



Division of Birds



5 Birds

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Smith
48

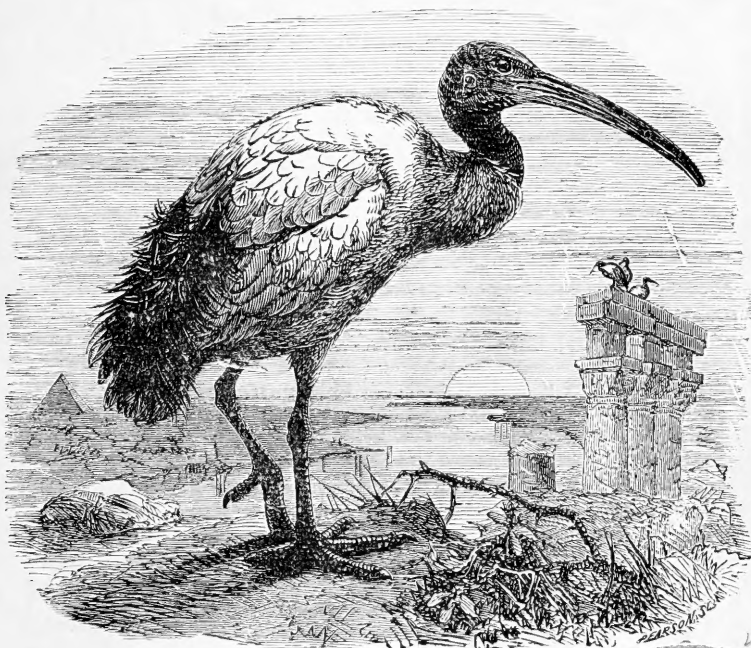
THE IBIS,

A

QUARTERLY JOURNAL OF ORNITHOLOGY.

EDITED BY

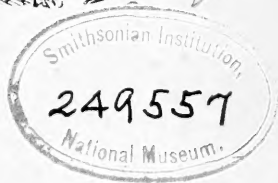
WILLIAM LUTLEY SCLATER, M.A., F.Z.S.



VOL. I. 1919.

ELEVENTH SERIES.

He prayeth well, who loveth well
Both man and bird and beast.

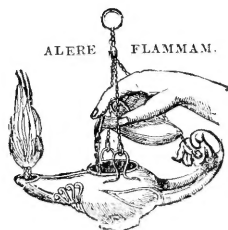


PUBLISHED BY THE
BRITISH ORNITHOLOGISTS' UNION

AND SOLD BY

**WILLIAM WESLEY & SON, 28 ESSEX STREET, STRAND,
LONDON, W.C.2.**

1919.



PRINTED BY TAYLOR AND FRANCIS,
RED LION COURT, FLEET STREET.

DATES OF ISSUE OF THE PARTS OF
'THE IBIS' FOR 1919.

ELEVENTH SERIES.

VOLUME I.

Number 1.	issued	January	8th.
„ 2.	„	April	3rd.
„ 3.	„	July	1st
„ 4.	„	October	23rd.

LIST OF THE MEMBERS

OF THE

BRITISH ORNITHOLOGISTS' UNION.

1919.

[An asterisk indicates an Original Member. It is particularly requested that Members should give notice to the Secretary of the Union of any error in their addresses or descriptions in this List, in order that it may be corrected.]

Date of
Election.

1916. ADAMS, ERNEST EDWARD ; Lloyd's, Royal Exchange, E.C. 3.
1914. ALDORTH, Capt. THOMAS PRESTON, D.S.O., 3rd Battn.,
West Kent Regt., Mesopotamia.
1911. ALEXANDER, HORACE GUNDRY ; 3 Mayfield Road, Tunbridge
Wells, Kent.
1888. APLIN, OLIVER VERNON ; Stonehill House, Bloxham, Oxon.
- 5 1919. ARCHER, GEOFFREY FRANCES, C.M.C. ; Government House,
Berbera, Somaliland.
1896. ARCHIBALD, CHARLES F. ; 2 Darnley Road, West Park,
Leeds, Yorks.
1919. ARNOLD, EDWIN CARLETON ; The College, Eastbourne.
1896. ARRIGONI DEGLI ODDI, Count ETTORE, Professor of Zoology,
University, Padua ; and Ca' oddo, Monselice, Padua, Italy.
1901. ARUNDEL, Major WALTER B., F.Z.S. ; High Ackworth, Ponte-
fract, Yorks.
- 10 1915. ASHBY, EDWIN ; Wittunga, Blackwood, Adelaide, S. Australia.
1901. ASHBY, HERBERT ; Broadway House, Brookvale Road,
Southampton.
1908. ASHWORTH, JOHN WALLWORK, M.R.C.S., L.R.C.P., F.R.G.S.,
F.G.S. ; Thorne Bank, Heaton Moor, near Stockport,
Cheshire.
1918. ASTLEY, ARTHUR ; Freshfield, Ambleside.
1897. ASTLEY, HUBERT DELAVAL, M.A., F.Z.S. ; Brinsop Court,
Hereford.

Date of
Election.

- 15 1919. BACKHOUSE, THOMAS PORTER ; Trinity College, Cambridge.
 1901. BAILWARD, Col. ARTHUR CHURCHILL, F.Z.S. (R.F.A.) ;
 64 Victoria Street, S.W. 1.
 1892. BAKER, E. C. STUART, J.P., F.Z.S., F.L.S. ; 6 Harold Road,
 Upper Norwood, S.E. 19. (*Hon. Secretary and Treasurer.*)
 1901. BAKER, JOHN C., M.B., B.A. ; Ceely House, Aylesbury, Bucks.
 1906. BANNERMAN, DAVID A., M.B.E., B.A., F.R.G.S. ; 6 Palace
 Gardens Terrace, Kensington, W. 8 ; and British Museum
 (Nat. Hist.), Cromwell Road, S.W. 7.
 20 1890. BARCLAY, FRANCIS HUBERT, F.Z.S. ; The Warren, Cromer,
 Norfolk.
 1885. BARCLAY, HUGH GURNEY, F.Z.S. ; Colney Hall, Norwich,
 Norfolk.
 1903. BARTELS, MAX. ; Pasir Datar, Halte Tjisaat (Preanger), Java,
 Dutch East Indies.
 1906. BATES, GEORGE L., C.M.Z.S. ; Bitye, *viâ* Yaunde, Cameroon,
 West Africa.
 1913. BAYNES, GEORGE KENNETH ; 120 Warwick Street, S.W. 1.
 25 1912. BEEBE, WILLIAM, C.M.Z.S. ; Tropical Research Station of
 the New York Zoological Society, Katabo, Bartica
 District, British Guiana.
 1910. BEESTON, HARRY ; Sunnymead, South Street, Havant, Hants.
 1897. BENSON, JOHN.
 1897. BERRY, WILLIAM, B.A., LL.B. ; Tayfield, Newport, Fifeshire.
 1917. BERTRAM-JONES, JOHN WILLIAM ; Kelvedon Hall, Brentwood,
 Essex.
 30 1914. BETHAM, Brigadier-General ROBERT M. ; c/o Messrs. Grindlay
 & Co., Hornby Road, Bombay, India.
 1907. BETHELL, The Hon. RICHARD, F.Z.S. (Scots Guards) ; 18 Lower
 Seymour Street, W. 1.
 1907. BICKERTON, WILLIAM, F.Z.S. ; Kingsmuir, 21 Oxley Road,
 Watford, Herts.
 1880. BIDWELL, EDWARD ; 1 Trig Lane, Upper Thames Street,
 E.C. 4.
 1919. BIGGER, Capt. WILLIAM KENNETH, M.C., R.A.M.C. ; The
 Croft, Mitcham, Surrey.
 35 1892. BIRD, The Rev. MAURICE C. H., M.A. ; Brunstead Rectory,
 Stalham, S.O., Norfolk.
 1891. BLAAUW, FRANS ERNST, C.M.Z.S. ; Gooilust, 's Graveland,
 Hilversum, Noord-Holland.

Date of
Election.

1913. BLACKWOOD, Lt. GEORGE GLENDINNING, M.C. (Seaforth Highlanders); 4 Rosewood Terrace, Dundee, N.B.
1912. BLAINE, Capt. GILBERT, F.Z.S.; 5A The Albany, Piccadilly, W. 1.
1903. BLATHWAYT, The Rev. FRANCIS LINLEY, M.A.; Melbury Rectory, Dorchester, Dorset.
- 40 1914. BLYTH, ROBERT OSWALD, M.A.; Balvonie, Skelmorlie, Ayrshire.
1897. BONAR, The Rev. HORATIUS NINIAN, F.Z.S.; 16 Cumin Place, Edinburgh.
1905. BONE, HENRY PETERS.
1894. BONHOTE, JOHN LEWIS, M.A., F.L.S., F.Z.S.; Zoological Gardens, Giza, Egypt; and Gade Spring Lodge, Hemel Hempstead, Herts.
1906. BOORMAN, STAINES; Heath Farm, Send, Woking, Surrey.
- 45 1904. BOOTH, HARRY B., F.Z.S.; Ryhill, Ben Rhydding, *via* Leeds, Yorks.
1908. BORRER, CLIFFORD DALISON; 6 Durham Place, Chelsea, S.W. 3.
1918. BOYD, Capt. ARNOLD WHITWORTH, M.C. (Lancashire Fusiliers); The Alton, Altrincham, Cheshire.
1915. BRADFORD, ARTHUR DANBY, F.Z.S.; Upton Lodge, Watford, Herts.
1895. BRADFORD, Sir JOHN ROSE, K.C.M.G., C.B., M.D., D.Sc., F.R.S., F.Z.S.; 8 Manchester Square, W. 1.
- 50 1909. BRIGGS, THOMAS HENRY, M.A., F.E.S.; Rock House, Lynmouth, R.S.O., N. Devon.
1902. BRISTOWE, BERTRAM ARTHUR; Ashford Farm, Stoke D'Abernon; Cobham, Surrey.
1919. BROCKLEBANK, Lt.-Col. H.; 63 Witbury Road, Hove, Sussex.
1908. BROOK, EDWARD JONAS, F.Z.S.; Hoddam Castle, Ecclefechan, Dumfriesshire.
1899. BROOKE, JOHN ARTHUR, J.P.; Fenay Hall, Huddersfield; and Fearn Lodge, Ardgay, Ross-shire.
- 5 1912. BROWN, THOMAS EDWARD; c/o Messrs. G. Beyts & Co., 11 Port Tewfik, Suez, Egypt.
1900. BRUCE, WILLIAM SPEIRS, LL.D., F.R.S.E.; Scottish Oceanographical Laboratory, Surgeon's Hall, Edinburgh.
1907. BUCKLEY, CHARLES MARS; 4 Hans Crescent, S.W. 1.

Date of
Election.

1906. BUCKNILL, Sir JOHN ALEXANDER STRACHEY, K.C., M.A.,
F.Z.S.; Chief Justice, Straits Settlements; Nassim Hill,
Singapore; and Athenæum Club, Pall Mall, S.W. 1.
1908. BUNYARD, PERCY FREDERICK, F.Z.S.: 57 Kidderminster Road,
Croydon, Surrey.
- 60 1907. BUTLER, ARTHUR GARDINER, Ph.D., F.L.S., F.Z.S.; 124 Beck-
enham Road, Beckenham, Kent.
1899. BUTLER, ARTHUR LENNOX, F.Z.S.: St. Leonard's Park,
Horsham, Sussex.
1900. BUTTRESS, BERNARD A. E.; Craft Hill, Dry Drayton,
Cambridge.
1905. BUXTON, ANTHONY; Knighton, Buckhurst Hill, Essex.
1912. BUXTON, PATRICK ALFRED; Fairhill, Tonbridge, Kent.
- 65 1896. CAMERON, Major JAMES S. (2nd Bn. Royal Sussex Regt.);
Low Wood, Bethersden, Ashford, Kent.
1888. CAMERON, JOHN DUNCAN; Low Wood, Bethersden, Ashford,
Kent.
1909. CAMPBELL, DAVID CALLENDER, J.P.; Templemore Park,
Londonderry, Ireland.
1909. CARROLL, CLEMENT JOSEPH; Rocklow, Fethard, Co. Tipperary,
Ireland.
1904. CARRUTHERS, ALEXANDER DOUGLAS; Barmer Hall, Kings
Lynn, Norfolk.
- 70 1908. CARTER, THOMAS; Wensleydale, Mulgrave Road, Sutton, Surrey.
1890. CAVE, Capt. CHARLES JOHN PHILIP, M.A., F.Z.S.; Ditcham
Park, Petersfield, Hants.
1919. CHANCE, EDGAR P.; 3 Knightsbridge Mansions, S.W. 3.
1882. CHASE, ROBERT WILLIAM; Herne's Nest, Bewdley,
Worcestershire.
1908. CHEESMAN, ROBERT E.; c/o F. V. Winch, Esq., North View,
Willesley, Cranbrook, Kent.
- 75 1910. CHUBB, CHARLES, F.Z.S.; British Museum (Natural
History), Cromwell Road, S.W. 7.
1918. CHUBB, Capt. PATRICK ARTHUR (3rd K.O.Y.L.I. attached
R.E.); York Lodge, Cheltenham, Gloucestershire;
and c/o London Joint Stock Bank, Ltd., E.C.
1912. CLARK, GEORGE WINGFIELD, M.A., F.Z.S.; 2 Devana Terrace,
Huntingdon Road, Cambridge.
1904. CLARKE, Major GOLAND VAN HOLT, D.S.O., F.Z.S.; Chilworth
Court, Romsey, Hants.

Date of
Election.

1916. CLARKE, JOHN PHILIP STEPHENSON; Borde Hill, Cuckfield, Sussex.
- 80 1889. CLARKE, Col. STEPHENSON ROBERT, C.B., F.Z.S.; Borde Hill, Cuckfield, Sussex.
1880. CLARKE, WILLIAM EAGLE, LL.D., F.L.S., F.R.S.E.; Royal Scottish Museum, Edinburgh. (*President.*)
1904. COCHRANE, Capt. HENRY LAKE, R.N.; Naval Board, Melbourne, Australia.
1898. COCKS, ALFRED HENEAGE, M.A., F.Z.S.; Poynetts, Skirmett, near Henley-on-Thames, Oxon.
1895. COLES, RICHARD EDWARD; Rosebank, New Milton, S.O., Hants.
- 85 1911. COLLETT, ANTHONY KEELING; 5 Stone Buildings, Lincoln's Inn, W.C. 2.
1904. COLLIER, CHARLES, F.Z.S.; Bridge House, Culmstock, Devon; and Windham Club, St. James' Square, S.W. 1.
1919. COLLINGE, Dr. WALTER EDWARD, D.Sc., M.Sc., F.L.S., F.E.S.; The University, St. Andrews, Scotland.
1916. COLTART, Dr. HENRY NEVILLE; Field House, Epsom, Surrey.
1909. CONGREVE, Capt. WILLIAM MAITLAND, M.C.; The Forest, Kerry, Montgomeryshire.
- 90 1913. COOK, JAMES PEMBERTON; Kiora, Kyambu, British East Africa.
1888. CORDEAUX, Major WILLIAM WILFRID (late 21st Lancers); Hopebourne, Harbledown, Canterbury, Kent.
1914. COURTOIS, The Rev. F. L., S.J.; Curator of the Sikawei Museum, near Shanghai, China.
1913. COWAN, FRANCIS; Wester Lea, Murrayfield, Midlothian.
1894. CREWE, Sir VAUNCEY HARPUR, Bt.; Calke Abbey, Derby.
- 95 1917. CUNNINGHAM, JOSIAS, R.N.V.R.; Fernhill, Belfast.
1916. CURRIE, ALGERNON JAMES; Southlands, Winchester Road, Worthing, Sussex; and Assistant Audit Officer, S.P.R., Kerman, *viâ* Bunder Abbas, S. Persia.
1915. CURRIE, ROBERT ALEXANDER (Chinese Customs); The Custom House, Yochow, by Hankow, China.
1899. CURTIS, FREDERICK, F.R.C.S.; Lydens, Redhill, Surrey.
1896. DANFORD, Major BERTRAM W. Y., R.E.; c/o Messrs. Cox & Co., 16 Charing Cross, S.W. 1.
- 100 1883. DAVIDSON, JAMES, F.Z.S.; 32 Drumsheugh Gardens, Edinburgh.

Date of
Election.

1905. DAVIS, K. J. ACTON, M.C., F.R.C.S., F.Z.S.; 24 Upper Berkeley Street, W. 1.
1909. DELMÉ-RADCLIFFE, Capt. ALFRED (105th Maratha Light Infantry); c/o Messrs. Cox & Co., Bombay, India.
1902. DENT, CHARLES HENRY; c/o Messrs. Barclay & Co. Ltd., Darlington, Durham.
1916. DESPOTT, GIUSEPPE, Curator of the Natural History Museum, The University, Malta.
- 105 1893. DE WINTON, WILLIAM EDWARD, F.Z.S.: Southover Hall, Burwash, Sussex.
1896. DOBBIE, JAMES BELL, F.R.S.E., F.Z.S.; 12 South Inverleith Terrace, Edinburgh.
1889. DOBIE, WILLIAM HENRY, M.R.C.S.: 2 Hunter Street, Chester.
1904. DRAKE-BROCKMAN, RALPH EVELYN, M.R.C.S., L.R.C.P., F.Z.S.; Studland House, Lansdowne Road, Worthing.
1913. DRUMMOND, JAMES, F.L.S., F.Z.S.; 'Lyttelton Times,' Christchurch, New Zealand.
- 110 1890. DRUMMOND-HAY, Col. JAMES A. G. R.- (Coldstream Guards): Seggieden, by Perth.
1904. DUCKWORTH, GEORGE HERBERT; Dalingridge Place, *viâ* East Grinstead, Sussex.
1878. DURNFORD, W. ARTHUR, J.P.; Elsecar, Barnsley, Yorks.
1903. EARLE, EDWARD VAVASOUR; South Darenth, Kent.
1914. EDWARDS, LAURENCE ALBERT CURTIS, M.A.; 61 Elphinstone Road, Hastings.
- 115 1895. ELLIOT, EDMUND A. S., M.R.C.S.; Woodville, Kingsbridge, South Devon.
1884. ELLIOTT, ALGERNON, C.I.E.; 41 Stanley Gardens, Hampstead, N.W. 3.
1902. ELLISON, The Rev. ALAN, M.A.; Althorpe Rectory, Doncaster, Yorks.
1866. ELWES, HENRY JOHN, F.R.S., F.Z.S.; Colesborne, Cheltenham, Gloucestershire. (*Committee.*)
1914. ETHERIDGE, ROBERT, Junr., C.M.Z.S.; Curator of the Australian Museum, Sydney, New South Wales, Australia.
- 120 1879. EVANS, ARTHUR HUMBLE, M.A., F.Z.S.; 9 Harvey Road, Cambridge.
1888. EVANS, WILLIAM, F.R.S.E.; 38 Morningside Park, Edinburgh.

Date of
Election.

1916. EZRA, ALFRED, F.Z.S. ; 110 Mount Street, W. 1.
1892. FAIRBRIDGE, WILLIAM GEORGE ; 141 Long Market Street,
Capetown, South Africa.
1916. FALKINER, Capt. JOHN McINTIRE, I.M.S., F.R.C.S. ; 22 St.
Stephen's Green, Dublin.
- 125 1909. FANSHAWE, Capt. RICHARD D. (late Scots Guards) ; Broxmore,
Cavendish Road, Bournemouth.
1894. FARQUHAR, Rear-Admiral ARTHUR MURRAY, C.V.O. ; Granville
Lodge, Aboyne, Aberdeenshire.
1898. FARQUHAR, Rear-Admiral STUART ST. J., R.N. ; Naval &
Military Club, Piccadilly, W. 1.
1873. FEILDEN, Col. HENRY WEMYSS, C.B., C.M.Z.S. ; Burwash,
Sussex ; and Junior United Service Club, S.W. 1.
1908. FINCH-DAVIES, CLAUDE G. (1st S. African Mounted Riflemen) ;
Roberts Heights, Pretoria, Transvaal.
- 130 1901. FINLINSON, HORACE W., F.Z.S. ; 5 Rosamond Road, Bedford.
1885. FITZHERBERT-BROCKHOLES, WILLIAM JOSEPH ; Cloughton Hall,
Garstang, Lancashire.
1902. FLOWER, Major STANLEY SMYTH, F.Z.S. ; Kedah House,
Zoological Gardens, Giza, Egypt.
1912. FLOYD, JAMES FRANCIS MURRAY, B.A. ; The University,
Glasgow.
1912. FOSTER, ARTHUR H., M.R.C.S., L.R.C.P. ; Sussex House,
88 Tilehouse Street, Hitchin, Herts.
- 135 1903. FOSTER, NEVIN HARKNESS, F.L.S., M.R.I.A. ; Hillsborough,
Co. Down, Ireland.
1880. FOSTER, WILLIAM ; 39 Colville Gardens, Bayswater, W. 11.
1881. FREKE, PERCY EVANS ; South Point. Limes Road, Folkestone.
1895. FROHAWK, FREDERICK WILLIAM, F.E.S. ; Uplands, Thunders-
ley, Essex.
1909. FROST, WILLIAM EDWARD, J.P. ; Ardvreck, Crieff, Perthshire.
- 140 1881. GADOW, HANS, Ph.D., F.R.S., F.Z.S. ; Cleramendi, Great
Shelford, near Cambridge.
1886. GAINSBOROUGH, CHARLES WILLIAM FRANCIS, Earl of ; Exton
Park, Oakham, Rutland.
1907. GANDOLFI, ALFONSO OTHO GANDOLFI-HORNOLD, Duke, Ph.D. ;
Blackmore Park, Hanley Swan, Worcestershire.
1900. GARNETT, CHARLES, F.Z.S. ; Greathouse. Chippenham, Wilts ;
and New University Club, St. James's Street, S.W. 1.
1892. GERRARD, JOHN ; Silverdale, Worsley, near Manchester, Lanes.

