is engaged on a contract to make part of the great tunnel intended to drain the valley of Mexico, and has at present consequently not much time for birds. He promises, however, to return to Ornithology as soon as he can get a chance.

Mr. D. G. Elliot writes (from Quebec, June 14th) that he has in preparation a new edition of his 'Monograph of the Pittidæ' (New York, 1863), and will shortly publish Part I. He requires further information respecting *Pitta finschi*, Ramsay, Proc. Linn. Soc. N. S. W. ix. p. 864 (1884), which he is inclined to refer to *P. cyanonota*. Can any of our correspondents furnish this? The name was unfortunately overlooked in the 14th vol. of the Catalogue of Birds.

Mr. H. O. Forbes, F.Z.S., has resigned his post in the Canterbury Museum, Christchurch, New Zealand, after three years' tenure, and has returned to England. He has brought with him a series of very interesting fossil bird-bones from the Chatham Islands, which he proposes to examine carefully and to describe in this country.

Mr. L. W. Wigglesworth has accepted the post of Assistant in the Royal Zoological Museum of Dresden, lately held by Dr. Helm, and is engaged on a work on birds in connection with Dr. A. B. Meyer, the Director.

Mr. Arthur H. Holland is now settled in his new *estancia* (Sta. Elena, Soler, F. C. al P., Buenos Ayres) and will soon have time to turn his attention to the birds of the district. He had just shot (July 8th, 1892) a specimen of *Corypho-*

spingus cristatus, which has not hitherto been met with so far south.

Mr. O. V. Aplin (see above, p. 350) left England on Sept. 1st on his ornithological expedition to Uruguay.

The "Who-are-you" of Waterton.—Mr. Quelch (cf. 'Timehri,' vol. vi. new ser. p. 172) has obtained a specimen of the Goatsucker of British Guiana, named by Waterton, from its peculiar call, "Who-are-you" ('Wanderings,' p. 141), and identifies it as *Nyctidromus albicollis*, a well-known species, widely distributed in the Neotropical Region.

Retirement of Prof. Cabanis.—After fifty years' service in the Berlin Museum, Professor Cabanis has celebrated his *jubilæum*, and has retired into well-earned repose, but continues, we are glad to say, in excellent health. He is succeeded in the care of the celebrated collection of Birds by Dr. Anton Reichenow, General Secretary of the Allgemeine Deutsche Ornithologische Gesellschaft.

Obituary: DR. H. C. C. BURMEISTER.—Hermann Charles Conrad Burmeister, the veteran Zoologist, who died at Buenos Ayres on the 2nd of May last at the age of 85 years, was born at Stralsund in 1807. Whilst a student of Medicine at Halle he studied zoology under Nitzsch, and took his degree as Doctor of Philosophy in 1829. Shortly after this he published his excellent 'Handbuch der Naturgeschichte.' On the death of Nitzsch in 1842 Burmeister succeeded to the Chair of Zoology at Halle, and continued there till 1848, when he became involved in politics, and was elected by his fellow-citizens Deputy to the short-lived National Assembly. When matters became quiet again this escapade led to his being granted two years' leave of absence from the University, and proceeding to Brazil, where he joined Lund, the well-known Scandinavian Naturalist, at Lagoa Santa in the Province of Minas Geraes. Here, as we have been told, Burmeister had the misfortune to break his leg, and was carefully nursed by Lund, and the late Prof. Reinhardt, who happened to be

there at the same time in the course of his voyage round the world in the 'Galathea.' This accident, however, did not prevent Burmeister from exploring the whole country and making large collections in every branch of Natural History, which were subsequently deposited in Halle Museum. The results of this journey were given to the world in two most useful works, the 'Systematische Uebersicht der Thiere Brasiliens,' and the 'Erläuterungen zur Fauna Brasiliens,' both well known to Zoologists. But Burmeister did not find himself comfortable at Halle after all that had occurred, and shortly afterwards returned to South America, and became Director of the Public Museum of Natural History at Buenos Ayres, which post he retained until shortly before his death, when he received a well-earned pension. In 1861 he published his 'Reise durch die La Plata-Staaten' in two volumes, the second of which is devoted to a "Synopsis of the Vertebrates of the Argentine Republic," and remains our standard work on this subject to this day. For the past thirty years, although Burmeister has communicated many papers on zoological subjects to the scientific journals in Europe, he has been principally occupied in studying the wonderful fossil Mammals of the Argentine tertiaries, to which he had devoted unceasing care and attention. The results have been published mostly in the 'Anales del Museo Público de Buenos Aires,' and are illustrated by a large series of well-executed plates, after the author's drawings. Burmeister also published a Monograph of the Fossil Horses of the Argentine Pampas, and undertook a large work entitled 'Description Physique de la République Argentine,' with an accompanying atlas in folio. This last work was commenced in 1876, but unfortunately remained incomplete at the time of his death. Burmeister is succeeded in the Directorship of the National Museum of Buenos Ayres by his former Assistant, Dr. Carlos Berg.

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