Date of
Election.

- 145 1902. GIBBINS, WILLIAM BEVINGTON, F.Z.S.; Ettington, Stratford-on-Avon, Warwickshire.
1879. GIBSON, ERNEST, F.L.S., F.Z.S., F.R.G.S.; c/o Señores Lockwood y Cia, 654 Rivadavia, Buenos Ayres.
1902. GILLMAN, ARTHUR RILEY; Hatch End, Wilfred Road, Boscombe.
1919. GILLON, Mrs. S. A.; 14 Carlton Terrace, Edinburgh.
1903. GLADSTONE, Capt. HUGH STEUART, M.A., F.Z.S., F.R.S.E., F.S.A.Scot.; Capenoch, Thornhill, Dumfriesshire; and 40 Lennox Gardens, S.W. 1.
- 150 1908. GODMAN, Lt.-Col. EDWARD SHIRLEY (2nd Dorset Regiment); Hampsteel, Cowfold, Sussex.
- *1858. GODMAN, PERCY SANDEN, B.A., C.M.Z.S.; Hampsteel, Cowfold, Sussex. (*Gold Medallist.*)
1906. GOODALL, JEREMIAH MATTHEWS; The Nest, Bembridge, Isle of Wight.
1900. GOODFELLOW, WALTER, F.Z.S.; The Poplars, Kettering, Northants.
1906. GORDON, SETON PAUL, F.Z.S.; Auchintoul, Aboyne, Aberdeenshire.
- 155 1912. GOSSE, Capt. PHILIP, M.R.C.S., L.R.C.P., R.A.M.C.; Savile Club, Piccadilly, W. 1.
1899. GOULD, FRANCIS HERBERT CARRUTHERS, F.Z.S.; Matham Manor House, East Molesey, Surrey.
1895. GRABHAM, OXLEY, M.A.; The Museum, York.
1909. GRANT, Major CLAUDE HENRY BAXTER, F.Z.S. (6th Battn. Rifle Brigade); 2 Lebanon Gardens, West Hill, Wandsworth, S.W. 18; and Sports Club, St. James' Square, S.W. 1.
1918. GRANT, FRANCIS; Edensor, Ascerton Road, Sidmouth, S. Devon.
- 160 1913. GREENING, LINNÆUS, F.L.S., F.Z.S.; Fairlight, Grappenhall, near Warrington, Cheshire.
1909. GREY OF FALLODEN, The Rt. Hon. EDWARD, The Viscount, K.G., P.C., F.Z.S.; Falloden, Christon Bank, R.S.O., Northumberland.
1906. GRIFFITH, ARTHUR FOSTER; 59 Montpellier Road, Brighton, Sussex.
1885. GUILLEMARD, FRANCIS HENRY HILL, M.A., M.D., F.Z.S.; Old Mill House, Trumpington, Cambridge.

Date of
Election.

1908. GURNEY, GERARD HUDSON, F.Z.S., F.E.S.; Keswick Hall, Norwich, Norfolk.
- 165 1870. GURNEY, JOHN HENRY, F.Z.S.; Keswick Hall, Norwich; and Athenæum Club, Pall Mall, S.W. 1.
1896. GURNEY, ROBERT, F.Z.S.; Ingham Old Hall, Stalham, Norfolk.
1891. HAIGH, GEORGE HENRY CATON, F.Z.S.; Grainsby Hall, Great Grimsby, Lincolnshire.
1887. HAINES, JOHN PLEYDELL WILTON; 17 King Street, Gloucester.
1898. HALE, The Rev. JAMES RASHLEIGH, M.A.; Boxley Vicarage, Maidstone, Kent.
- 170 1905. HAMERTON, Lt.-Col. ALBERT EDWARD, D.S.O., R.A.M.C., F.Z.S.; c/o Messrs. Holt & Co., 3 Whitehall Place, S.W. 1.
1913. HARDY, Capt. ERNEST CLIFFORD, R.N.; Hydrographic Department, Admiralty, Whitehall, S.W. 1.
1900. HARPER, EDMUND WILLIAM, F.Z.S.; P.O. Box 86, Calcutta, India.
1900. HARRIS, HENRY EDWARD.
1893. HARTERT, ERNST J. O., Ph.D., F.Z.S.; The Zoological Museum, Tring, Herts.
- 175 1900. HASLUCK, PERCY PEDLEY HARFORD; The Wilderness, Southgate, N.
1898. HAWKER, RICHARD MACDONNELL, F.Z.S.; Bath Club, Dover Street, W. 1; and c/o Messrs. Dalgety & Co., 96 Bishopsgate, E.C. 2.
1905. HAWKSHAW, JOHN CLARKE, M.A., M.I.C.E., F.G.S.; Hollycombe, Liphook, Hants; and 33 Great George Street, Westminster, S.W. 1.
1905. HEADLEY, FREDERICK WEBB, M.A., F.Z.S.; Haileybury College, Hertford.
1918. HERBERT, Capt. EDWARD GREVILLE, R.A.F.; c/o Messrs. Cox & Co., R.A.F. Branch, 111 St. Martin's Lane, W.C. 2; and Bangkok, Siam.
- 180 1902. HETT, GEOFFREY SECCOMBE, M.B., F.Z.S.; 8 Wimpole Street, W. 1.
1913. HEWITT, JOHN, M.A.; Director of the Albany Museum, Grahamstown, South Africa.
1900. HILLS, Lt.-Col. JOHN WALLER; 98 Mount Street, W. 1.

Date of
Election.

1884. **HOLDSWORTH, CHARLES JAMES, J.P.** ; Fernhill, Alderley Edge, Cheshire.
1912. **HONY, GEORGE BATHURST** : 4 Beaufort Road, Clifton, Bristol.
- 185 1905. **HOPKINSON, EMILIUS, M.B., D.S.O., F.Z.S.** ; 45 Sussex Square, Brighton, Sussex.
1916. **HOPWOOD, CYRIL** (Indian Forests) ; c/o Messrs. Thos. Cook & Son, Rangoon, Burma.
1888. **HORSFIELD, HERBERT KNIGHT** ; Crescent Hill, Filey, Yorks.
1895. **HOWARD, HENRY ELIOT, F.Z.S.** ; Clarelands, near Stourport, Worcestershire. (*Committee.*)
1881. **HOWARD, ROBERT JAMES** ; Shearbank, Blackburn, Lancashire.
- 190 1911. **HUDSON, EDWARD** ; 15 Queen Anne's Gate, S.W. 1.
1911. **HUDSON, REGINALD** ; 16 Warwick Road, Stratford-on-Avon.
1918. **INGLIS, CHARLES MALCOLM** ; Baghownie Factory, Laheria, Serai P.O. Behar, India.
1901. **INGRAM, Capt. COLLINGWOOD, F.Z.S.** ; Forest House, Westgate-on-Sea, Kent.
1902. **INNES BEY, Dr. WALTER FRANCIS** ; Curator of the Zoological Museum, School of Medicine, Cairo, Egypt.
- 195 1913. **IREDALE, TOM** ; 39 Northcote Avenue, Ealing, W. 5.
1888. **JACKSON, Sir FREDERICK JOHN, K.C.M.G., C.B., F.L.S., F.Z.S.** ; The Red House, Aldeburgh, Suffolk.
1892. **JAMES, HENRY ASHWORTH, F.Z.S.** ; Hurstmonceux Place, Hailsham, Sussex.
1896. **JESSE, WILLIAM, B.A., F.Z.S.** ; Meerut College, Meerut, India.
1891. **JOHNSTON, Sir HARRY HAMILTON, G.C.M.G., K.C.B., F.Z.S.** ; St. John's Priory, Poling, near Arundel, Sussex.
- 200 1905. **JOHNSTONE, EDWIN JAMES, F.Z.S.** ; Burrswood, Groombridge, Sussex ; and Junior Carlton Club, Pall Mall, S.W. 1.
1900. **JONES, Major HENRY, F.Z.S.** (late 62nd Regt.) ; 41 Vineyard Hill Road, Wimbledon Park, S.W. 19.
1909. **JONES, Surgeon-Commander KENNETH HURLSTONE, M.B., Ch.B., F.Z.S., R.N.** ; Medical Transport Office, Royal Naval Barracks, Chatham.
1899. **JOURDAIN, The Rev. FRANCIS CHARLES ROBERT, M.A.** ; Appleton Rectory, Abingdon, Berks.
1902. **Joy, NORMAN HUMBERT, M.R.C.S., L.R.C.P.** ; Theale, Berks.

Date of
Election.

- 205 1880. KELHAM, Brigadier-General HENRY ROBERT, C.B. (late Highland Light Infantry); Army and Navy Club, Pall Mall, S.W. 1.
1894. KELSALL, Lt.-Col. HARRY JOSEPH, R.A.; c/o Messrs. Cox & Co., 16 Charing Cross, S.W. 1.
1897. KELSALL, The Rev. JOHN EDWARD, M.A.; Milton Rectory, New Milton, Hants.
1904. KELSO, JOHN EDWARD HARRY, M.D.; Braeside, Edgewood, Lower Arrow Lake, British Columbia.
1914. KENNEDY, Capt. JOHN NOBLE, M.C., R.G.A.; The Manse, Port Patrick, Wigtownshire, Scotland.
- 210 1891. KERR, JOHN GRAHAM, F.R.S., F.Z.S., Regius Professor of Zoology; 9 The University, Glasgow.
1895. KINGSFORD, WILLIAM EDWARD; Cairo, Egypt.
1902. KINNEAR, NORMAN BOYD, C.M.Z.S.; Bombay Natural History Society, 6 Apollo Street, Bombay, India.
1910. KLOSS, CECIL BODEN, F.Z.S., F.R.A.I.; Assistant Director of Museums, Kuala Lumpur, Federated Malay States.
1892. LAIDLAW, THOMAS GEDDES; Bank of Scotland House, Duns, Berwickshire.
- 215 1913. LAMBERT, GODFREY CHARLES; Woodcote, Esher, Surrey.
1917. LAMPARD-VACHELL, BENJAMIN GARNET; The Cottage, Rudgwick, Sussex.
1884. LANGTON, HERBERT; St. Moritz, 61 Dyke Road, Brighton, Sussex.
1881. LASCELLES, The Hon. GERALD WILLIAM, F.Z.S.; Tillington House, Petworth, Sussex.
1892. LA TOUCHE, JOHN DAVID DIGUES, C.M.Z.S.; The Lodge, Glendalough, Co. Wicklow, Ireland.
- 220 1898. LEAROYD, A. ERNEST; Kirkgate Buildings, Huddersfield.
1910. LEMON, Mrs. MARGARETTA LOUISA, F.Z.S.; Hillcrest, Redhill, Surrey.
1898. LE SOUËF, DUDLEY, C.M.Z.S.; Director of the Zoological Gardens, Melbourne, Victoria, Australia.
1897. LILFORD, JOHN, Lord, F.Z.S.; Lilford Hall, Oundle, Northants.
1909. LINGS, GEORGE HERBERT; Richmond Hill, Chedale, Cheshire.
- 225 1897. LODGE, GEORGE EDWARD, F.Z.S.; 5 The Studios, Thurloe Square, S.W. 7.

Date of
Election.

1908. LONG, SYDNEY HERBERT, M.D., F.Z.S.; 31 Surrey Street, Norwich, Norfolk.
1919. LONGSTAFF, Capt. TOM GEORGE; Picket Hill, near Ringwood, Hants.
1904. LOWE, PERCY R., B.A., M.B., B.C.; British Museum (Nat. Hist.), Cromwell Road, S.W. 7.
1914. LOWE, WILLOUGHBY PRESCOTT; Gorsemoor, Throwleigh, Okehampton, Devon.
- 230 1904. LYNES, Captain HUBERT, C.B., C.M.G., R.N.; 23 Onslow Gardens, South Kensington, S.W. 7.
1917. MACKENZIE, JOHN MITCHELL DOUGLAS, B.A., C.M.Z.S., Indian Forest Service; c/o Thos. Cook & Son, Rangoon, Burma, India; 6 The Circus, Bath.
1916. MACKWORTH-PRAED, CYRIL W. (Scots Guards); Dalton Hill, Albury, Surrey.
1906. MACMILLAN, WILLIAM EDWARD FRANK; 42 Onslow Square, S.W. 7.
1906. MAGRATH, Lt.-Col. HENRY AUGUSTUS FREDERICK (51st Sikhs, F.F.); c/o Messrs. H. S. King & Co., 9 Pall Mall, S.W. 1.
- 235 1917. MALCOMSON, HERBERT THOMAS; Glenorchy, Knock, Belfast.
1917. MANN, Capt. EDWARD HAMILTON, M.C., R.H.A.; Junior United Service Club, Charles Street, S.W. 1.
1907. MANN, THOMAS HUGH, F.Z.S.; Trulls Hatch, Rotherfield, Sussex.
1904. MANSON-BAHR, Brevet-Major PHILIP HENRY, D.S.O., M.D., M.R.C.P., R.A.M.C.; 32 Weymouth Street, W. 1.
1904. MAPLETON-BREE, HARVEY WILLIAM, B.A.; Gable End, Allesley, Coventry.
- 240 1894. MARSHALL, ARCHIBALD McLEAN, F.Z.S.; Great Chitcombe, Brede, Sussex.
1894. MARSHALL, JAMES McLEAN, F.Z.S.; Bleaton Hallet, Blairgowrie, Perthshire.
1898. MASSEY, HERBERT; Ivy Lea, Burnage, Didsbury, Manchester.
1907. MATHEWS, GREGORY MACALISTER, F.L.S., F.R.S.E., F.Z.S.; Foulis Court, Fair Oak, Hants. (*Committee.*)
1915. MATON, EUSTACE BERTIE; Enford, Pewsey, Wilts.
- 245 1915. MAY, WILLIAM NORMAN, M.D.; The White House, Sonning, Berks.
1883. MEADE-WALDO, EDMUND GUSTAVUS BLOOMFIELD, F.Z.S.; Hever Warren, Hever, Kent.

Date of
Election.

1912. MEIKLEJOHN, Lt.-Colonel RONALD FORBES, D.S.O. (1st Bn. Royal Warwickshire Regt.); G.S.Q., G.H.Q. Syren, North Russian Expeditionary Force; 38 Queen's Gate Gardens, S.W. 1.
1899. MEINERTZHAGEN, Colonel RICHARD, D.S.O., F.Z.S. (Royal Fusiliers); 63 Bedford Gardens, Campden Hill, W. 8.
1886. MILLAIS, JOHN GUILLE, F.Z.S.; Compton's Brow, Horsham, Sussex.
- 250 1916. MILLARD, WALTER SAMUEL, F.Z.S.; Bombay Natural History Society, 6 Apollo Street, Bombay, India.
1903. MILLS, Canon HENRY HOLROYD, M.A., F.Z.S.; The Rectory, St. Stephen-in-Brannel, Grampound Road, Cornwall.
1879. MITCHELL, FREDERICK SHAW; Hornshaws, Millstream, B.C., Canada.
1901. MITCHELL, P. CHALMERS, M.A., D.Sc., LL.D., F.R.S., F.L.S., F.Z.S.; Secretary to the Zoological Society of London, Regent's Park, N.W. 8.
1919. MONTAGU, The Right Hon. E. S.; 24 Queen Anne's Gate, S.W. 1.
- 255 1914. MOULTON, Major JOHN CONEY, M.A., B.Sc., F.L.S., F.R.G.S., F.E.S.; Fort Canning, Singapore; The Hall, Bradford-on-Avon, Wilts.
1886. MUIRHEAD, GEORGE, F.R.S.E.; Speybank, Fochabers, Morayshire.
1893. MULLENS, Major WILLIAM HERBERT, M.A., LL.M., F.Z.S.; Westfield Place, Battle, Sussex.
1892. MUNN, PHILIP WINCHESTER, F.Z.S.; Stourwood Cottage, Stourwood Avenue, Southbourne, Hants.
1918. MUNT, HARRY RAYMOND; 10 Ashburn Place, South Kensington, S.W. 7.
- 260 1897. MUNT, HENRY, F.Z.S.; 10 Ashburn Place, South Kensington, S.W. 7.
1911. MURRAY-BUCHANAN, Capt. EDWARD MACKENZIE; Leny, Callandar.
1910. MURRAY, Capt. HERBERT WILLAUME, F.Z.S.; The Old House, Epsom, Surrey.
1907. NEAVE, SHEFFIELD AIREY, M.A., B.Sc., F.Z.S.; 24 De Vere Gardens, Kensington, W. 8.
1895. NESHAM, ROBERT, F.Z.S., F.E.S.; Utrecht House, Poynder's Road, Clapham Park, S.W. 4.

Date of
Election.

- 265 1904. NEWMAN, THOMAS HENRY, F.Z.S.; Newlands, Harrowdene Road, Wembley, Middlesex.
1917. NICHOLL, ARCHIBALD M. C.; Royal Naval College, Osborne, Isle of Wight.
1902. NICHOLS, JOHN BRUCE, F.Z.S.; Parliament Mansions, Victoria Street, S.W. 1.
1900. NICHOLS, WALTER BUCHANAN; Stour Lodge, Bradfield, Manningtree, Essex.
1876. NICHOLSON, FRANCIS, F.Z.S.; Ravenscroft, Windermere, Westmoreland.
- 270 1902. NICOLL, MICHAEL JOHN, F.Z.S.; Valhalla House, Zoological Gardens, Giza, Egypt.
1889. OGLE, BERTRAM SAVILE; Hill House, Steeple Aston, Oxon.
1907. OLDHAM, CHARLES, F.Z.S.; The Bollin, Shrublands Road, Berkhamsted, Herts.
1906. OSMASTON, BERTRAM BERESFORD (Imperial Forest Service); Pachmarhi, C.P., India.
1913. OWEN, JOHN HUGH; Old School House, Felsted, Essex.
- 275 1919. PAGE, WESLEY THEODORE, F.Z.S.; Langstone, Lingfield, Surrey.
1883. PARKER, HENRY, C.E.; 26 St. George's Road, St. Annes-on-the-Sea, Lanes.
1880. PARKIN, THOMAS, M.A., F.L.S., F.Z.S.; Fairseat, High Wickham, Hastings, Sussex.
1908. PATON, EDWARD RICHMOND, F.Z.S.; Hareshawmuir, By Kilmarnock, Ayrshire, Scotland.
1911. PATTERSON, WILLIAM HARRY; 25 Queen's Gate Gardens, S.W. 7.
- 280 1904. PEARSE, THEED; Courtenay, British Columbia.
1894. PEARSON, CHARLES EDWARD, F.L.S.; Hillcrest, Lowdham, Notts.
1902. PEASE, Sir ALFRED EDWARD, Bt., F.Z.S.; Pinchinthorpe House, Guisborough, Yorkshire; and Brooks's Club, St. James's Street, S.W. 1.
1891. PENROSE, FRANCIS GEORGE, M.D., F.Z.S.; Rathkeale, 51 Surrey Road, Bournemouth.
1900. PERCIVAL, ARTHUR BLAYNEY, F.Z.S.; Game Ranger, Nairobi, British East Africa; Sports Club, St. James' Square, S.W. 1.
- 285 1912. PERSHOUSE, Major STANLEY; Cuil Park, Bridge of Dee, Castle Douglas, Scotland.

Date of
Election.

1886. PHILLIPS, ETHELBERT LORT, F.Z.S.; 79 Cadogan Square, S.W. 1.
1893. PIGOTT, Sir THOMAS DIGBY, C.B.; The Lodge, Lower Sheringham, Norfolk.
1914. PITMAN, Capt. CHARLES ROBERT SENHOUSE (27th Punjabis); Drewton, Chelston, Torquay.
1908. PLAYER, W. J. PERCY; Wernfadog, Clydach, R.S.O., Glamorganshire.
- 290 1907. POCOCK, REGINALD INNES, F.R.S., F.L.S., F.Z.S.; Superintendent of the Zoological Gardens, Regent's Park, N.W. 8.
1917. POLIAKOV, GREGORY T. (Editor 'Messenger Ornithologique'); Moskva-Nijninovgorod Railway, Station Obiralovka, Savvino, Russia.
1905. POLLARD, Lt.-Col. ARTHUR ERSKINE ST. VINCENT (The Border Regiment); c/o Mrs. A. Pollard, Heatherlands, Lilliput, Dorset.
1896. POPHAM, HUGH LEYBORNE, M.A.; Houndstreet House, Pensford, Somerset.
1898. PRICE, ATHELSTAN ELDER, F.Z.S.; Salisbury Hall, St. Albans.
- 295 1901. PROUD, JOHN T.; Dellwood, Bishop Auckland, Durham.
1903. RALFE, PILCHER GEORGE; The Parade, Castletown, Isle of Man.
1903. RATCLIFF, FREDERICK ROWLINSON; 29 Connaught Square, W.2.
1917. RATTRAY, Col. RULLION HARE (retired); 68 Dry Hill Park Road, Tonbridge.
1917. RAW, WILLIAM, Warrant Officer R.N.R.; c/o Marconi Coy., London; Whitfield House, Goathland S.O., Yorkshire.
- 300 1879. RAWSON, HERBERT EVELYN; Comyn Hill, Ilfracombe, N. Devon.
1894. READ, RICHARD HENRY, M.R.C.S., L.R.C.P.; Church Street, Hanley, Staffordshire.
1888. READ, ROBERT H.; 8a South Parade, Bedford Park, W. 4.
1917. REEVE, Capt. JOHN SHERARD (Grenadier Guards), F.Z.S.; Leadenham House, near Lincoln.
1903. RENAUT, WILLIAM E.; Royal Academy of Music, York Gate, Marylebone Road, N.W. 1.
- 305 1908. RICHARDSON, NORMAN FREDERIC, F.R.G.S.; "Lynton," Brigstock Road, Thornton Heath, Surrey.
1907. RICHMOND, HERBERT WILLIAM, M.A., F.R.S.; King's College, Cambridge.

Date of
Election.

1895. RICKETT, CHARLES BOUGHEY, F.Z.S.; 27 Kendrick Road, Reading, Berks.
1896. RIPPON, Lt.-Col. GEORGE, F.Z.S.; United Service Club, Pall Mall, S.W. 1.
1907. RITCHIE, ARCHIBALD THOMAS AYRES.
- 310 1902. RIVIÈRE, BERNARD BERYL, F.R.C.S.; St. Giles's Plain, Norwich, Norfolk.
1898. ROBINSON, HERBERT C., C.M.Z.S.; Selangor State Museum, Kuala Lumpur, Federated Malay States.
1912. ROBINSON, HERBERT WILLIAM, F.Z.S.Scot.; Patchetts, Caton, near Lancaster.
1917. ROBINSON, SYDNEY MADDOCK; c/o Col. J. H. Evans, Fraser Road, Rangoon, Burma.
1919. ROBINSON, THEODORE RICHARD; Brunswick Lodge, Dunton Green, Kent.
- 315 1896. ROGERS, Lt.-Col. JOHN MIDDLETON, D.S.O., F.Z.S. (late 1st Dragoons); Riverhill, Sevenoaks, Kent.
1913. ROGERS, REGINALD NANKIVELL; Carwinion, near Falmouth, Cornwall.
1893. ROTHSCHILD, LIONEL WALTER, Lord, D.Sc., Ph.D., F.R.S., F.Z.S.; Zoological Museum, Tring, Herts.
1894. ROTHSCHILD, The Hon. NATHANIEL CHARLES, M.A., F.Z.S.; Arundel House, Kensington Palace Gardens, W. 8.
1918. ROWAN, WILLIAM; Bedales School, Petersfield, Hants.
- 320 1907. RUSSELL, Capt. CONRAD GEORGE EDWARD, F.Z.S. (Beds. Yeomanry); 2 Audley Square, W. 1.
1910. RUSSELL, HAROLD, F.Z.S.; 16 Beaufort Gardens, Chelsea, S.W. 3.
1883. ST. QUINTIN, WILLIAM HERBERT, F.Z.S.; Scampston Hall, Rillington, Yorkshire.
1903. SANDEMAN, Lt.-Col. ROBERT PRESTON (R. Gloucester Hussars); Dan-y Parc, Crickhowell, S. Wales.
1889. SAPSWORTH, ARNOLD DUER, F.Z.S.; 30 Sussex Place, Regent's Park, N.W. 1.
- 325 1902. SARGEAUNT, ARTHUR ST. GEORGE; Exbury, Padstow, Cornwall.
1914. SAUER, Dr. HANS, F.Z.S.; Bath Club, Dover Street, W. 1.
1909. SAVAGE, The Rev. ERNEST URMSON; The Vicarage, Levens, Milnthorpe, Westmoreland.

Date of
Election.

1891. SOLATER, WILLIAM LUTLEY, M.A., F.Z.S.; 10 Sloane Court, Chelsea, S.W. 1. (*Editor.*)
1908. SEPPINGS, Major JOHN WILLIAM HAMILTON, A.P.D.; The Castle, Cape Town, South Africa.
- 330 1899. SERLE, The Rev. WILLIAM, M.A., B.D.; The Manse, Duddingston, Edinburgh.
1901. SETH-SMITH, DAVID, F.Z.S.; 34 Elsworthy Road, South Hampstead, N.W. 3.
1904. SETH-SMITH, LESLIE MOFFAT, B.A., F.Z.S.; Tangley, Caterham Valley, Surrey; and Kampala, Uganda.
1909. SETON, MALCOLM COTTER CARISTON; 13 Clarendon Road, Holland Park, W. 11; and Union Club, Trafalgar Square, S.W. 1.
1865. SHEPHERD, The Rev. CHARLES WILLIAM, M.A., F.Z.S.; Trottiscliffe Rectory, Maidstone, Kent.
- 335 1917. SHIPTON, WILLIAM, B.A., M.D.; 2 The Square, Buxton, Derbyshire.
1918. SLADEN, Major ALEXANDER GEORGE LAMBART; Kingswood House, The Lee, Bucks; and Junior Carlton Club, S.W. 1.
1908. SMALLEY, FREDERIC WILLIAM, F.Z.S.; Windermere, 4 Blackheath Park, S.E. 3.
1918. SMEED, Major CECIL WILLIAM, R.F.A.; Tyes Cross, Sharpthorne, East Grinstead, Sussex.
1914. SMITH, Major JOHN LINDSAY (Indian Army); Supply & Transport Corps, Commdt. Camel Corps, Multan, Punjab, India.
- 340 1918. SMITH, THOMAS; Whiston Eaves, Froghall, Stoke-on-Trent.
1906. SNOUCKAERT VAN SCHAUBURG, Baron RENÉ CHARLES; Doorn, Holland.
1903. SPARROW, Lt.-Col. RICHARD, F.Z.S. (7th Dragoon Guards); Rookwoods, Sible Hedingham, Essex.
1906. STANFORD, Staff-Surgeon CHARLES EDWARD CORTIS, B.Sc., M.B., R.N.
1910. STANFORD, EDWARD FRASER; 12 A Maddox Street, Regent Street, W. 1.
- 345 1913. STANFORD, Major HENRY MORRANT, M.C., R.F.A., 115 Battery, B.E.F., France; c/o Messrs. Edward Stanford, Ltd., 12-14 Long Acre, W.C. 2.

Date of
Election.

1913. STANFORD, Capt. JOHN KEITH, M.C.; c/o Messrs. Edward Stanford, Ltd., 12-14 Long Acre, W.C. 2.
1915. STAPLES-BROWNE, Capt. RICHARD CHARLES, B.A., F.Z.S. (New Zealand Med. Corps); Brashfield House, Bicester, Oxon.
1900. STARES, JOHN WILLIAM CHESTER; Portchester, Hants.
1902. STENHOUSE, Surgeon-Capt. JOHN HUTTON, M.B., R.N.; Royal Naval Hospital, Gibraltar.
- 350 1910. STEVENS, HERBERT; Gopaldhara, Mirik P.O., Kurseong, Darjiling Himalayan Rly., India.
1906. STEWARD, EDWARD SIMMONS, F.R.C.S.; 30 Victoria Avenue, Harrogate, Yorks.
1914. STEWART, JOHN; Mainshill, Beith, Ayrshire.
1917. STONEHAM, Capt. HUGH FREDERIC (1st Battn. East Surrey Regt.); "Stoneleigh," Reigate, Surrey; and Signal Service, R.E.
1881. STUDDY, Col. ROBERT WRIGHT (late Manchester Regiment); Westbury, Paignton, Devon.
- 355 1918. STURGE, ARTHUR LLOYD; Shepherd's Green, Chislehurst, Kent.
1887. STYAN, FREDERICK WILLIAM, F.Z.S.; Stone Street, near Sevenoaks, Kent.
1914. SUTHERLAND, LEWIS ROBERTSON, M.B., C.M., Medical School, Dundee, N.B.; Wellgate House, West Newport, Fife-shire.
1907. SWANN, Lt. GEOFFREY, R.A.S.C.; 6 Moorgate Street, E.C. 2.
1905. SWANN, HAROLD, F.Z.S.; 9 Evelyn Gardens, S.W. 7.
- 360 1887. SWINBURNE, JOHN.
1882. SWINHOE, Col. CHARLES, M.A., F.L.S., F.Z.S.; 4 Gunterstone Road, West Kensington, W. 14.
1884. TAIT, WILLIAM CHASTER, F.Z.S.; Entre Quintas 155, Oporto, Portugal.
1911. TALBOT-PONSONBY, CHARLES GEORGE; 5 Crown Office Row, Temple, E.C. 4.
1911. TATTON, REGINALD ARTHUR; Cuerden Hall, Bamber Bridge, Preston, Lancs.
- 365 1914. TAVISTOCK, HASTINGS WILLIAM SACKVILLE, Marquis of, F.Z.S.; Warblington House, Havant.
1905. TAYLOR, LIONEL EDWARD, F.Z.S.; Bankhead, Kelowna, British Columbia.
1886. TERRY, Major HORACE A. (late Oxfordshire Light Infantry); Compton Grange, Compton, Guildford, Surrey.

Date of
Election.

1916. THOMASSET, BERNARD CHARLES, F.Z.S.; The Manor House, Ashmansworth, near Newbury, Berks.
1904. THOMPSON, MAJOR WILLIAM R., R.G.A.; Ravello, Carlton Road, Weymouth.
- 370 1911. THOMSON, A. LANDSBOROUGH, M.A.; Castleton House, Old Aberdeen, Scotland.
1900. THORBURN, ARCHIBALD, F.Z.S.; Hascombe, Godalming, Surrey.
1893. THORPE, DIXON L.; Loshville, Etterby Seaur, Carlisle, Cumberland.
1903. TICEHURST, CLAUD BUCHANAN, M.A., M.D., M.R.C.S.; Grove House, Lowestoft, Suffolk.
1894. TICEHURST, NORMAN FREDERIC, M.A., M.B., F.R.C.S., F.Z.S.; 24 Pevensey Road, St. Leonards-on-Sea, Sussex.
- 375 1902. TOWNSEND, REGINALD GILLIAT, M.A.; Buckholt, West Tytherley, Salisbury, Wilts.
1914. TREATT, CHAPLIN COURT;
1893. TREVOR-BATTYE, AUBYN, M.A., F.L.S., F.Z.S.; Ashford Chace, Petersfield,* Hants; and Royal Societies Club, St. James's Street, S.W. 1.
1913. TUCKWELL, EDWARD HENRY, F.Z.S.; Berthope, Compton, near Guildford, Surrey.
1911. TYRWHITT-DRAKE, HUGH GARRARD, F.Z.S.; Cobtree, Sandling, Maidstone, Kent.
- 380 1864. UPCHER, HENRY MORRIS, F.Z.S.; Sheringham Hall, Cromer, Norfolk.
1918. VAIZEY, GEORGE DE HORNE; 53 The Pryors, Hampstead, N.W. 3.
1918. VAIZEY, KER GEORGE RUSSELL; 26 Cornwall Gardens, S.W. 7.
1910. VAN SOMEREN, DR. ROBERT ABRAHAM LOGAN; Jinja, Uganda, British East Africa.
1912. VAN SOMEREN, DR. VICTOR GURNET LOGAN; c/o Tring Museum, Tring, Herts.
- 385 1908. VAUGHAN, MATTHEW; The Limes, Marlborough, Wilts.
1906. VAUGHAN, Commdr. ROBERT E., R.N.; Whittington Lodge, Worcester.
1913. VENNING, Capt. FRANCIS ESMOND WINGATE; c/o O.C. Depot, 31st Punjabis, Rawalpindi, India.

Date of
Election.

1881. VERNER, Col. WILLIAM WILLOUGHBY COLE (late Rifle Brigade);
Hartford Bridge, Winchfield, Hants; and United Service
Club, S.W. 1.
1902. WADE, EDWARD WALTER; Melton Road, North Ferriby, East
Yorks.
- 390 1886. WADE-DALTON, Col. H. D.; Hauxwell Hall, Finghall, R.S.O.,
Yorkshire.
1916. WAIT, WALTER ERNEST, Deputy Collector of Customs,
Colombo, Ceylon.
1918. WALKER, ALEXANDER HOPE, M.D., L.R.C.P., M.R.C.S.; The
Common, Cranleigh, Surrey.
1914. WALL-ROW, JOHN; 51 Courtfield Gardens, S.W. 5.
1895. WALLIS, HENRY MARRIAGE; Ashton Lodge, Christchurch
Road, Reading, Berks.
- 395 1899. WALTON, Lt.-Col. HERBERT JAMES, M.D., F.R.C.S., C.M.Z.S.,
I.M.S.; c/o Messrs. King, King & Co., P.O. Box No. 110,
Bombay, India.
1872. WARDLAW-RAMSAY, Col. ROBERT GEORGE, F.Z.S.; Whitehill,
Rosewell, Midlothian.
1903. WATT, HUGH BOYD, F.Z.S.; 12 Great James Street, Bedford
Row, W.C. 1.
1912. WELLS, CHARLES HENRY; Broomfield, 80 Brookhouse Hill,
Fulwood, Sheffield.
1919. WEMYSS-CHARTERIS, The Hon. GUY LAWRENCE; 26 Catherine
Street, Buckingham Palace Road, S.W. 1.
- 400 1912. WENNER, MAX VICTOR; Burnside, Prestbury, near Maccles-
field, Cheshire.
1913. WHISTLER, HUGH, F.Z.S. (Indian Police); Caldbee House,
Battle, Sussex; and c/o Messrs. King, King & Co., Bombay,
India.
1918. WHITAKER, Capt. JOHN ALBERT CHARLES (Coldstream Guards);
Babworth Hall, Retford, Notts.
1891. WHITAKER, JOSEPH I. S., F.Z.S.; Malfitano, Palermo, Sicily.
1909. WHITE, HENRY LUKE; Belltrees, Scone, New South Wales,
Australia.
- 405 1903. WHITE, STEPHEN JOSEPH, F.Z.S.
1912. WHYMPER, SAMUEL LEIGH; Oxford Mansions, Oxford Street,
W. 1.; and Oriental Club, Hanover Square, W. 1.
1914. WICKHAM, PERCY FREDERIC; c/o Messrs. Thos. Cook & Son,
Rangoon, Burma.

Date of
Election.

1915. WILD, OLIVER HILTON ; Ariel Lodge, Cheltenham, Gloucestershire.
1894. WILKINSON, JOHNSON ; Vermont, Huddersfield, Yorkshire.
- 410 1912. WILKINSON, WILLIAM ARTHUR, F.L.S., F.Z.S. ; Duncrueff, Tudor Hill, Sutton Coldfield, Warwickshire.
1916. WILLIAMSON, WALTER JAMES FRANKLIN, C.M.G., F.Z.S. (Financial Adviser to the Government of Siam); Bangkok, Siam.
1897. WILSON, ALLAN READ, B.A., M.B., B.Ch. ; Eagle House, Blandford, Dorset.
1888. WILSON, CHARLES JOSEPH, F.Z.S. ; 14 Suffolk Street, Pall Mall, S.W. 1.
1897. WITHERBY, HARRY FORBES, M.B.E., F.Z.S. ; 3 Cannon Place, Hampstead, N.W. 1.
- 415 1908. WITHERINGTON, GWYNNE ; 19 Sumner Place, South Kensington, S.W. 7.
1899. WOLLASTON, ALEXANDER FREDERICK RICHMOND, B.A.
1912. WOOD, MARTIN STANLEY, M.D., R.A.M.C. ; Cheadle Royal, Cheadle, Cheshire.
1917. WOODFORD, Capt. CHARLES EDWARD MONTGOMERIE (1st Battn. Sherwood Foresters) ; 8 Dry Hill Park Road, Tonbridge, Kent.
1916. WOODFORD, CHARLES MORRIS, C.M.G. ; The Gristead, Cowfold, Sussex.
- 420 1912. WOODHOUSE, CECIL, M.D. ; Coaxdon Hall, Axminster, South Devon.
1902. WORKMAN, WILLIAM HUGHES, F.Z.S. ; Lismore, Windsor, Belfast, Ireland.
1912. WORMALD, HUGH ; Heathfield, Dereham, Norfolk.
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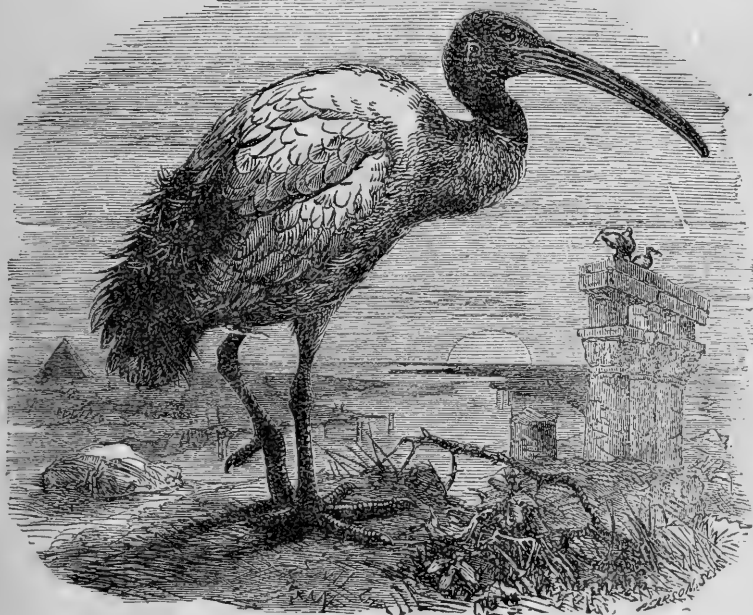
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EDITED BY

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THE IBIS.

ELEVENTH SERIES.

VOL. I. No. 1. JANUARY 1919.

I.—*Notes on Collections of Birds in the British Museum, from Ecuador, Peru, Bolivia, and Argentina.* Part I. TINAMIDÆ—RALLIDÆ. By CHARLES CHUBB, F.Z.S., M.B.O.U.

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(Plate I. and 2 Text-figures.)

THE following notes are based, chiefly, on a collection made by the late Perry O. Simons in the Andean regions of Ecuador, Peru, Bolivia, and Argentina from the latter part of 1898 to November 1901, at varying altitudes up to 5000 metres.

The collection, which consists of about three thousand specimens, contains many new forms and records of species that were not previously known to occur in the localities visited, thus adding new facts to the distribution of the species.

The expedition was a private undertaking initiated and financed by Mr. Oldfield Thomas, F.R.S., of the Department of Zoology, British Museum (Natural History), whose enthusiasm is so well known among mammalogists and who has done so much to advance that branch of Zoological Science. His object was to obtain a collection, as complete

as possible, of the mammals of the northern portion of the South American Andes, but, with his usual generosity, he allowed Simons to collect birds also during his journey. The specimens thus collected by Simons were acquired by the British Museum and form a particularly welcome addition to the Bird-Room, which had previously been poor in specimens from the Andean regions. Ornithologists who make a special study of the avifauna of South America will, therefore, be grateful to Mr. Oldfield Thomas for his patriotic action in thus enriching the National Collection.

There are, however, two other collections included in these notes,—one from the Andes of Ecuador, made by Mr. Walter Goodfellow and presented to the British Museum by Mr. E. J. Brook; and the other from Trujillo in north-west Peru, which was formed and presented by the late Lord Brabourne.

Such notes as were made by the collectors are placed in inverted commas “ ”, and their names in brackets ().

The references to literature, in addition to those to the original description, are restricted, as much as possible, to works and papers dealing with the Andean region, others being referred to only when there has been a change in the nomenclature.

A list of the localities where specimens were collected by Simons is given below, arranged in chronological order from his diaries. The names of the Provinces have been added where possible in order to assist in locating the exact situation of the places where the collections were made, which are often not to be found in the most recent maps.

ECUADOR.

1	Nov. 1898.	Puna Island.	Prov. Guayas.
4-11	„ ’98.	Zenda.	„ „
18-22	„ ’98.	Chougou.	„ „
25	„ ’98.	Guayaquil.	„ „
9	„ ’98.	Colta Lake.	„ „
12-25	Dec. ’98.	Sinche, Guaranda.	„ „
30	„ ’98.	Riobamba.	Prov. Chimborazo.
16	Jan. 1899.	Guallabamba.	„ „

	Feb. 1899.	Mirador, Rio Tapo.		Prov. Azuay.
1	Mar. '99.	Talahua, 4000 metres.		" "
10	" '99.	Povenir.		Prov. Bolivar.
27	" '99.	Riobamba.		Prov. Chimborazo.
5-18	Apr. '99.	Cañar.		Prov. Cañar.
23	" '99.	Cuenca, 2200 metres.		Prov. Azuay.
13	May '99.	Curube, 2500 metres.		" "
16	" '99.	Mararuria, Paramo, 3000 metres.		
16	" '99.	Ona, Guishapa, 2000 metres.		Prov. Azuay.
1	June '99.	Loja, 1800 metres.		" "
12	" '99.	Hacienda de Curtincapa, Zaruma, 1000 metres.		Prov. El Oro.
12	" '99.	Curtincapa.		" "
20	" '99.	Guallavo, 1000 metres.		" "
8	July '99.	Cangunana, 1500 metres.		" "
9	" '99.	Casango.		" "
10	" '99.	Guachanama, 2000 metres.		" "
11	" '99.	Dormugillo.		" "
12	" '99.	Sapatillo.		" "

PERU.

18	July 1899.	Sulana,	60 metres.	Prov. Piura.
20	" '99.	Famarindo.		" "
21	" '99.	Omotape,	50	" "
26	" '99.	Piura,	50	" "
4	Aug. '99.	Catacaos,	50	" "
22	" '99.	Chuloconuo,	80	" "
24	" '99.	Marropon,	142	" "
4	Sept. '99.	Eten.		Prov. Lambeyque.
29	Oct. '99.	Talon,	80	Prov. Cajamarca.
5	Nov. '99.	San Pablo,	1800	" "
13-18	" '99.	Cajamarca,	2800	" "
24	" '99.	San Martos,	200	Prov. Libertad.
25	" '99.	La Grama,	2000	" "
28	" '99.	Huamachuca,	3500	" "
1	Dec. '99.	Hungas Marcos Paramo,	3500	" "
2	" '99.	Tulpo,	3000	" "
	" '99.	Mollapata Paramo,	2500	" "
4	" '99.	Coreuges Paramo,	3300	" "
7	" '99.	Uramarca nr. Pal- lasca, Rio Ushpe,	1200	" "
9-14	" '99.	Caraz,	2200	Prov. Ancachs.
15	" '99.	Yogay,	2400	" "

17	Dec. 1899.	Carohas,	2600 metres.	Prov. Ancachs.
19	" '99.	Recuay,	3400 "	" "
20	" '99.	Tecapampa,	3600 "	" "
20	" '99.	Puno Paramo,		
		16° S. 70° W.,	4000 "	" "
22	" '99.	Marca,	3000 "	" "
24	" '99.	Shigriay Tambo,	1600 "	" "
30	" '99.	Chancey near the sea.		Prov. Lima.
10	Jan. 1900.	Callao,	8 metres.	" "
16	" '00.	San Lorenzo Island, off Callao.		" "
29-31	" '00.	Chosica,	850 metres.	" "
2, 3 Feb.	'00.			
7-12	" '00.	Surco,	2050 "	" "
17-21	" '00.	San Mateo,	3200 "	" "
24-26	" '00.	Gálera,	4800 "	Prov. Junin.
1	Mar. '00.	Oroya,	4200 "	" "
2	" '00.	Tarma,	3500 "	" "
3	" '00.	Ancobamba,	3500 "	" "
4	" '00.	Hatol Huacapista.		" "
6	" '00.	San Ramon,	1000 "	" "
7	" '00.	La Merced,	1000 "	" "
9-30	" '00.	"The Camp," Rio Perene,	800 "	" "
5-14 Apr.	'00.			
19	" '00.	Puntoyacu,	1200 "	" "
23	" '00.	Huacapistana,	2000 "	" "
17-21 May	'00.	Rio Tambo,	20 "	" "
28-31	" '00.	Arequipa,	2424 "	Prov. Arequipa.
4-9 June	'00.	Sumbay,	4275 "	" "
11	" '00.	Diuvia, Sumbay,		
		Colca,	4500 "	" "
14	" '00.	Caylloma,	4300 "	" "
25	" '00.	Tirapata, Titicaca		
		Basin,	3600 "	Prov. Puno.
30	" '00.	Crucero on the pass between Puno and the Upper Inambari,	4500 metres.	" "
3	July '00.	Limbane,	3300 "	" "
4-6	" '00.	Rio Limbane,	2000 "	" "
8	" '00.	Segravio,	1500 "	" "
9	" '00.	Huroya,	1000 "	" "
9	" '00.	Rio Inambari,	1000 "	" "
10-24	" '00.	Oroya,	1500 "	" "
26	" '00.	Limbane,	3400 "	" "
28	" '00.	Aricoma Lake,	5000 "	" "
30	" '00.	Segravio,	4500 "	" "

BOLIVIA.

13	Aug. 1900.	La Paz,	4000 metres.	Prov. La Paz.
16-17	" '00.	Sorato,	3000-4000 "	" "
19	" '00.	Oyane,	3500 "	" "
23, 24	" '00.	Mapiri,	1600 "	" "
25	" '00.	Bella Vista.		" "
26	" '00.	San Carlos,	1200 "	" "
27	" '00.	Sarampioni,	800 "	" "
29	" '00.	San Ernesto.		
14	Sept. '00.			" "
15	" '00.	Chimate,	700 "	" "
17	Oct. '00.	San Ernesto,	1000 "	" "
20-23	" '00.	Sorato,	3500-3800 "	" "
9	Nov. '00.	Palca, 18 miles E. of La Paz.		" "
10	" '00.	Yanacachi, 67° 5' W.		
		16° S.,	3500 metres.	" "
13, 14	" '00.	Rio Tamampaya,	1500 "	" "
20-24	" '00.	Astillera,	2700 "	" "
17-31	Dec. '00.	Chulumani,		
12	Jan. 1901.		2000 "	" "
10-29	" '01.	Chocachaca, Rio Tamampaya,	1200 "	" "
4	Feb. '01.	Tacama,	2000 "	" "
14-20	" '01.	Astillera,	2700 "	" "
24	" '01.	Achecachi, Titicaca.		Prov. Cochabamba.
9	Mar. '01.	Cosmini,	4300 "	" "
15	" '01.	Caracollo,	4000 "	" "
22	" '01.	Tapacari,	3000 "	" "
1-6	Apr. '01.	Paratani,	2300 "	
18-24	" '01.	Cochabamba,	2500 "	" "
5	May '01.	Choro,	3500 "	" "
17	" '01.	Langunillas,	3500 "	" "
18-27	" '01.	Charuplaya,	1300 "	Prov. La Paz.
28	" to	Rio Blanco.		
4	July '01.			" "
8	" '01.	Langunillas,	3800 "	" "
13	" '01.	Choquecamate,	4000 "	Prov. Cochabamba.
15	" '01.	San Carlos,	1600 "	Prov. La Paz.
22-25	" '01.	Choro.		Prov. Cochabamba.
29	" '01.	Choquecamate,	4000 "	" "
5-24	Aug. '01.	Oruro,	3694 "	Prov. Oruro.
28	" '01.	Livichuco,		
		66° 5' W. 19° S.,	4500 "	Prov. Potosi.
3-12	Sept. '01.	Sucre, 65° W.		
		19° S.,	2844 "	Prov. Chiquisaca.
18-21	" '01.	El Cabrada, Posta,		
		65° 5' W. 19° 5' S.,	3500 "	" "

27	Sept. 1901.	Potosi,	4300 metres.	Prov. Potosi.
10	Oct. '01.	Challapata.		Prov. Oruro.
17	" '01.	Pampa Aullagas, 67° W. 19° 3' S.,	3700 "	" "
1	Nov. '01.	Uyuni, 67° W. 20° 5' S.,	3660 "	Prov. Potosi.

ARGENTINA.

15	Nov. 1901.	Punta de Vacas,	2500 metres.	Prov. Mendoza.
18	" '01.	Palmira,	900 "	" "
27	" '01.	Cruz del Eje,	600 "	Prov. Cordoba.

Systematic List.

Family TINAMIDÆ.

Tinamus tao weddelli.

Tinamus weddelli Bonap. Tabl. Parall. ordre Gallin. (ex-trait pp. 12, 15, 1856): Tipuani Valley, Bolivia.

No. 2432. ♂. San Ernesto, Upper Beni River, Bolivia, 1000 metres, 29 Sept. 1900. Native name "Caloma." Culmen 37 mm., wing 280, tail 101, tarsus 84. "Found in woods, feeding on nuts and fruit."

No. 2434. ♀ imm. San Ernesto, 1000 metres, 29 Sept. 1900. Culmen 40 mm., wing 260, tail 104, tarsus 90.

These individuals differ from specimens in the British Museum from Venezuela in the coarse markings on the upper parts and the more slaty-grey hue. The female, which is immature, is spotted with white on the wing-coverts and scapulars.

They also differ in the colour of the flanks and thighs—the male being uniformly barred on these parts, while the female is mottled.

These two specimens were collected at San Ernesto, near Mapiri on the upper Beni River, which cannot be far from the locality in which the type of *T. weddelli* was obtained, as Bonaparte gives the locality: the virgin forest in the Tipuani Valley in the Province of La Paz, Bolivia. I have not, hitherto, seen any specimens of this group from Bolivia; and although the present examples are very close to *T. tao*

kleei, I am inclined to use Bonaparte's name, which was founded on a Bolivian bird, rather than extend the range of *T. t. kleei* with insufficient material to verify it.

***Nothocercus julius salvadorii*.**

Nothocercus salvadorii Chubb, Bull. Brit. Orn. Club, xxxiii. 20 Jan. 1914, p. 95 : Ecuador.

Tinamus julius Sclater, P. Z. S. 1858, p. 76 : Rio Napo, not Rio Negro as given by Salvadori & Festa.

Nothocercus julius Salvad. & Festa, Boll. Mus. Torino, xv. 1899, No. 357, p. 51 : Puno, Ecuador.

An adult male from the west side of Pichincha, western Ecuador, 11,000 feet, Feb. 1915. "Iris brownish red; feet dull burnt-sienna; bill dark brown, lower mandible paler" (*W. Goodfellow*).

This specimen, which was collected by W. Goodfellow and presented to the British Museum by Mr. E. J. Brook, is much more olive than *N. j. salvadorii* on the upper parts, but still retains the wide dark bars as in the type. It differs, however, in having the mantle finely freckled as in *N. julius*, in consequence of which I am compelled to reduce its status to that of a subspecies. On the under surface it differs from *N. julius* in the more extensive white throat, darker freckled olive throat-band, and the paler rufous on the breast.

Total length 305 mm., culmen 35, wing 192, tail 64, tarsus 61.

***Crypturus obsoletus punensis*.**

Crypturus obsoletus punensis Chubb, Bull. Brit. Orn. Club, xxxviii. 29 Dec. 1917, p. 30.

Crypturus obsoletus (nec Temm.) Sclater & Salvin, P. Z. S. 1879, p. 642 : Tilotilo.

Adult male. This form differs from *C. o. obsoletus* in its smaller size and the deeper and richer coloration of the entire plumage. "Iris salmon-red; bill and feet dark" (*P. O. Simons*).

Total length 240 mm., culmen 25, wing 151, tail 40, tarsus 46.

No. 2186. ♂. Oroya, Puno, Peru, 1000 metres, 15 July, 1900. Native name "Perdiz." "In woods."

No. 2551. ♂. Chulumani, Bolivia, 1700 metres, 26 Dec. 1900. Native name "Coloma." "In bush by creek."

No. 2646. ♀. Chulumani, 2200 metres, 16 Jan. 1901. Native name "Paloma Coloma." "In bush on the ground."

I have not seen an example of *C. o. obsoletus* from Paraguay, which is the type locality, but have compared Simons' birds with specimens in the British Museum from the Rio Parana, São Paulo, and Rio de Janeiro, all of which agree in being larger in size and paler in coloration.

In addition to the type from Oroya, Department of Puno, southern Peru, and the male and female from Chulumani in Bolivia, collected by P. O. Simons, there is an adult bird in the Museum collected by the late Clarence Buckley at Tilotilo in the Province Yungas, Bolivia, which is identically the same as those in the Simons collection.

***Crypturus garleppi affinis*, subsp. nov.**

Crypturus garleppi Berlepsch, Ber. Allg. Deutschl. Orn. Ges., Dec. 1892, p. 13: Santa Cruz de la Sierra, Bolivia.

No. 2678. ♀. Rio Blanca, Bolivia, 1000 metres, 26 June, 1901. Type of the subspecies.

According to Count Salvadori's description and remarks on *C. garleppi* in the Catalogue of the Birds in the British Museum, vol. xxvii. 1895, p. 53, it would appear that the species was closely allied to *C. atricapillus*, but I do not consider that the specimen in the Simons collection is at all nearly allied to that species. I am, therefore, giving a description of it.

Adult female. Middle of the crown of the head chestnut-brown with blackish bars and edgings to the feathers, becoming paler on the lores, sides of face, and hind-neck, where the dark markings are much more minute; lower hind-neck and mantle dusky rufous-brown barred and mottled with blackish and washed with hoary-grey; upper back and scapulars ochreous brown narrowly barred with

black which becomes much broader on the remainder of the back and wings, where the buff, or fulvous bars and edgings are very narrow compared with the black interspaces; bastard-wing, primary-coverts, and primary quills greyish brown, darker on the outer webs, and buff mottlings at the tips of the last which cross the entire feather on the innermost secondaries; tail blackish banded with rufous-buff, the bands rather broader than those on the back; chin and throat pale rufous, becoming darker on the lower throat where the feathers are minutely barred with blackish; fore-neck slate-grey with rufous-chestnut edges to some of the feathers, this colour increasing in extent on the breast where it occupies nearly the whole of the feather; paler again on the abdomen, lower flanks, and under tail-coverts, where the feathers are buff, or fulvous barred or mottled with blackish; under wing-coverts silvery grey or white, the marginal ones dark brown or sooty-black; under surface of quills pale brown, broadly margined with grey on the inner edges.

Total length 330 mm., culmen 32, wing 177, tail 52, tarsus 55.

Crypturus transfasciatus.

Crypturus transfasciatus Selater & Salvin, P. Z. S. 1878, p. 141, pl. xiii.: Santa Rosa, Ecuador; Salvadori & Festa, Boll. Mus. Torino, xv. 1899, No. 357, p. 51: Guayaquil.

No. 173. ♂. Guayaquil, Ecuador, 1 Dec. 1898. "Found in thick jungle."

There is a specimen of this species in the British Museum from the Balzar Mountains, Ecuador, collected by Illingworth, which Count Salvadori regarded as identical with *C. transfasciatus*. It differs, however, from the one in the Simons collection in being almost uniform creamy-white on the under surface, while the barrings on the upper back and mantle are similar to those of the type. The following are the measurements of the three individual birds mentioned above:—

No. 173 Simons collection: Culmen 27 mm., wing 160, tail 47, tarsus 54.

C. transfasciatus (type): "Rostrum a rictu 1.5, alæ 6.2, caudæ 2.1, tarsi 2.9."

The specimen from Balzar Mts. has the following measurements:—Culmen 29 mm., wing 142, tail 43, tarsus 47.

***Crypturellus parvirostris*.**

Crypturus parvirostris Wagler, Syst. Av. 1827, *Crypturus* 13: Brazil.

Crypturellus parvirostris Brabourne & Chubb, Ann. & Mag. Nat. Hist. (8) xiv. Oct. 1914, p. 322.

No. 2677. ♂ imm. Rio Solocame, Bolivia, 1400 metres, 24 January, 1901. Native name "Peso." "On open hillside. Feeding on seeds."

This specimen, which is sexed as male by Simons, differs from the adult birds, both on the upper and under surface, in being darker and in having a patch of white feathers with black tips on each side of the forehead; this is no doubt the remains of youth.

***Nothoprocta cinerascens*.**

Nothura cinerascens Burmeister, J. f. O. 1860, p. 259: Tucuman.

Nothoprocta cinerascens Selater & Hudson, Argent. Orn. ii. 1889, p. 210.

Two males and three females in fully adult plumage, from El Carrizal, Sierra de Cordoba, Argentina, collected by Mr. Robin Kemp, at an altitude of 1000 metres, during November and December, 1915.

I have compared the specimens mentioned above with others in the National Collection, and find them to be not quite so white on the abdomen, but otherwise identical both in colour of plumage and measurement of the wings.

***Nothoprocta pentlandii*.**

Rhynchotus pentlandii Gray, List B. Brit. Mus., Gallinæ, 1867, p. 103: Andes of Bolivia.

Nothoprocta pentlandi Salvadori, Cat. B. Brit. Mus. xxvii. 1895, p. 555, pl. xvi.

No. 2647. ♂. Chulumani, Bolivia, 2000 metres, 16 Jan. 1901. Native names, "Guayco, Perdiz-Pesa, or Incocal."

No. 2818. ♀. Paratani, Bolivia, 2500 metres, 4 April, 1901.

Nos. 3086 ♀, 3087 ♂. El Cabrada, 3500 metres, 18 Sept. 1901. "On hillsides in grass, feeding on grain and insects."

The male, No. 2647, and female, No. 2818, agree in colour of plumage very well with the type in the British Museum, but Nos. 3086 and 3087 differ, especially the male, in being perceptibly paler both on the upper and under surface. They are also slightly larger in wing-measurements [♂ 140 mm., ♀ 145, as against ♂ 138, ♀ 142]. I do not attach any importance to these measurements, however, as the wing-measurement of the type is 148 mm. and it is a much darker bird. The difference of altitude, moreover, may account for the pale coloration of the El Cabrada specimens, which approach *N. coquimbica* in the colour of the back and the pale under surface.

***Nothoprocta pentlandii simonsi*.**

Nothoprocta pentlandii simonsi Chubb, Bull. Brit. Orn. Club, xxxviii. 29 Dec. 1917, p. 30.

This subspecies is somewhat intermediate between *N. curvirostris peruana* and *N. pentlandii pentlandii*. It approaches the head and back of the former and the grey fore-neck, with buffy-white central spots, and secondary quills of the latter.

The type, No. 1414 ♀, which is in the British Museum, was collected at San Pablo, Cajamarca, Peru, at an altitude of 1500 metres, on 5 November, 1899.

***Nothoprocta curvirostris*.**

Nothoprocta curvirostris Sclater & Salvin, Nomencl. Av. Neotr. 1873, pp. 153, 163: Calacali, Ecuador; Tacz. Orn. Pér. iii. 1886, p. 306; Salvad. & Festa, Boll. Mus. Torino, xv. 1899, No. 357, p. 52: Ecuador.

The two adult females, and a young female which still has down attached to some of its feathers, collected at

Gorazon, western Ecuador, at an altitude of 13,000 feet, differ from the type in having the dark pattern of the feathers on the upper surface everywhere deeper black, which stands out in bold relief on comparison. This difference may be due, however, to the higher altitude, as I notice that the type was obtained by Fraser at Calacali at an altitude of 8000 feet, and the co-type, also collected by Fraser, came from Puellaro, at an altitude of 6500 feet. The rufous and black markings on the wings are also more conspicuous in the birds from the higher altitude.

Nestling with the feathers on the wings, upper back, and sides of the breast black, fringed laterally with white, and barred and tipped with ochreous brown on the back, scapulars, tail, and innermost secondaries; upper wing-coverts edged with rufous; flight-quills brown barred, or mottled with rufous, or buffy-white; sides of the breast black with whitish margins to the feathers and slightly tinged with rufous; the feathers on the sides of the body are pale rufous marked with dark brown near the tips; head and underparts covered with down which is for the most part drab-white tinged with rufous and, on the head and hind-neck, profusely marked with black or dark brown; the down on the hind-neck has long black hair-like tips. Iris brown; feet flesh-colour; bill, upper mandible brown, lower mandible pale yellow at the base. This specimen, with two others, was collected at Pichincha, western Ecuador, at an altitude of 1300 feet, in February 1915 by W. Goodfellow, and presented to the British Museum by Mr. E. J. Brook.

***Nothoprocta ornata*.**

Rhynchotus ornatus Gray, List of the Birds in the British Museum, Gallinæ, 1867, p. 102: Bolivia.

Nothoprocta ornata Salvadori, Cat. B. Brit. Mus. xxvii. 1895, p. 557, pl. xvii.

No. 3175. ♂. Lake Pampa Aullagas, Bolivia, 3900 metres, 17 Oct. 1901.

Simons states that he found this bird "in sandy bushy places."

This specimen is very similar to Gray's type which is in the British Museum. The following measurements refer to the bird collected by Simons:—Total length 350 mm., exposed portion of culmen 28, wing 194, tail 58, tarsus 43. I may remark that plate xvii. in the Catalogue of the Birds in the British Museum is not a correct representation of the type of this species.

Nothura maculosa.

Tinamus maculosa Temm. Fig. et Gall. iii. 1815, pp. 557, 748: Paraguay.

Nothura maculosa Sclater & Hudson, Argent. Orn. ii. 1889, p. 211.

Seven males and eleven females of this species were collected by Mr. Robin Kemp at Papin, Bonifacio, western Argentina, during the months of April, May, June, July, August, and September, 1916.

In addition to the eighteen specimens that Mr. Kemp collected, there are twenty-two dated individuals in the National Museum, which together represent a series of forty specimens, collected during the months of December, January, February, March, April, May, June, July, August, and September, and which include all the plumages from the nestling to that of the adult. On viewing this series I was at first inclined to think that there was more than one form as there are two distinct phases, one rufous and the other grey. On closer observation, however, I find the birds of the rufous or ochreous-buff phase to be immature, and those of the darker and more grey phase to be the fully adult. I have measured the wings of seven adult males and seven adult females, and find the average to be—males 131 mm. and females 138.

Nothura darwini salvadorii.

Nothura salvadorii Hartert, Nov. Zool. xvi. 1909, p. 266: Arenal, Prov. de Salta; Brabourne & Chubb, B. S. Amer. i. 1912, p. 7, no. 64.

Nos. 4863 ♂, 4894 ♀. El Carrizal, Sierra de Cordoba, Argentina, 1000 metres, December 1915.

These two birds, which were collected by Mr. Robin Kemp, differ from the type of *N. darwini* in being rather darker on the upper parts, the submarginal longitudinal white lines more pronounced, the under wing-coverts deeper fawn-colour, and the somewhat larger wing-measurements—male 132 mm., female 143.

There is a specimen from Cosquin, Cordoba, in the British Museum which also belongs to this subspecies, collected by E. W. White on 28 June, 1882.

Calopezus elegans formosus.

Calopezus formosus Lillo, Revista da letras y ciencias sociales, No. 13, 1905, p. 72: Santiago; Brabourne & Chubb, B. S. Amer. i. 1912, p. 7, no. 71.

No. 5003. ♀. Laguna Alsina, Bonifacio de Cordoba, 10 June, 1916.

“Cæca—100 mm. and 140 mm. Large, conical, and sacculated” (*R. Kemp*).

Text-fig. 1.



The cæca of *Calopezus elegans formosus* from a sketch on Mr. Kemp's label.

The specimen sent by Mr. Kemp was collected in the neighbourhood whence Lillo described *C. formosus*, and agrees fairly well with the description and the figures given by Dabbene & Lillo in the An. Mus. Nac. Hist. Nat. Buenos Aires, xxiv. Lam. xi. fig. 1 ♂.

There is an adult female in the Rothschild Museum at Tring which was collected at Rioja in western Argentina (*cf.* Hartert & Venturi, Nov. Zool. xvi. 1916, p. 267), and which answers very well to the description of *C. intermedius* Dabbene & Lillo in the An. Mus. Nac. Hist. Nat. Buenos Aires, xxiv. 1913, p. 194, Lam. xii.

Tinamotis pentlandi.

Tinamotis pentlandi Vigors, P. Z. S. 1836, p. 79: Andes; Tacz. Orn. Pér. iii. 1886, p. 310: Junin.

No. 1851. ♀. Galera, Junin, Peru, 4800 metres, 26 Feb. 1900.

No. 2095. Sumbay, Peru, 4000 metres, 7 June, 1900.

Native name "Francolin." Simon states that this bird was found on the ground in open rocky places.

I have compared these two specimens with the series in the British Museum, and find them to be similar both in colour of plumage and wing-measurements.

Family CRACIDÆ.

Mitu mitu.

Crax mitu Linn. Syst. Nat. 12th ed. i. 1766, p. 270: Brazil.

Mitu mitu Brabourne & Chubb, B. S. Amer. i. 1912, p. 9, no. 84.

No. 2342. ♂. San Ernesto, Bolivia, 1000 metres, 2 September, 1900. Native name "Buiche." "Iris brown; bill and feet red" (*P. O. Simons*). "Found in woods."

I have compared this specimen with others in the British Museum, and find it to be very similar both in colour of plumage and in measurements. Wing 405 mm., tail 320.

Penelope brooki.

Penelope brooki Chubb, Bull. Brit. Orn. Club, xxxviii. 30 Oct. 1917, p. 5.

Penelope montagnii Ogilvie-Grant, Cat. B. Brit. Mus. xxii. 1893, p. 492 (part, specimens *f, g, h, i*).

Adult male. Allied to *P. montagnii* Bonap. which was described from Colombia, but differing from that species in having the upper surface for the most part dark oil-green instead of bronze-brown, the lower back, rump, and upper tail-coverts brown, with dark rufous edgings to the feathers instead of uniform rufous-chestnut, chin and throat black instead of grey, the breast darker and the pale margins to the feathers more contrasting, and the abdomen dusky brown with dark rufous mottlings, instead of rufous brown with dark mottlings.

"Bill deep yellow-chrome; feet red; iris brown; face and throat red" (*W. Goodfellow*).

Total length 512 mm., exposed culmen 33, wing 234, tail 192, tarsus 61.

The type was collected at Baeza, eastern Ecuador, 6000 feet, by W. Goodfellow in April 1914, and presented to the British Museum by Mr. E. J. Brook, in whose honour the species is named.

There are four other specimens from Ecuador in the National Collection which support the characters given in the above description.

Penelope æquatorialis.

Penelope æquatorialis Salvad. & Festa, Boll. Mus. Torino, xv. No. 368, 1900, p. 38: Foreste del Rio Peripa, W. Ecuador; Brabourne & Chubb, B. S. Amer. i. 1912, p. 10, no. 97.

Penelope cristata (nec Linn) Berl. & Tacz. P. Z. S. 1883, p. 736: Chimbo; Ogilvie-Grant, Cat. B. Brit. Mus. xxii. 1892, p. 498 (part) (spec. n, Balzar Mts.); Hartert, Nov. Zool. v. 1898, p. 504: Paramba.

The bird collected by Simons belongs to the form which occurs in western Ecuador, Colombia, and Central America, and for a long time has been known as *P. cristata* Linn. This name, however, cannot stand as it was founded by Linné on Marcgrave's Jacupema (Hist. Nat. Bras. p. 198, cum fig. 1648: District of Pernambuco). It must therefore

have been a Brazilian bird. Edwards, in his 'Natural History of Birds,' i. 1743, p. 13, refers to it as the "Quan or Guan, so called in the West Indies." He gives a description and a coloured plate, but neither is applicable to any species known in Brazil at the present time. On the plate is inscribed "the Brassilian Jacupema of Marggrave." He also states—"I saw one of these birds at Captain Chandler's at Stepney, who brought it with him from some one of the Sugar Islands in the West Indies, I have forgot which; but I suppose it may be found in most of them. The Brasilian Jacupema of Marcgrave, I believe, is the same with this bird, though his description differs something from mine." It may be mentioned, however, that none of this family is known to occur in any of the West India Islands.

Ray refers to the species as "*Phasianus Brasiliensis Jacupema dictus Marcgr.*" (*cf.* Synopsis Methodica Avium & Piscium, 1713, p. 56). A description is also given by Ray which is similar to that of Marcgrave's.

The bird is also referred to by Brisson under the title of "*Le Dindon du Bresil*" (*cf.* Orn. i. 1760, p. 162), which is also based on Marcgrave's figure. He appears to have seen a specimen, as he gives a description.

It was on the works of these four authors that Linné founded the title *Meleagris cristata*, but while it is uncertain as to which of the Brazilian species it was intended to apply, it is perfectly certain that it could not have been the Colombian or Ecuadorean bird.

The synonym quoted by Mr. Ogilvie-Grant, Cat. B. Brit. Mus. xxii. p. 498—" *Penelope purpurascens* Lawr. Aun. Lyc. N.Y. viii. p. 12 (U.S. Colombia)" was intended to have read Lawr. (nec Wagler)—*P. purpurascens* Wagl. being the Mexican form.

The only available name, therefore, for this species is *P. æquatorialis* Salvadori & Festa. I cannot, however, accept the species as those authors separated it, for after a comparison of specimens from Central America with others from Colombia and Ecuador, I have failed to observe any

differences, and the characters given for its distinction are certainly not borne out by birds from the localities cited.

The habitat of the species therefore, as at present known, is Ecuador, Colombia, and Central America, from Panama to southern Nicaragua.

I notice that Dr. Hartert (Nov. Zool. v. p. 504) mentions that the wings of the two birds obtained at Paramba, Ecuador, measured 340–355 mm., and that the bird from Central America is larger, the head paler, and the pale margins to the feathers broader. I have measured the wings of four individuals from Central America and find the average to be 361 mm., and two from Colombia, one from Merida, Venezuela, and one from Ecuador, which average 355 mm., so that the difference is but slight. As regards the colour of the head, I should say that the southern bird is the darker of the two, but the difference is not great, and I fail to see that the pale margins to the feathers of the northern bird are any broader than in the southern species. I do not altogether disparage the suggestion that these may be subspecific forms, but the small amount of material to hand is not sufficient to prove it.

Penelope jacquacu jacquacu

Penelope jacquacu Spix, Av. Bras. ii. 1825, p. 52, pl. lxxviii.: "in sylvis fluminis Solimoens"; Brabourne & Chubb, B. S. Amer. i. 1912, p. 10, no. 98 (part).

Penelope boliviана (nec Reichenb.) Tacz. Orn. Pér. iii. 1886, p. 268; Ogilvie-Grant, Cat. B. Brit. Mus. xxii. 1893, p. 499 (part): Sarayacu, Ecuador, Yquitos, Yurimaguas, and Rio Solimoens, East Peru.

No. 1966. Rio Perene, Junin, Peru, 800 metres, 24 March, 1900. Native name "Pavo." "Iris coffee-brown; skin round the eye blue-black; throat-patch red and bill red: feet black" (*P. O. Simons*).

The bird collected by Simons is very similar to others in the British Museum from Ecuador and Peru, among which there is an example from the Rio Solimoens, whence the original type of this species was obtained by Spix.

Penelope jacquacu boliviana.

Penelope boliviana Reichenb. Syn. Av., Novit. xlv. 1851, pl. 271, figs. 2493-94: Bolivia; Ogilvie-Grant, Cat. B. Brit. Mus. xxii. p. 499 (specimen *g*); Allen, Bull. Amer. Mus. ii. 1890, p. 106: Lower Beni.

Penelope jacquacu Brabourne & Chubb, B. S. Amer. i. 1912, p. 10, no. 98 (part).

When comparing the Simons bird, No. 1966 from Perene, with others from Bolivia, Peru, and Ecuador in the British Museum, I noticed that the Bolivian bird was darker in colour both on the upper and under surface as well as larger in wing and tail measurements, particularly the latter. I found, too, that the darker coloration was depicted by Reichenbach in his original figures. Wing 322 mm., tail 340.

I propose, therefore, that this form be recognized as a subspecies under the name *Penelope jacquacu boliviana*.

Habitat. Bolivia.

Ortalis guttata.

Penelope guttata Spix, Av. Bras. ii. 1825, p. 55, tab. lxiii.: "ad flumen Solimoens."

Ortalida guttata Tacz. Orn. Pér. iii. 1886, p. 278.

Ortalis guttata Brabourne & Chubb, B. S. Amer. i. 1912, p. 12, no. 112.

No. 1874. Adult. San Ramon, Junin, Peru, 1000 metres, 6 March, 1900. Native name "Gallina del monte." "Found in brush."

No. 1932. Adult. Rio Perene, Junin, Peru, 800 metres, 17 March, 1900. "Found in thick wood."

With a series of fourteen specimens, including the two in the Simons collection, from localities in the following states—Colombia, Ecuador, Peru, and Bolivia, I notice a considerable amount of variation, particularly in regard to the colour on the rump. In several, the feathers are short and fluffy and of a deep rust-brown or chestnut in colour, while there are others which do not show either of these characters but have normal feathers and are olive-brown like the back.

The colour of the back varies, too, from oil-green to rich brown. On the under surface, the abdomen varies from grey to pale brown and the under tail-coverts from ferruginous to deep chestnut.

I may mention, however, that the differences cited above do not show any partiality for locality or sex; it may be age of course, but I am unable to distinguish any signs by which to judge on this suggestion.

There are only six individuals sexed—three males and three females. The average wing-measurement of the males is 198 mm. and the females 194; while the average tail-measurement in the male is 215 mm. and the female 207. The average measurement of the wing in the whole series is 197 mm. and the tail 213.

Pipile cumanensis.

Crax cumanensis Jacquin, Beytr. 1784, p. 25, tab. 10 : Orinoco.

Pipile cumanensis Tacz. Orn. Pér. iii. 1886, p. 276; Allen, Bull. Amer. Mus. ii. 1890, p. 107: Falls of the Madeira.

No. 1906. Adult. Rio Perene, Junin, Peru, 800 metres, 12 March, 1900. Native name "Pavo." "Found in woods."

No. 2921. Adult. Charuplaya, Bolivia, 1350 metres, 5 June, 1901. Native name "Chui Pavo." "Iris red; feet red; bill black; facial skin blue-white" (*P. O. Simons*).

With a series of thirteen specimens from the following localities—British Guiana, Colombia, Ecuador, Peru, Bolivia, and Paraguay, it would appear by the different phases of plumage that there were more than one species. On close observation, however, aided by the few specimens that were sexed, it was noticed that the phases represented male and female—the steel-blue phase being the male, and the oil-green phase the female.

The white fringes to the feathers on the upper and under surface appear to be a sign of immaturity.

The female in the Simons collection, No. 2921, is almost

uniform oil-green above and below, while the male is steel-blue with a large amount of white edgings to the feathers on the breast, upper wing-coverts, and scapulars.

The black shaft-lines to the feathers of the otherwise white crest are very conspicuous in the Bolivian bird 2921, an adult from Peru (Gray's type of *P. jacquinii*), and the bird from Paraguay. The remainder of the series have an almost uniform cream-white crest.

I have measured the wings and tails of the entire series, and find that the southern birds have a slightly larger average measurement in both male and female.

***Aburria aburri*.**

Penelope aburri Less. Dict. Sci. Nat. lix. 1829, p. 191 : Bogota.

Aburria carunculata Reichenb.; Salvad. & Festa, Boll. Mus. Torino, xv. 1899, p. 39: Bassa Valle del Rio Zamora.

Aburria aburri Ogilvie-Grant, Cat. B. Brit. Mus. xxii. 1893, p. 520: Chiguinda.

No. 506. Mirador, Bañas, Ecuador, 1500 metres. Native name "Pavo." "Found in woods."

a. ♂. Baeza, Eastern Ecuador, 6000 feet, April 1914. "Bill brownish black, extreme tip yellowish, nostrils grey; feet yellow; iris blood-red, eyelids dull yellow; wattle clear yellow" (*W. Goodfellow*).

I have compared these examples with a series of nine other specimens in the National Collection from Colombia, Merida in western Venezuela, Ecuador, and Peru. In this series I notice that Colombian and Venezuelan birds show a good deal of oil-green colour in the plumage, while those from Ecuador and Peru have an inclination to steel-blue. This character may denote sexual difference however, as in the case of *Pipile cumanensis*, but the number of sexed specimens in this series are not sufficient to prove it. The measurements of the wings and tails of this series do not show any great variation.

Chamæpetes goudotii and allies.

With a series of sixteen specimens at my disposal it is quite obvious that there are at least three, if not four, subspecies; these divide into geographical races by difference of colour-plumage, and this is further supported in the series by the measurements. Thus in the neighbourhood of Bogota, which is the type-locality, the wing-measurement ranges from 236–250 mm., the tail 215–238, and the tarsus 57–61: in Antioquia, which is much farther north in Colombia, the measurements are—wing 254–273 mm., tail 237–247, and tarsus 64–71; while in eastern Ecuador they are—wing 245–262 mm., tail 237–254, and tarsus 65–84; and two individuals from Peru have the wing 242–243 mm., tail 234–244, tarsus 79–80. The last two are sexed females, so that the males would probably be even larger. These forms may therefore be classed as follows:—

Chamæpetes goudotii goudotii. Hab. District of Bogota, Colombia.

Chamæpetes goudotii antioquiana. Hab. Antioquia, N. Colombia.

Chamæpetes goudotii tschudii. Hab. Central northern Peru and eastern Ecuador.

Chamæpetes goudotii goudotii.

Ortalia goudotii Less. Man. d'Orn. ii. 1828, p. 217: Santa Fé de Bogota.

Chamæpetes goudoti Ogilvie-Grant, Cat. B. Brit. Mus. xxii. 1893, p. 521 (part).

Chamæpetes goudotii Brabourac & Chubb, B. S. Amer. i. 1912, p. 13, no. 122 (part).

There are four specimens in the British Museum from the type-locality, Bogota, which measure—wing 236–250 mm. and tail 215–238. It would appear therefore that this is the smallest form of the group.

Chamæpetes goudotii antioquiana, subsp. n.

Chamæpetes goudoti Ogilvie-Grant, Cat. B. Brit. Mus. xxii. 1893, p. 521 (part, specimens *f*, *g*, *h*).

Chamæpetes goudotii Brabourne & Chubb, B. S. Amer. i. 1912, p. 13, no. 122 (part).

This form differs from the Bogota bird in being rather darker in colour and larger in size. The average measurements of the four specimens from the Province of Antioquia are as follows: wing 254–273 mm. and tail 237–247.

Habitat. Antioquia Province, Colombia.

The type, which is in the British Museum, was collected by A. E. Pratt at Valdivia, Antioquia.

Chamæpetes goudotii tschudii.

Chamæpetes tschudii Taczanowski, Orn. Pérou, iii. 1886, p. 275: Moyobamba.

Chamæpetes rufiventris (nec Tschudi) Tacz. tom. cit. p. 273.

Chamæpetes goudoti Ogilvie-Grant, Cat. B. Brit. Mus. xxii. 1893, p. 521 (part, specimens *m* & *n*).

Chamæpetes goudotii Brabourne & Chubb, B. S. Amer. i. 1912, p. 13, no. 122 (part).

a, b. ♂ ♂; *c.* ♀. Baeza, eastern Ecuador, 6000 ft., March and April, 1914. "Iris brown; face bright cobalt-blue; bill brown; feet red" (*W. Goodfellow*).

These three individuals, which are in very good condition, have the throat slightly tinged with brown. This may be, however, the last remains of immaturity.

The birds from Ecuador and northern Peru are rather paler on the under surface, and larger in wing- and tail-measurements than typical specimens of *C. g. goudotii* from Bogota. Wing 245–260 mm. and tail 234–251.

Penelope rufiventris described and figured by Tschudi is a big bird, as is shown by the measurements given by him. In his description he states that the face is red, and he further emphasized that character by illustrating it in his *Fauna Peruana*, pl. xxxi.

Taczanowski in his Orn. Pérou, iii. p. 273, described a blue-faced bird under the title of *Chamæpetes rufiventris*, remarking that the red-faced bird described and figured by Tschudi was erroneous. Taczanowski, *l. c.* p. 275, described as a new species *C. tschudii*, also a blue-faced bird, and

observed that Tschudi had mixed these two forms up in addition to the wrong coloration of the face.

Mr. Ogilvie-Grant, in the Catalogue of the Birds in the British Museum, xxii. p. 521, made all three synonymous with *C. goudotii*, describing them as variations due to age.

After reading Taczanowski's statements in reference to *C. rufiventris* (Tschudi), it appears doubtful as to whether it is a valid species or not, and must remain as such until there is sufficient material to reveal the facts. In the meantime Taczanowski's name, *C. tschudii*, must be used.

There is a specimen in the National Collection that Taczanowski examined when making the observations referred to above, which is almost identical with Tschudi's description and figure, save that it is said to have had a blue face, not red.

There is, however, a red-faced bird which was collected by Mr. W. Goodfellow at Mindo, western Ecuador, and which I have described as a new species by reason of its much smaller size and deeper coloration.

***Chamæpetes fagani.* (Plate I.)**

Chamæpetes fagani Chubb, Bull. Brit. Orn. Club, xxxviii. 30 Oct. 1917, p. 4.

Adult female. General colour above, including the head, back, wings, and tail, dark bottle-green with bronzy reflections; the lesser upper wing-coverts have the margins slightly paler, the inner webs of the flight-quills darker and inclining to blackish, some of the long upper tail-coverts inclining to brown, as are also the tips of some of the tail-feathers; the sides of the hinder face dusky brown; the throat which is sparsely feathered is also dusky brown, the feathers have black shafts which terminate in hair-like tips; the fore-neck dark bottle-green with slightly paler margins to the feathers; the breast and abdomen chestnut, darker on the flanks and thighs and inclining to chocolate-brown on the under tail-coverts; the under wing-coverts bronze-green; under surface of flight-quills dusky brown with glossy reflections; the lower



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CHAMÆPETES FAGANI.

aspect of the tail bluish black tinged with rufous-brown on the apical portion where the shafts are dull coral-red.

"Bill dark brown; iris brown; skin of face and throat shrimp-red; feet red" (*W. Goodfellow*).

Total length 467 mm., exposed culmen 35, wing 220, tail 184, tarsus 61.

The type, which is in the British Museum, was collected by *W. Goodfellow* at Mindo, western Ecuador, at an altitude of 6000 ft., in January 1914, and presented to the National Collection by *Mr. E. J. Brook*.

This species is allied to *C. goudotii*, but is easily distinguished by its darker coloration and much smaller size.

An immature male of this species, that was collected at the same time as the type, is darker in the general coloration both above and below, as is usual with the male in this group. "Bill brown; face red; iris brown; feet red" (*W. Goodfellow*).

This bird is named in honour of *Mr. C. E. Fagan*, of the British Museum (Natural History).

Family ODONTOPHORIDÆ.

Odontophorus guianensis rufinus.

Perdix rufina Spix, Av. Bras. ii. 1825, p. 60, tab. lxxvi. *b*: "in sylvis fl. Amazonum."

Odontophorus guianensis Ogilvie-Grant, Cat. B. Brit. Mus. xxii. 1893, p. 432 (part, specimens *a, b, g, h*); Brabourne & Chubb, B. S. Amer. i. 1912, p. 13, no. 130 (part).

Although *Hellmayr*, in his revision of *Spix's* types (*Abh. math.-phys. Ak. Wiss. München*, xxii. 1906, p. 698), states that *Perdix rufina* *Spix* is *Tetrao guianensis* *Gmelin*, I am of opinion that it is a good subspecific form. There are four individuals in the British Museum which are almost identical with *Spix's* figure. Of the specimens referred to, one, a male, was collected on the Capim River by *A. R. Wallace*; another, which is a female, was obtained by *Natterer* at Barra do Rio Negro; and the other two have no exact locality stated, but I have no doubt that they came

from the same neighbourhood as the four birds are so much alike and contrast so vividly with *O. g. guianensis*. I propose, therefore, that Spix's name be resuscitated as a subspecies under the following title, *Odontophorus guianensis rufinus*, as mentioned above.

Habitat. Lower Amazons.

Odontophorus guianensis simonsi, subsp. n.

Odontophorus guianensis Ogilvie-Grant, Cat. B. Brit. Mus. xxii. 1893, p. 433 (part, specimen *s*) ; Brabourne & Chubb, B. S. Amer. i. 1912, p. 13, no. 130 (part).

Adult male. Differs from *O. g. guianensis* in having the lower back and rump isabelline with scarcely any dark spots, instead of tawny brown profusely spotted with black, the fore-neck rufous instead of grey, and the abdomen and thighs darker.

Habitat. Bolivia.

The type, which is in the British Museum, was collected at San Ernesto, Mapiiri, Bolivia, at an altitude of 1000 metres on 6 October, 1900, by the late P. O. Simons, in whose memory this subspecies is named.

The native name according to Simons is "Guaylgkopo."

There is a specimen in the British Museum from Guyo, Bolivia, collected by the late Clarence Buckley ; though slightly immature it bears out the characters described above.

Odontophorus guianensis marmoratus.

Ortyx (Odontophorus) marmoratus Gould, P. Z. S. 1843, p. 107 : Santa Fé de Bogota.

Odontophorus marmoratus Ogilvie-Grant, Cat. B. Brit. Mus. xxii. 1893, p. 433 (part, specimens *h-q*).

This species is known chiefly by its darker under surface, its brown or whitish throat, and in having the sides of the face dull chestnut. Wing 158 mm., depth of bill 11.

Odontophorus guianensis panamensis, subsp. n.

Odontophorus marmoratus Ogilvie-Grant, Cat. B. Brit. Mus. xxii. 1893, p. 433 (part, specimens *a-g*).

Adult male. Distinguished from *O. g. marmoratus* in being

smaller and in having the sides of the face bright rufous, instead of dull chestnut.

Total length 230 mm., exposed culmen 22, wing 149, tail 60, tarsus 44.

Adult female. Similar to the adult male. Wing 147 mm.

Habitat. Panama.

The male and female described were collected at Lion Hill, Panama, by J. McLeannan and are now in the British Museum, Salvin-Godman collection.

Odontophorus guianensis pachyrhynchus.

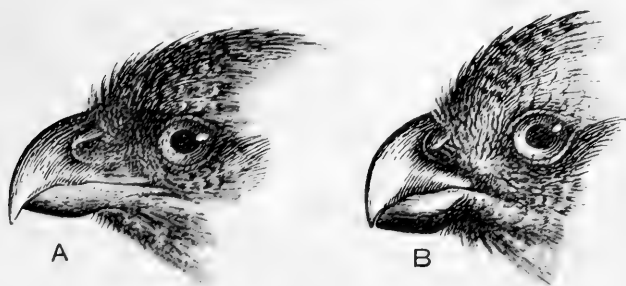
Odontophorus pachyrhynchus Tschudi, Fauna Peruana, 1846, p. 282: East side of the Andes in Peru; Tacx. Orn. Pér. iii. 1886, p. 287: Monterico.

Odontophorus marmoratus Ogilvie-Grant, Cat. B. Brit. Mus. xxii. 1893, p. 433 (part, specimen *r*).

This bird, which I propose to resuscitate as a subspecific form, is allied to *O. g. marmoratus* in the general colour of its plumage, but is easily recognized by the increased depth of its bill, which is 14 mm.

Habitat. Peru.

Text-figure 2.



Heads of:—

A. *Odontophorus guianensis guianensis.* B. *O. g. pachyrhynchus.*

Odontophorus guianensis buckleyi, subsp. n.

Odontophorus marmoratus Ogilvie-Grant, Cat. B. Brit. Mus. xxii. 1893, p. 433 (part, specimens *p, q*); Brabourne & Chubb, B. S. Amer. i. 1912, p. 13, no. 131 (part).

Adult presumed male. Allied to *O. g. pachyrhynchus*, but differing in having the rufous at the base of the bill, lores, cheeks, and chin much paler in colour, the lower back, rump, and upper tail-coverts darker, the under surface also darker ochreous brown, more narrowly barred and tinged with pale slate-grey, and rather smaller in size.

Total length 210 mm., exposed culmen 21, depth of bill 14, wing 143, tail (imperfect) 53, tarsus 45.

Adult presumed female. Similar to the presumed adult male, differing only in the almost entire absence of the rufous at the base of the bill, lores, cheeks, and chin. Wing 144 mm.

Habitat. Eastern Ecuador.

The male and female described were collected at Sarayacu in eastern Ecuador by the late Clarence Buckley, in whose memory this subspecies is named, and are now in the British Museum, Salvin-Godman collection.

Key to the Subspecies.

- A. Under surface for the greater part rufous or ochreous, not dusky brown profusely barred; chin and throat usually chestnut.
 - a. Lower back and rump dark rufous-brown spotted with black *O. guianensis guianensis*.
 - b. Lower back and rump paler and inclining to grey, also spotted with black *O. guianensis rufinus*, p. 25.
 - c. Lower back and rump almost uniform isabelline, the black spots small and very few in number *O. guianensis simonsi*, p. 26.
- B. Under surface for the most part dusky brown profusely barred throughout; chin and throat usually brown or whitish.
 - d. Depth of bill less than 13 mm.
 - d'. Larger: wing more than 155 mm.; sides of face dull chestnut [p. 26. *O. guianensis marmoratus*,
 - e'. Smaller: wing less than 155 mm.; sides of face bright rufous-chestnut [p. 26 *O. guianensis panamensis*,

e. Depth of bill more than 13 mm.

f'. Under surface paler and more broadly barred; rump and upper tail-coverts also paler; wing more than 145 mm.; tail more than 65 mm. *O. guianensis pachyrhynchus*, [p. 27.

g'. Under surface darker and more narrowly barred; rump and upper tail-coverts darker; smaller, wing less than 145 mm., tail less than 65 mm. *O. guianensis buckleyi*, p. 27.

Odontophorus parambæ.

Odontophorus parambæ Rothschild, Bull. Brit. Orn. Club, vii. 1897, p. 6: Paramba, N. Ecuador; Hartert, Nov. Zool. v. 1898, p. 505, pl. iii. fig. 1.

Guelea, W. Ecuador, July 1914. "Iris chocolate, eyelids dull red; bill black; feet slate-grey" (*W. Goodfellow*). Total length 224 mm., exposed culmen 17, wing 130, tail 47, tarsus 41.

The bird collected by W. Goodfellow is smaller in measurement and paler in coloration, both above and below, than the specimen in the British Museum; there is also a slight suffusion of grey on the upper back and scapulars, and the specklings on the feathers are more minute and not so coarse as in the one in the British Museum, which was collected by Miketta at Paramba on the 12th of April, 1898. It may be observed, too, that Goodfellow gives the eyelids as dull red, whereas Dr. Hartert states that the skin round the eye is greenish grey in the type.

Family COLUMBIDÆ.

Columba albipennis.

Columba albipennis Selater, P. Z. S. 1876, p. 18: Pitumarca, Peru; Tacz. Orn. Pér. iii. 1886, p. 232; Salvad. Cat. B. Brit. Mus. xxi. 1893, p. 272, pl. viii.: Bolivia.

Nos. 2803, ♀; 2804, 2822, ♂. Paratani, Bolivia, 2800 metres, April 1901. Native name "Torcas." "Iris grey; bill black; feet purple" (*P. O. Simons*).

Simons states that he found this bird nesting in trees and that the stomach contained berries.

No. 3102 ♀. El Cabrada, Bolivia, 3600 metres, 19 Sept. 1901. "Iris cream-colour; feet purple; bill bluish black" (*P. O. Simons*).

I have compared these four examples with the type of the species, which is in the National Collection, and find them to be almost identical. No. 2804 is slightly darker on the under tail-coverts and not so vinous on the neck.

***Columba speciosa*.**

Columba speciosa Gmel. Syst. Nat. i. 1789, p. 783: Cayenne; Tacz. Orn. Pér. iii. 1886, p. 231.

No. 1993. ♀ imm. Metrara, La Merced, Peru, 700 metres, 6 April, 1900. "Found in woods and feeds on palm-fruit" (*P. O. Simons*).

Although this species is fairly common over the greater part of South America, the National Collection did not, previously, possess a specimen from Peru. I notice that it is recorded from two localities, viz. Chayavetas, Chamicuros (*Bartlett*) and Amable Maria (*Jelski*) by Taczanowski.

The present example, which is an immature female, is similar to others in the British Museum from various localities.

***Columba albilinea*.**

Columba albilinea Bonap. Consp. Av. ii. 1855, p. 51: New Grenada; Scl. P. Z. S. 1860, p. 72: Chillanes, Rio Chimbo Valley; Scl. & Salv. P. Z. S. 1879, p. 639: Ramosani, Bolivia; Berl. & Tacz. P. Z. S. 1884, p. 311: Bugnac; Salvad. Cat. B. Brit. Mus. xxi. 1893, p. 294: Sical, Ecuador; Salvad. & Festa, Boll. Mus. Tor. xv. No. 357, 1899, p. 34: Pun, La Concepcion, Nanegal, Ecuador.

Chlorænas albilinea Scl. P. Z. S. 1858, p. 556: Matos, Ecuador.

Nos. 415, 427. ♂ adult. Guallabamba, Riobamba, Ecuador, 3500 metres, 17, 18 Jan. 1899. Native name "Torcasa."

Nos. 2602, 2674. ♂ adult. Chulumani, Bolivia, 2200 metres, 5, 21 Jan. 1901. Native name "Palamo Senisa." "Iris pink; bill and feet yellow" (*P. O. Simons*).

No. 2857. ♂ adult. Choro, Cocapata, Bolivia, 3500 metres, 6 May, 1901. Native name "Torcas."

I have compared these five specimens with a series of eighteen other individuals, including the type, in the British Museum from British Guiana, Venezuela, Colombia, Ecuador, Peru, and Bolivia, and find the colour and the wing-measurements very similar throughout.

Columba plumbea plumbea.

Columba plumbea Vieill. N. Dict. d'Hist. Nat. xxvi. 1818, p. 358: Brazil (Delalande) = Rio Janeiro; Salvad. Cat. B. Brit. Mus. xxi. 1893, p. 323 (part, specimens *a-e*).

Columba infuscata Licht. Verz. Doubl. 1823, p. 66: Bahia.

Columba locutrix Wied, Reise nach Bras. ii. 1821, pp. 118, 213: Bahia.

The typical form is distinguished by having the head, hind-neck, and mantle dark purple tinged with hoary-grey; rump, upper tail-coverts, and tail purplish brown; chin and throat fawn-colour, with the remainder of the under surface plumbeous.

Total length 340 mm., exposed culmen 18, wing 185, tail 143, tarsus 22, middle toe and claw 39.

Columba plumbea baeri.

Columba plumbea baeri Hellmayr, Nov. Zool. xv. 1909, p. 91: Goyaz.

According to Hellmayr this form is allied to *C. plumbea*, but differs in being smaller in size, paler brown on the upper parts, and pale grey on the underparts, with scarcely any perceptible rosy tinge.

Wing 181-183 mm., tail 145-143, culmen 15.

Columba plumbea wallacei.

Columba plumbea wallacei Chubb, Bull. Brit. Orn. Club, xxxviii. 29 Dec. 1917, p. 32.

Columba plumbea Salvad. Cat. B. Brit. Mus. xxi. 1893, p. 323 (part, specimens *v, w*); Goeldi, Ibis, 1903, p. 499: Rio Capim.

Columba plumbea bogotensis Hellmayr, Nov. Zool. xiii. 1906, p. 383: Prata, Para.

There are two specimens in the British Museum from the Rio Capim in Para, collected by the late A. R. Wallace in June 1849. These differ from *C. p. plumbea* in being much smaller and in having the lower back, upper tail-coverts, and tail more bronze and less purple than in the Rio Janeiro bird. The purple on the head and hind-neck is brighter, and the under surface dull vinaceous instead of plumbeous.

Total length 300 mm., exposed culmen 15, wing 175, tail 120, tarsus 19, middle toe and claw 32.

This form differs from *C. p. bogotensis* from Bogota in having the back, wings, and tail less green, the head and hind-neck darker vinous, and in its smaller wing and tail measurements.

Columba plumbea purpureotincta.

Columba purpureotincta Ridgway, Proc. U.S. Nat. Mus. x. 1887, p. 594, note: Demerara; Chubb, B. British Guiana, i. 1916, p. 40.

Columba plumbea Salvad. Cat. B. Brit. Mus. xxi. 1893, p. 323 (part, specimens *x-l'*).

This form is of smaller size and rather more vinous in coloration than the previous forms. Of four males and four females I find that the wing varies in measurement from 156-171 and tail 103-122 mm.

Columba plumbea bogotensis.

Columba plumbea bogotensis Berlepsch & Leverkühn, Ornith. vi. 1890, p. 32: Santa Fé de Bogota.

Columba plumbea Tacz. Orn. Pér. iii. 1886, p. 234; Salvad. Cat. B. Brit. Mus. xxi. 1893, p. 323 (part, specimens *n-u*).

a. ♂. Baeza, eastern Ecuador, 6000 ft., March 1914. "Iris dark madder-red, eyelids dark claret-red; bill black, nostrils dull red; feet red" (*W. Goodfellow*).

b. ♀. Mindo, western Ecuador, 6000 ft., January 1914. "Iris dark dull red; bill black, nostrils red; feet red" (*W. Goodfellow*).

No. 2185. ♂. Oroya, Puno, Peru, 1000 metres, 15 July, 1900. Native name "Torcasa" (*P. O. Simons*).

The bird from western Venezuela and Colombia is again a rather larger form, and in a general sense darker and inclining to bronze-green on the back. This form, which is known under the name of *C. p. bogotensis*, is distributed in western Venezuela, Colombia, Ecuador, and Peru. The measurements are:—Culmen 15–16 mm., wing 167–200, tail 114–149.

***Columba plumbea andicola*.**

Columba plumbea andicola Chubb, Bull. Brit. Orn. Club, xxxviii. 29 Dec. 1917, p. 32.

Columba plumbea Selater & Salvin, P. Z. S. 1879, p. 639: Mapiro, Bolivia; Salvad. Cat. B. Brit. Mus. xxi. 1893, p. 323 (part, specimens *f, g*).

I find that the three examples in the British Museum (one from Chanchamayo, central Peru, and two from Bolivia) differ from *C. p. bogotensis* in being rather paler on the back, wings, and tail; the head, hind-neck, and entire under surface lilac instead of vinous, and the chin and throat uniform with the breast and abdomen, instead of isabelline; the wings and tail are shorter.

Total length 295 mm., exposed culmen 17, wing 181, tail 134, middle toe and claw 36.

Habitat. Central Peru to Bolivia.

The type, which is in the British Museum, was collected by the late Clarence Buckley at Mapiro in Bolivia.

The specimen from Chanchamayo was presented to the British Museum by Count Branicki in 1892 with the name "*C. andicola* Berl. & Stolzmann" written on the label. I have searched for the description in Berlepsch and Stolzmann's papers on Kalinowski's collection, but failed to find it. I am using the name, however, with the hope that the description will come to light.

***Columba ogilvie-granti*.**

Columba vinacea (nec Temm.) Sclater & Salvin, P. Z. S. 1869, p. 598 : Cosnipata ; iid. op. cit. 1873, p. 306 : Santa Cruz, Rio Huallaga.

Columba subvinacea (nec Lawrence) Tacz. Orn. Pér. iii. 1886, p. 236.

Columba plumbea Salvad. Cat. B. Brit. Mus. xxi. 1893, p. 323 (part, specimens *k*, *l*, *m*).

Columba ogilvie-granti Chubb, Bull. Brit. Orn. Club, xxxviii. 30 Oct. 1917, p. 5.

Adult male. Entire back, scapulars, wings, and tail glossy purplish brown ; flight-quills brown, rather paler on the inner webs towards the base ; hinder crown, nape, hind-neck, and mantle vinous purple ; forehead and sides of face paler and inclining to cinnamon-rufous ; breast, abdomen, under tail-coverts, axillaries, and under wing-coverts vinaceous ; flight-quills below russet-brown, becoming greyish brown at the tips ; lower aspect of tail purplish brown.

The type, which is in the National Collection, was collected by Mr. O. T. Baron at Guayabamba, northern Peru, at an altitude of 4500 feet in September 1894.

There are three other examples of this species in the British Museum which are identical with the type. Two of these were collected by the late Henry Whitely at Cosnipata, in south-east Peru, during October 1868 and May 1871, and the third by E. Bartlett on the Huallaga River in July 1868.

This species is named in honour of Mr. W. R. Ogilvie-Grant.

***Zenaida auriculata auriculata*.**

Peristera auriculata Des Murs in Gay's Hist. Chil. i. 1847, p. 381, pl. 6 : Chile.

Zenaida auriculata Salvad. Cat. B. Brit. Mus. xxi. 1893, p. 384 (part, specimens *w-e'*).

Zenaida maculata Scl. & Salv. P. Z. S. 1879, p. 639 : Bolivia ; Tacz. Orn. Pér. iii. 1886, p. 237 ; Allen, Bull. Amer. Mus. ii. 1890, p. 105 : Bolivia.

Zenaida virgata Bertoni, Aves Nuev. Paraguay, 1901, p. 24.

No. 243. ♂. Sinche Guaranda, Ecuador, 4000 metres, Dec. 1898. Native name "Paloma."

No. 352. ♂. Riobamba, Ecuador, 2800 metres, Jan. 1899.

Nos. 419, ♀; 420, ♂. Guallabamba, Ecuador, 3500 metres, Jan. 1899.

Nos. 598, ♂; 599, ♂. Cañar, Ecuador, 2600 metres, April 1899.

No. 764. ♂. Ona, Guishapa, Ecuador, 2000 metres, May 1899.

No. 826. ♂. Loja, Ecuador, 2000 metres, June 1899.

No. 1091. ♂. Catacaos, Peru, 40 metres, Aug. 1899.

No. 1128. ♂. Piura, ,, 50 metres, Aug. 1899.

No. 1443. ♂. Caraz, ,, 2200 metres, Dec. 1899.

No. 1663. ♀. Chosica, ,, 850 metres, Jan. 1900.

No. 2750. ♂. Tapacari, Bolivia, 3000 metres, March 1901.

No. 3062. ♂. Sucre, ,, 3000 metres, Sept. 1901.

No. 33. Trujillo, N.W. Peru, March 1912. Collected and presented to the British Museum by the late Lord Brabourne.

The present series of this species has been compared with that in the British Museum, which contains fifty-five specimens. There is great variation of plumage throughout the entire series, but none that favours any particular locality. I notice, however, that there is a difference of wing-measurement. The birds from Mexiana, Para, Ceara, Noronha Islands, and Matto Grosso have the wing 132-140 mm., Ecuador and Peru 145-150, Patagonia 150-154, western Argentina 145-152, Tarapaca 141-160, central Chile 146-157, and southern Chile 147-154. It will be noticed, therefore, that the eastern Brazil and Noronha Islands birds are the smallest form, and may very well be separated subspecifically as follows:—

+ *Zenaida auriculata* noronha, subsp. nov.

Zenaida noronha G. R. Gray MSS. List Birds Brit. Mus., Columbæ, 1856, p. 47: Fernando Noronha and Para.

Zenaida maculata (nec Gmel.) Ridley, Nat. Hist. Fernando de Noronha, 1890, p. 479.

Zenaida auriculata Salvad. Cat. B. Brit. Mus. xxi. 1893, p. 384 (part, specimens *b-v*).

Adult male. Forehead, sides of the crown, sides of the face, throat, breast, and abdomen pale vinous, becoming paler on the thighs and almost white on the under tail-coverts; sides of the body, axillaries, and inner under wing-coverts pale grey; outer edge of wing below slate-grey; flight-quills below pale brown; lower aspect of tail dark brown with greenish-white tips to the feathers; crown of head and nape slate-grey; hind-neck and sides of the neck coppery red; back, wings, and tail pale earth-brown; some of the major upper wing-coverts and innermost secondaries marked with black; bastard-wing, primary-coverts, and flight-quills dark brown, narrowly edged with white on the outer webs of the primaries; lateral tail-feathers grey at the base, with a subterminal black band and white, or greyish-white tips, the outermost pair entirely white on the outer webs.

Total length 232 mm., exposed culmen 16, wing 132, tail 82, tarsus 24.

Adult female. Similar to the adult male. Wing 131 mm.

The male and female described were collected at Fernando Noronha Island by Mr. H. N. Ridley in August 1887.

Melopelia meloda.

Columba meloda Tschudi, Archiv für Naturg. i. 1843, p. 385: Western Andes, Peru.

Melopelia meloda Salvad. Cat. B. Brit. Mus. xxi. 1893, p. 395.

a. ♀ imm. Trujillo, N.W. Peru, 25 March, 1912. "Iris whitish; feet red; bill black; cere ultramarine-blue" (*Brabourne*).

This specimen, which was collected by the late Lord Brabourne, is slightly immature, but is much welcomed as the sex was not previously represented in the British Museum. Since Count Salvadori catalogued the *Columbidae* a second male bird has been added to the National Collection. This was collected by Mr. O. T. Baron at Chepen, Peru, 400 feet, in June 1894, and is in the fully adult plumage.

Gymnopelia ceciliæ ceciliæ.

Columba (Chamæpelis) ceciliæ Lesson, *Echo du Monde savant*, 12 Jan. 1845, p. 8: Peru; Reprint 1913, p. 229.

Columba (Chamæpelis) anais Lesson, *Descr. Mamm. et Ois.* 1847, p. 210: Peru.

Gymnopelia erythrothorax Tacz. *Orn. Pér.* iii. 1886, p. 249; *Salvad. Cat. B. Brit. Mus.* xxi. 1893, p. 468 (part, specimens *a-d*).

Gymnopelia anais Brabourne & Chubb, *B. S. Amer.* i. 1912, p. 17, no. 170.

Gymnopelia ceciliæ ceciliæ Chubb, *Bull. Brit. Orn. Club*, xxxviii. 4 Dec. 1917, p. 18.

♂. Cajabamba, Peru, 9000 feet, March 1894.

♀. Huamachuco, Peru, 10,400 feet, March 1894.

These two specimens were collected by O. T. Baron.

No. 1410. ♀. San Pablo, Cajamarca, Peru, 1500 metres, Nov. 1899.

No. 1594. ♂. Marca, Peru, 3000 metres, Dec. 1899.

No. 1829. ♂. San Mateo, Lima, Peru, 3200 metres, Feb. 1900.

No. 2105. ♂. Caylloma, Peru, 4300 metres, June 1900.

a. ♀. Chosica, Lima, May 1914.

This female specimen from Chosica was collected by the late Lord Brabourne.

It is interesting to note that Lesson named this bird twice, in each case after a different lady—as in the ‘*Echo du Monde*,’ under the name *Columba (Chamæpelis) ceciliæ*; at the end of the article he writes:—“Cet oiseau vit

au Pérou. Il est consacré à madame Gautrau, née Cécile Lesson"; and in his Descr. Mamm. et Ois., under the name of *Columba* (*Chamæpelis*) *anais* Lesson, he writes:—" Cette gracieuse espèce vit au Pérou. Elle est dédiée à mademoiselle A. Rand. Nous l'avons décrite pour la première fois dans l'Écho du monde savant de 1845, p. 8."

Gymnopelia ceciliæ gymnops.

Chamæpelis gymnops G. R. Gray, List of the Birds in the British Museum, Columbæ, 1856, p. 53 [nom. nud.] : Bolivia.

Gymnopelia erythrothorax Allen, Bull. Amer. Mus. ii. 1890, p. 105 : Bolivia; Salvad. Cat. B. Brit. Mus. xxi. 1893, p. 468 (part, specimens *e-h*).

Gymnopelia ceciliæ gymnops (Gray MS.) Chubb, Bull. Brit. Orn. Club, xxxviii. 4 Dec. 1917, p. 18.

No. 2749. ♀ adult. Tapacari, Bolivia, 3000 metres, March 1901. Native name "Tartorhita."

No. 3085. ♂ adult. El Cabrada, Bolivia, 3500 metres, September 1901.

Nos. 3162, 3163. ♂ ♀ adult. Challapata, Bolivia, 3750-3800 metres, October 1901. Native name "Palomita."

With a series of twenty-one birds in the British Museum, including the birds collected by Simons, I notice that the northern Peruvian birds are paler than those from Bolivia and south-east Peru.

The southern birds, in most individuals, have the hind-neck tinged with vinous, and the back, wings, and tail darker and more earth-brown, instead of grey. The breast is also more vinous and the abdomen and under tail-coverts buff, instead of pale isabelline-buff.

Total length 183 mm., exposed culmen 11, wing 101, tail 71, tarsus 17.

The type, No. 3163, is in the British Museum, and was collected by P. O. Simons at Challapata, Bolivia, at an altitude of 3750 metres on 14 October, 1901. The female, No. 3162, also collected by Simons at the same place, is similar to the male described, but paler in coloration. Wing 95 mm.

Columbula picui.

Columba picui Temm. Fig. et Gall. i. 1813, pp. 435, 498 : Paraguay.

Columbula picui Sel. & Salv. P. Z. S. 1879, p. 640: Sorata, Bolivia; Salvad. Cat. B. Brit. Mus. xxi. 1893, p. 470; Lönnberg, Ibis, 1903, p. 459: Bolivian Chaco.

No. 2553. ♂ adult. Chulumani, Bolivia, 2000 metres, 27 Dec. 1900. Native name "Ulinchi."

No. 2765. ♂ adult. Tapacari, Bolivia, 3000 metres, 23 March, 1901.

Nos. 3103, 3104. ♂ adult. El Cabrada, Bolivia, 3600 metres, 19 Sept. 1901.

I have compared these four specimens with twenty-seven others in the British Museum from Brazil, Paraguay, Bolivia, Argentina, and Chile, and find them to be very similar both in coloration and measurements.

No. 2765 is unusually white on the forehead, while one from Sorata, Bolivia, collected by C. Buckley, is pale vinous on the fore part of the head and deeper vinous on the breast than any other in the series.

Chæmepelia griseola quitensis.

Chæmepelia passerina quitensis Todd, Ann. Carn. Mus. viii. 1913, p. 547: Zambiza, Ecuador.

Chamæpelina passerina (nec Linn.) Salvad. Cat. B. Brit. Mus. xxi. 1893, p. 473 (part, specimens q^5-w^5); id. & Festa, Boll. Mus. Torino, xv. 1900, No. 368, p. 35: Ecuador.

Chamæpelina griseola Tacz. Orn. Pér. iii. 1886, p. 244.

No. 321. ♀ adult. Riobamba, Ecuador, 3000 metres, 31 Dec. 1898. Native name "Tartalita."

Nos. 340, 367. ♀ ♂ adult. Riobamba, 3000 metres, Jan. 1899.

The three birds enumerated above are similar to others in the British Museum from Ecuador and Peru.

This bird is allied to *C. griseola* Spix, but the male is easily distinguished by its darker vinous coloration and larger size. The female differs from the female *C. griseola* in being earth-brown on the abdomen and flanks.

Chæmepelia minuta minuta.

Columba minuta Linn. Syst. Nat. 12th ed. i. 1766, p. 285 : Cayenne.

Chamæpelis minuta Salvad. Cat. B. Brit. Mus. xxi. 1893, p. 481 (part).

Columbina grisea Brabourne & Chubb, B. S. Amer. i. 1912, p. 18, no. 176.

Chæmepelia minuta minuta Todd, Ann. Carn. Mus. viii. 1913, p. 573.

a, b. Adult. Trujillo, N.W. Peru, 1 Sept. 1912.

These two birds were collected by the late Lord Brabourne and presented by him to the British Museum.

No. 1664. Imm. Chosica, Peru, 850 metres, 30 Jan. 1900. Native name "Tortalita."

This young bird is similar to the adult female, but differs in being everywhere paler, with narrow white edgings to the feathers on the upper surface, and the fore-neck drab-grey instead of being pale vinous.

In following Clyde Todd's distribution of this species, with the material at my disposal, I find that there is more or less variation in the wing-measurement: from Trinidad we have two individuals with the wing-measurement 73 mm., from Colombia four specimens 75 mm., from British Guiana four individuals measure 73–77 mm., while from eastern Brazil nine examples measure 71–81 mm., and from Peru seven specimens measure 73–78 mm. It will be observed, therefore, that the smallest are from Trinidad and the largest from eastern Brazil.

Eupelia cruziana.

Columba cruziana Knip & Prév. Pigeons, ii. 1838–43, p. 89, pl. 48: Bolivia.

Chamæpelis cruziana Tacz. Orn. Pér. iii. 1886, p. 248; Salvad. & Festa, Boll. Mus. Torino, xv. 1900, no. 368, p. 35: Ecuador.

Columbina cruziana Brabourne & Chubb, B. S. Amer. i. 1912, p. 18, no. 177.

Eupelia cruziana Todd, Ann. Carn. Mus. viii. 1913, p. 512.

No. 42. ♂ adult. Puna Island, Ecuador, 10 metres, 4 Nov. 1898.

Nos. 712, ♀; 732, ♂. Cuenca, Ecuador, 2200 metres, May 1899.

Nos. 901, ♂; 911, ♀. Loja, Ecuador, 2000 metres, June 1899.

No. 1081. ♀ imm. Catacaos, Peru, 40 metres, August 1899.

Nos. 1068, ♂; 1111, ♂; 1126, ♂. Piura, Peru, 50 metres, August 1899.

Nos. 1281, ♂; 1282, ♀; 1283, ♀; 1351, ♂. Eten, Peru, 15 metres, September, October, 1899.

Nos. 1537, ♀; 1538, ♀; 1539, ♀; 1540, ♂; 1541, ♂. Caraz, Peru, 2200 metres, December 1899.

20 ♀, 58 ♂ imm. Trujillo, N.W. Peru, September 1912. Collected and presented to the British Museum by the late Lord Brabourne.

I have compared this series with sixteen other examples in the British Museum from Ecuador, Peru, Bolivia, and northern Chile, and find them to be very similar in coloration of plumage, but the birds from the south are rather larger in wing-measurement. The amount of material to hand, however, is not sufficient to enable me to come to any satisfactory conclusion on this point.

Claravis pretiosa.

Peristera pretiosa Ferari-Percz, Proc. U. S. Nat. Mus. ix. 1886, p. 175: Mexico.

Peristera cinerea (nec Scop.) Salvad. Cat. B. Brit. Mus. xxi. 1893, p. 491; id. & Festa, Boll. Mus. Torino, xv. 1900, No. 368, p. 35: Ecuador.

Claravis pretiosa Brabourne & Chubb, B. S. Amer. i. 1912, p. 18, no. 183.

a. Adult. Zaruma, Ecuador, 1000 metres, 17 June, 1899.

This specimen, which was collected by P. O. Simons, is in good condition, and is similar to others in the British Museum from various localities in South America.

***Metriopelia melanoptera melanoptera*.**

Columba melanoptera Molina, Hist. Nat. Chili, 1782, p. 308: Chile.

Metriopelia melanoptera Tacz. Orn. Pér. iii. 1886, p. 239; Salvad. Cat. B. Brit. Mus. xxi. 1893, p. 497 (part, specimens *f-r*).

No. 2067. ♂. Arequipa, S.E. Peru, 2300 metres, May 1900.

Nos. 2812, 2813. ♂. Paratani, Bolivia, 2500 metres, April 1901.

No. 3016. ♂. Oruro, Bolivia, 3700 metres, August 1901.

No. 3100. ♂. El Cabrada, Bolivia, 3500 metres, September 1901.

Nos. 3180, ♀; 3181, ♂. Challapata, Bolivia, 3750 metres, October 1901. Native name "Polomita."

These examples agree fairly well with others in the British Museum from Chile, Patagonia, western Argentina, Bolivia, and Peru.

With a series of thirty-two specimens of this species from Ecuador, Peru, Bolivia, western Argentina, and Chile, I notice, as has already been remarked by Berlepsch & Taczanowski and also by Count Salvadori, that the seven birds from Ecuador are darker on the head and back and the lower flanks, and the vinous on the underparts is paler and not so pronounced as in examples from Peru and the rest of the localities mentioned above. I have therefore separated the Ecuador bird subspecifically under the following name:—

***Metriopelia melanoptera saturatior*.**

Metriopelia melanoptera saturatior Chubb, Bull. Brit. Orn. Club, xxxviii. 29 Dec. 1917, p. 32.

Metriopelia melanoptera (nec Molina) Berl. & Tacz. P. Z. S. 1884, p. 311: Western Ecuador; Salvad. Cat. B. Brit. Mus. xxi. 1893, p. 497 (part, specimens *a-e*); id. & Festa, Boll. Mus. Torino, xv. 1900, No. 368, p. 36; Brabourne & Chubb, B. S. Amer. i. 1912, p. 19, no. 187 (part).

Adult male. Differs from *M. m. melanoptera* in being darker on the head, back, and lower flanks, and the vinous on the underparts not so pronounced as in examples from Peru and the more southern localities.

Total length 200 mm., exposed culmen 12, wing 131, tail 78, tarsus 21.

Habitat. Ecuador.

The type, a male, No. 642, in the British Museum, was collected at Cañar, western Ecuador, at an altitude of 3000 metres, by P. O. Simons on 10 April, 1899. There is also a female collected by Simons on 9 January, 1899, at Riobamba, 3100 metres.

Leptophaps aymara aymara.

Columba aymara Knip & Prév. Pigeons, ii. 1838-43, p. 62, pl. 32: Bolivia.

Metriopelia aymara Sclater & Salvin, P. Z. S. 1879, p. 639: Bolivia; Tacz. Orn. Pér. iii. 1886, p. 240; Salvad. Cat. B. Brit. Mus. xxi. 1893, p. 499 (part, specimens *a-n*).

Leptophaps aymara Reichenow, J. f. O. 1913, p. 401.

Nos. 2083, 2085, 2099, ♂; 2084, ♀. Sumbay, Peru, 4000 metres, June 1900. Native name "Palomita."

Nos. 3000-3007. ♂ ♀. Oruro, Bolivia, 3700 metres, August 1901. Native names "Tortalita," "Ulincho."

Nos. 2737, 2738. ♂ ♂. Catamarca, Bolivia, 4400 metres, March 1901. Native name "Curicata."

No. 3026. ♀. Livichuco, Bolivia, 4500 metres, August 1901. Native name "Culyocota."

No. 3115. ♀. Potosi, Bolivia, 4300 metres, Sept. 1901. Native name "Koulco."

Nos. 3148, ♀; 3149, 3179, ♂. Challapata, Bolivia, 3800 metres, Oct. 1901.

Nos. 3190, 3191. ♂. Uyuni, Bolivia, 3660 metres, Nov. 1901.

I have compared the Simons birds with others in the British Museum from Peru and Tarapaca, all of which agree fairly well. There are, however, four specimens from Pampas

Argentinas and one from Santa Catalina that are smaller than the others. These represent *Columbina aurisquamata* Leybold, which can be separated, by their smaller size, paler coloration above, and purple-grey below, under the following name :—

Leptophaps aymara aurisquamata.

Columbina aurisquamata Leybold, Leopoldina, Heft viii. 1873, No. 7, p. 53 : Pampas Argentinas.

Metriopelia aymara Salvad. Cat. B. Brit. Mus. xxi. 1893, p. 499 (part, specimens *o-r*).

The four specimens in the British Museum from Pampas Argentinas are smaller and paler in coloration than others from Bolivia, and as Leybold has already named the bird from there, it may be well to regard it as a subspecies of *L. aymara aymara*.

Leptoptila verreauxi verreauxi.

Leptoptila verreauxi Bonap. Consp. Av. ii. 1854, p. 73 : New Granada.

The series in the British Museum of this bird, which has hitherto been placed under *L. verreauxi* Bonap., appears to me to contain several subspecific forms and can be easily divided into geographical subspecies.

The material at my disposal shows that the Colombian and western Venezuelan birds are the same. I cannot, however, vouch for the eastern Venezuelan ones, as there are none in the National Collection.

Leptoptila verreauxi riottei.

Leptoptila riottei Lawr. Ann. Lyc. New York, ix. 1869, p. 138 : Navarro, Costa Rica.

The birds from Costa Rica and Panama in the British Museum are, as a rule, larger in size, and as Lawrence has already introduced a name, it may as well be used for individuals from these localities. It is quite possible, of course, that with a larger series other characters may be discovered.

Leptoptila verreauxi insularis.

Leptoptila insularis Richmond, Proc. U.S. Nat. Mus. xviii. 1896, p. 659 : Margarita Island.

There are three birds in the British Museum from Margarita Island collected by Dr. P. R. Lowe, one of which is a fully adult male and is quite different from the Colombian bird, being much paler on the under surface, while a greyish hue pervades the head, hind-neck, and sides of the neck. On these grounds, therefore, I consider it worthy of subspecific rank.

***Leptoptila verreauxi brevipennis*, subsp. nov.**

Leptoptila brevipennis (nomen nudum) Gray, List B. Brit. Mus., Columbæ, 1856, p. 54: Trinidad.

Gray's type from Trinidad is darker on the back, wings, and tail, being bronze with a slight tinge of green, instead of clay-brown; head and hind-neck inclining to grey; sides of face, throat, fore-neck, and breast darker vinous than in the Colombian bird, *L. v. verreauxi*.

Total length 260 mm., exposed culmen 16, wing 137, tail 97, tarsus 27.

It may be mentioned that there are two others in the British Museum from Trinidad which bear out the characters given above.

Leptoptila verreauxi macconnelli.

Leptoptila verreauxi macconnelli Chubb, Bull. Brit. Orn. Club, xxxviii. 29 Dec. 1917, p. 32.

There are seven birds from British Guiana in the National Collection, all of which differ conspicuously from the typical *L. v. verreauxi* and the other forms by the fiery-red patch on the sides of the nape and behind the eye. I have therefore described it as a separate subspecies under the above title.

Adult male. Differs from *L. v. verreauxi* in having the back, wings, and tail bronze-green instead of clay-brown; mantle deep amethystine; above and behind the eye and sides of the occiput fiery-red; fore-neck and breast darker vinous than in the typical form.

Total length 245 mm., exposed culmen 18, wing 134, tail 108, tarsus 30.

Leptoptila verreauxi decolor.

Leptoptila decolor Salvin, Nov. Zool. ii. 1896, p. 21 :
Cajabamba.

Leptoptila verreauxi Salvad. Cat. B. Brit. Mus. xxi. 1893,
p. 548 (part, specimens *v, w*).

No. 38. ♂. Puna Island, Ecuador, 10 metres, 4 Nov. 1898.
Native name "Paloma."

No. 903. ♂. Loja, Ecuador, 2000 metres, 6 June, 1899.
Native name "Paloma grande."

No. 1099. ♀. Piura, N.W. Peru, 30 metres, 8 Aug.
1899.

The three birds collected by Simons are identical with
L. v. decolor in the colour of the upper parts, but rather
darker vinous and approaching *L. v. verreauxi* on the under
surface.

Leptoptila megalura.

Leptoptila megalura Sclater & Salvin, P. Z. S. 1879, p. 640:
Tilotilo, Prov. Yungas, Bolivia; Salvad. Cat. B. Brit. Mus.
xxi. 1893, p. 556, pl. xiii.

No. 2675. ♂. Chulumani, Bolivia, 2200 metres, 21
Jan. 1901. Native name "Paloma Tucuru."

I have compared this specimen with the type in the British
Museum and find it to be almost identical in plumage,
except that it is slightly darker on the sides of the face
and inclining to ochreous on the flanks, but the wing and
tail measurements are rather larger, being: wing 158 mm.,
tail 116, whereas in the type the wing is 145 and the tail
111, and in the co-type, wing 147 and the tail 105. It may
be remarked, however, that neither of the typical specimens
is sexed.

Geotrygon bourcierii bourcierii.

Geotrygon bourcierii Bonap. Consp. Av. ii. 1854, p. 171 :
Ecuador; Salvad. Cat. B. Brit. Mus. xxi. 1893, p. 576.

a. Mindo, W. Ecuador, 6000 feet, Jan. 1914. "Bill
black; feet red; iris reddish brown; eyelids dull red"
(*W. Goodfellow*).

Nos. 978, 978 *a*. Cangunana, W. Ecuador, 1500 metres, 8 July, 1899.

I have compared the three birds enumerated above with three others in the British Museum, and find them to be very similar in colour of plumage and in wing and tail measurements. There is one individual, however, from Baeza in eastern Ecuador, which appears to differ from the other six, and which I propose to deal with separately.

***Geotrygon bourcieri baeza*.**

Geotrygon bourcieri baeza Chubb, Bull. Brit. Orn. Club, xxxviii. 29 Dec. 1917, p. 33.

This bird is similar to *G. bourcieri bourcieri*, but differs in being paler and more grey on the under surface, darker on the upper parts, and larger in size. "Iris brown; eyelids red; bill black; nostrils reddish; feet red" (*W. Goodfellow*).

Total length 300 mm., exposed culmen 18, wing 164, tail 106, tarsus 43.

The average wing-measurement of the six birds belonging to *G. b. bourcieri* from western Ecuador is 150 mm. and the tail 88 mm.

The type, which is in the British Museum, was collected by W. Goodfellow in February 1914, and presented to the National Museum by Mr. E. J. Brook.

Habitat. Baeza, eastern Ecuador, altitude 6000 feet.

Family RALLIDÆ.

***Rallus æquatorialis*.**

Rallus æquatorialis Sharpe, Cat. B. Brit. Mus. xxiii. 1894, p. 18: San Lucas, Ecuador.

No. 665. Cañar, Ecuador, 2600 metres, 20 April, 1899. Native name "Patita." "Iris dull red; bill and feet red" (*P. O. Simons*).

This specimen is very similar to the type which is in the British Museum, but differs in having the lower abdomen and vent isabelline-buff.

a. Imm. Antisara, E. Ecuador, 1200 ft., October 1914. "Iris dark red; bill scarlet towards the tip of the upper mandible; feet dingy yellow" (*W. Goodfellow*).

b, c. Nestlings in down. Antisara, 1200 ft., October 1914. "In black down which is for the most part tipped with white; round the base of the bill orange-red" (*W. Goodfellow*). "Iris dark brown, eyelids scarlet; feet light yellow; bill orange at base, tip vivid scarlet" (*W. Goodfellow*).

Pardirallus maculatus.

Rallus maculatus Bodd. Tabl. Pl. Enl. 1783, p. 48: Cayenne.

a. ♂; *b.* ♀. Trujillo, N.W. Peru, September & December, 1912. "Iris crimson; bill dark green, base of lower mandible dull red; feet purplish red" (*Brabourne*).

Nos. 1317, 1352. Adult. Eten, Peru, October 1899. Native name "Gallonita." "Found in tule swamp." Simons states that this bird is good-eating.

After the examination of a series of fourteen specimens in the British Museum from the following localities—Surinam, Trinidad, Tobago, Venezuela, Colombia, Brazil, Pernambuco, Rio de Janeiro, and Buenos Aires, I see no appreciable difference in the birds from any of the localities cited. This appears to be the first record of this bird in Peru.

The nestling of this species is entirely black.

Pardirallus rityrhynchus rityrhynchus.

Ypacaha pardo Azara, Apunt. i. 1802, p. 220.

Rallus rityrhynchus Vieill. N. Dict. d'Hist. Nat. xxviii. 1819, p. 459: Paraguay; *Sci. & Huds. Argent. Orn.* ii. 1889, p. 149.

Limnopardalus rityrhynchus Sharpe, Cat. B. Brit. Mus. xxiii. 1894, p. 29.

Nos. 4864, 4866, ♂ ♀, 4892. El Carrizal, Sierra de Cordoba, Argentina, 1000 metres, Nov. and Dec. 1915.

Nos. 5216, 5218, ♂ ♀. Isla Ella, Delta del Parana, Argentina, Jan. 1917.

These specimens were collected and presented to the British Museum by Mr. Robin Kemp.

The series of this bird in the National Collection exhibits much variation in colour, especially on the under surface,

some being much paler than others. I notice, too, that Nos. 5216 and 5218 are somewhat darker than those from Cordoba.

The immature female of *P. r. rityrhynchus* is earth-brown in its first plumage, with a dull white throat. This specimen was collected by C. H. B. Grant at Cape San Antonio, Prov. Buenos Aires, on 21 December, 1908: another young bird, which is a male, was collected on the 28th of the same month and has still got the dull white throat, but is darker on the breast, abdomen, and flanks; while a third young bird collected at Ajó on 27 January, 1909, though larger in size, differs but very little from the young female mentioned above. A young female obtained on 4 February at Los Ynglases has lost the white on the throat, which is replaced by grey, and the breast and abdomen are becoming slate-blue; yet another young male collected at the same place on 10 February is still in the earth-brown plumage, although it is larger in size.

The young of *P. r. sanguinolentus* appears, from a specimen collected at the Río Cauta on 8 March, 1891, to pass through a much darker phase of plumage, being coffee-brown in this particular bird.

After examining the series of *Pardirallus rityrhynchus* and *P. sanguinolentus* in the British Museum, I have come to the conclusion that the difference between the two can only be regarded as subspecific. *P. rityrhynchus* was described by Vieillot from Paraguay, and ranges from there to southern Brazil, Uruguay, and Argentina, and is not, so far as I can gather, found on the western side of the Andes; while *P. sanguinolentus*, which was described by Swainson from Chile, does not occur on the eastern side of the Andes. The character given for the separation of these two species—namely, the greater amount of black on the upper parts in *P. rityrhynchus*—is a variable one, and in consequence of this the eastern bird has been said to occur in western Peru, from the fact that the individuals from north-western Peru show an increased amount of black on the upper surface, compared with those of *P. sanguinolentus* from

Chile. I am of opinion, however, that the bird in north-western Peru is a different race, and I have separated it under the following name:—

***Pardirallus rityrhynchus simonsi*.**

Pardirallus rityrhynchus simonsi Chubb, Bull. Brit. Orn. Club, xxxviii. 29 Dec. 1917, p. 33.

Adult male. Closely allied to *P. r. sanguinolentus*, but differs in being olive-brown on the upper surface, instead of coffee-brown, and not so uniform; the underparts paler—the breast and abdomen slate-grey instead of bluish slate-colour; and the wing-measurement smaller.

Total length 330 mm., exposed culmen 53, wing 134, tail 63, tarsus 52, middle toe and claw 58.

Habitat. North-western Peru.

The type, which is in the British Museum, was collected at Eten in north-western Peru by P. O. Simons on 9 October, 1899: No. 1345.

There is also an example in the British Museum said to have been collected at Junin by Jelski, which Taczanowski examined when writing his Orn. Pérou and on the label of which he wrote “= *cæsius* Tschudi.” It is certainly different from the ten other specimens in the National Collection from Peru, and must be regarded therefore as a separate form.

***Pardirallus rityrhynchus tschudii*, subsp. nov.**

Rallus cæsius (nec Spix) Tschudi, Fauna Peruana, 1846, p. 300: rivers of the coast and forest-regions of Peru; Tacz. P. Z. S. 1880, p. 213: Cutervo, Lima, Junin; id. Orn. Pér. iii. 1886, p. 316.

Rallus rityrhynchus (nec Vieill.) Tacz. P. Z. S. 1874, p. 559.

Limnopardalus rityrhynchus (nec Vieill.) Sharpe, Cat. B. Brit. Mus. xxiii. 1894, p. 29 (part, specimen *l*).

Adult female. General colour of the upper surface, including the nape, hind-neck, entire back, wings, and tail, chocolate-brown, darker and inclining to blackish on the apical portion of the innermost secondaries and tail-feathers;

fore part of face and forehead blackish with glossy-black shaft-lines to the feathers on the latter; hinder face, throat, sides of neck, breast, and abdomen deep bluish slate-colour; vent, lower flanks, thighs, and under tail-coverts dusky black; under wing-coverts blackish brown. This bird differs also by its shorter and much more slender bill.

"Bill olive-green, bluish at the base of the upper mandible, a large blotch of red on the sides; iris red; feet yellowish red" (*Taczanowski*).

Total length 301 mm., exposed culmen 48, wing 131, tail 59, tarsus 43, middle toe and claw 50.

Habitat. Central Peru.

The type, which is in the British Museum, was collected at Junin, central Peru.

Pardirallus rityrhynchus sanguinolentus.

Rallus sanguinolentus Swains. Anim. in Menag. 1837, p. 335: "Inhabits Brazil and Chile." I designate Chile as the type-locality.

Pardirallus sanguinolentus Brabourne & Chubb, B. S. Amer. i. 1912, p. 22, no. 222.

Nos. 234, 324. Maquehue, Tamuco, southern Chile, March 1908-09.

No. 54. Maquehue, Tamuco, southern Chile, Sept. 1905.

Nos. 46, 47. Petal, Tamuco, Nov. 1909. Indian name, "Piden."

The specimens mentioned above are in fully adult plumage and are typical *P. sanguinolentus* of Swainson. They were collected by Messrs. D. S. Bullock and A. C. Saldaña and are now in the British Museum.

Aramides wolfi.

Aramides wolfi Berl. & Tacz. P. Z. S. 1883, p. 576: Chimbo, W. Ecuador; Sharpe, Cat. B. Brit. Mus. xxiii. 1894, p. 55: Balzar Mts.; Salvad. & Festa, Boll. Mus. Torino, xv. No. 368, 1900, p. 40: forest of the Rio Peripa, W. Ecuador.

a. ♀. Mindo, W. Ecuador, 31 Dec. 1913. "Iris reddish gold; eyelids bright red; feet bright rose-pink; bill light emerald, base golden green" (*W. Goodfellow*).

This specimen, which is in full plumage and well preserved, is a very welcome addition to the National Collection. Although there were two previously in the collection, yet neither of them had any information in regard to sex or colour of soft parts.

b, c. Nestlings covered entirely with soot-black down. Mindo, 6000 ft., Jan. 1914. "Iris brown; eyelids and skin generally showing bright red through the down; feet brown; bill reddish brown, extreme tip yellow" (*W. Goodfellow*).

Aramides cajanea cajanea.

Poule-d'eau de Cayenne, D'Aubent. Pl. Enl. ix. pl. 352.

Fulica cajanea P. L. S. Müller, Syst. Nat. Suppl. 1776, p. 119; Cayenne.

Fulica major Bodd. Tabl. Pl. Enl. 1783, p. 21.

Cayenne Gallinule, Lath. Gen. Syn. iii. pt. 1, 1785, p. 253: Cayenne.

Fulica cayennensis Gmel. Syst. Nat. 1789, p. 700; Cayenne.

Rallus maximus Vieillot, N. Dict. d'Hist. Nat. xxviii. 1819, p. 555: Cayenne.

Aramides cayanea Sharpe, Cat. B. Brit. Mus. xxiii. 1894, p. 57 (part, specimens *c, d, e*): Maroni river, Surinam, and Bartica Grove, British Guiana.

This species was originally described by Müller from Cayenne under the title quoted from his work, and by various other authors since, under different names, also from the same place. It is chiefly characterized by having the back rufous-brown, the rump and upper tail-coverts deep black, neck all round dark slate-grey, the abdomen chestnut, and the thighs dusky grey.

The distribution appears to be, from material examined in the British Museum and McConnell collections, French, Dutch, and British Guianas, and Venezuela.

I am of opinion, however, that this species, which has hitherto been supposed to occur throughout South America to Panama, is easily separable into three subspecific forms.

There is an example from Pará which has been associated with the Guiana bird, but it is much deeper in colour both above and below, and I am inclined to think that with more

material it might prove to be a distinct form, in which case it may bear the name of

***Aramides cajanea grahami*, subsp. nov.**

Total length 330 mm., exposed culmen 53, wing 275, tail 60, tarsus 73, middle toe and claw 65.

Habitat. Pará.

The type, which is in the British Museum, was collected by the late Ronald Graham at Pará, Brazil.

***Aramides cajanea salmoni*.**

Aramides cajanea salmoni Chubb, Bull. Brit. Orn. Club, xxxviii. 4 March, 1918, p. 48: Remedios, Antioquia, Colombia.

Aramides cayanea Sharpe, Cat. B. Brit. Mus. xxiii. 1894, p. 57 (part, specimen *b*): Remedios, Antioquia, Colombia.

Aramides chiricote (nec Vieill.) Sharpe, Cat. B. Brit. Mus. xxiii. 1894, p. 58 (part, specimens *l, m, n, o*: interior of Colombia, Panama and Veragua).

This form has been separated from *A. c. cajanea* on account of having the back and upper wing-coverts bronze olive-green instead of rufous-brown, the rump and upper tail-coverts smoke-black instead of deep black, the neck all round ash-grey instead of dark slate-grey, the abdomen rufous instead of chestnut, and the thighs pale ash-grey instead of dark dusky grey.

Habitat. Western Venezuela (Merida) and Colombia to Panama.

The type, which is in the British Museum, was collected at Remedios, Antioquia, Colombia, by T. K. Salmon, Salvin-Godman collection.

***Aramides cajanea chiricote*.**

Rallus chiricote Vieill. N. Dict. d'Hist. Nat. xxviii. 1819, p. 551: Paraguay.

Gallinula ruficeps Spix, Av. Bras. ii. 1825, p. 74, tab. xevi.: "Província Rio de Janeiro."

Aramides cayanea (nec Müll.) Sharpe, Cat. B. Brit. Mus. xxiii. 1894, p. 57 (part, specimen *f*): Rio de Boraxudo.

Aramides chiricote Sharpe, Cat. B. Brit. Mus. xxiii. 1894,

p. 58 (part, specimens *e, f, h, i, k*) : Bahia, Chapada, Matto Grosso, Rio Solimoens, E. Peru.

No. 2891. Charuplaya, Bolivia, 1300 metres, 18 May, 1901. Native name "Pucachaca." "Feet and iris red ; bill greenish yellow" (*P. O. Simons*).

This southern form is distinguished from *A. c. cajanea* by its greyer upper surface, the paler underparts, and the rufous-brown patch on the hinder crown and nape. Its distribution, based on material in the British Museum, is Bahia (*Wucherer*), Itaparica Island, Bahia (*Nicholl*), Rio de Janeiro (*Joyner*), Paraguay (*Foster & Brabourne*), Pan de Azucar (*C. H. B. Grant*), Rio do Boraxudo, Brazil (*Natterer*), Chapada, Matto Grosso (*Smith & Robert*), Salta, Argentina (*Moreno*), Bolivia (*Simons*), Rio Solimoens (*Wallace*), and Yquitos, eastern Peru (*Whitely*).

Neocrex erythrops.

Porzana erythrops Selater, P. Z. S. 1867, p. 348, pl. xxi. : Lima ; Tacz. Orn. Pér. iii. 1886, p. 325.

Neocrex erythrops Selater & Salvin, P. Z. S. 1868, p. 457.

No. 1251. Adult. Eten, N.W. Peru, 15 metres, 21 Sept. 1899. Native name "Patito."

This example agrees with the type which was collected in the neighbourhood of Lima, and is now in the British Museum, Salvin-Godman collection.

Gallinula galeata.

Crex galeata Licht. Verz. Doubl. 1823, p. 80 : São Paulo.

Gallinula galeata Tacz. Orn. Pér. iii. 1886, p. 327 : Lima, Junin, Callao ; Sharpe, Cat. B. Brit. Mus. xxiii. 1894, p. 177.

Nos. 1249, ♀ ; 1250, 1251, ♂. Adult et imm. Eten, N.W. Peru, Sept. 1899. Native name "Gallonita."

Nos. 1330, 1331, ♀. Reque, Lambayeque, Peru, 35 metres, 6 Oct. 1899.

Nos. 147, 148, ♀. Trujillo, N.W. Peru, 24 Nov. 1912 "Iris brown ; feet apple-green, vermilion at base ; bill

vermilion, tip apple-green" (*Brabourne*). These specimens were collected and presented to the British Museum by the late Lord Brabourne.

Having examined a large series of this species in the British Museum from various localities in South America, I find that the individuals mentioned above are rather smaller in wing-measurement than those from the south and east. I may mention, however, that they are chiefly immature birds, which may account for it. I notice, too, that the birds from southern Peru, Lake Titicaca, and northern Chile have a larger average wing-measurement than those from other parts of the continent. These no doubt represent the form described by Allen under the name *C. garmani* (*cfr.* Bull. Mus. Comp. Zoöl. Cambridge, Mass., iii. 1876, p. 357). It is unfortunate that in this fairly large series there are no specimens from São Paulo, the type-locality, with which comparisons could be made.

Fulica ardesiaca.

Fulica ardesiaca Tschudi, Arch. für Naturg. 1831, p. 389: Peru, on the banks of the rivers and in the Andean lakes; Salvad. & Festa, Boll. Mus. Torino, xv. 1900, No. 368, p. 40: Laguna di Kingora.

No. 388. Adult. Colta, Riobamba, Ecuador, 3100 metres, 9 Jan. 1899. Native name "Pata Prieta."

This example is similar to others in the British Museum from Peru and Ecuador.

Fulica gigantea.

Fulica gigantea Eyd. & Soul. Voy. 'Bonite,' 1841, p. 102, pl. 8: Peru; Tacx. Orn. Pér. iii. 1886, p. 329: Petit lac Ascaccocha, dans les alos d'Huaihuai (*Tschudi*); environs du lac Junin (*Jelski*).

Nos. 3135, 3136. Adult. Potosi, Bolivia, 4500 metres, 30 Sept. 1901. Native name "Yaa-Pata." Simons states that this species was found in all Andean lakes. Feeding among the weeds and sand.

II.—*Birds in the North of France, 1917–18.*

By Capt. A. W. BOYD, M.C., M.B.O.U.

DURING the thirteen months from March 1917 to March 1918 I kept fairly careful notes of the birds I saw in France. Practically the whole of this time was spent in the Departments Pas de Calais, Somme, and Nord. Naturally it is difficult for an infantry officer to stay in one spot for any considerable length of time, and notes taken in this way are somewhat disjointed and necessarily quite incomplete. Between March and September 1917 we went up the river Somme to Péronne, east of that town to Roisel and Epéhy, north to Villers Pluich and Havrincourt Wood, and finally were in a reserve area at Achiet le Grand near Bapaume. I was then fortunate enough (from an ornithological point of view) to spend just over four weeks of October and November at the base at Etaples, where the river Canche forms a short muddy estuary and a fair variety of birds occurs, and where I had previously spent a day in May; from November to March 1918 I was in the line in the La Bassée sector, east of Béthune, and in reserve in that area; and finally returned to the neighbourhood of Bapaume during the German offensive at the end of March. I also include notes on the birds seen during a very short stay in France at the end of July and early in August, 1918.

Going up the river Somme in March, just before the first German evacuation of Péronne, we found the country between Eclusier and Péronne (the scene of part of the early stages of the first Somme offensive) remarkably desolate; buntings were by far the commonest birds—yellow-hammers in great numbers and common buntings—with many larks of two species and flocks of linnets, but there was little else except hooded crows and odd sparrow-hawks: a very few of the familiar garden birds still clung to the flattened villages—odd wrens, etc., but the house-sparrow seemed to be the only bird that felt really at home.

Following the retreating Germans from Péronne to the

east, we found the villages (with rare exceptions) entirely destroyed, and here again a few of the village birds still about the ruined houses ; in the fields of this area the ordinary birds of the season were plentiful and unconcerned. When the summer migrants arrived they returned to their old haunts in the half-felled orchards and the ruined houses, and nested quite happily ; swallows were going in and out of the derelict houses within four days of their first appearance, and nested in large numbers under almost any shelter ; nightingales and other warblers were not uncommon in woods and copses actually in the firing-line ; corn-crakes and quail were plentiful in the long hay-grass growing round the front-line trenches of this part of Somme.

In the following winter (1917-18) in old-established trenches in the La Bassée sector, which was at that time a quiet part of the line, quite a number of species were to be seen daily actually in and about the trenches in Givenchy and the Brickstacks and in No Man's Land : partridges were common and many finches and pipits, while small flocks of tree-sparrows were frequently seen on the wire in front of the craters, which divided the German line from ours.

After the great spring and autumn migrations of Gallipoli and Egypt, the movements in France were bound to seem comparatively uninteresting, and the only really noticeably great one was that of the hooded crows on the coast in October, though a number of quite interesting birds of passage were seen, and an evident migration of such birds as song-thrushes, robins, etc.,—some presumably from England—reached the coast towards the end of October.

In the spring the river Somme south of Péronne, where it runs north and south, seemed to be the route by which many migrants entered Flanders, and large gatherings of swallows were to be seen there. In the autumn, while near Bapaume, I noticed, on the other hand, that all the swallows and martins were moving from east to west, possibly turning south into a river-valley later on ; here a few birds of passage not seen during the summer, such as wheatears, blue-headed wagtails, and pied flycatchers, lingered for a short time.

An early passage of a good number of species was noticed on 28 February, 1917, on our way from Egypt to France, a few hours after we had passed to the north-east through the straits of Messina ; many small birds came on board the boat : stonechats, redbreasts, song-thrushes, chaffinches, skylarks, pipits, white wagtails, etc. ; but in the north of France the weather was cold until mid-April and nothing of interest happened till then, when the summer migrants began to arrive.

The very severe winter of 1916-17 no doubt reduced the numbers of many species in France as it did in England ; I did not see a single fieldfare in France, and redwings were not at all abundant, and probably the absence or comparative scarcity of a number of species of resident birds is to be accounted for in the same way.

I have seen nothing of numbers of species which other observers have found so common in other parts of the line or in the same parts in different seasons : owls, for example, which others have seen so commonly, I failed to find ; the same holds good of a number of water-birds, as I only occasionally visited the river Somme and its floods, where duck gather in large numbers in the winter ; similarly I never saw the large flights of geese reported from some parts in late autumn.

The period covered is from March 1917 to March 1918, so that except for the month of March the year of an observation is not given. I have added also a few observations made in July and August, 1918. The nomenclature used is that of the B.O.U. list, 1915.

Corvus corone. Carrion-Crow.

Fairly common in Somme. In October and November they were frequently to be seen in the Canche estuary and on the sand-dunes at Etaples with the hooded crows and rooks.

Corvus cornix. Hooded Crow.

Throughout March 1917 very common in the area of the Somme battle and in some numbers round Péronne during

April; the last I saw were two at Brie on 26 April, which attacked a marsh-harrier. In the autumn I first saw one in the Canche estuary on 14 October; day by day its numbers increased, and there were soon many hundreds all over the sand-banks and the sand-dunes near by.

A common bird in the La Bassée sector in winter and often about the firing-line. During February, fully 300 came to roost at night in some poplars at Le Préol, near Béthune.

***Corvus monedula.* Jackdaw.**

Fairly common in many places, though I have no note of its occurrence in Somme east of Péronne. In October occasionally seen in the Canche estuary with the flocks of hooded crows and rooks; possibly these were birds of passage.

***Corvus frugilegus.* Rook.**

Common throughout. I saw a very large flock in March 1917 in the devastated Somme area; in October, numbers (probably immigrants) with hooded and carrion crows on the Canche estuary marshes.

***Pica pica.* Magpie.**

In remarkable numbers everywhere. In parts of Somme, where most of the large trees had been felled, they nested in quite small trees. I saw them about the firing-line at Givenchy.

***Garrulus glandarius.* Jay.**

Fairly common in all woods I visited. On 14 October at Etaples there was a number in a small wood where I did not see them before or afterwards—possibly a bunch of immigrants.

***Sturnus vulgaris.* Starling.**

Common. Nested in the ruined houses at Bertincourt. Many big flocks in winter. They had a "roost" at Le Préol, near Béthune.

Oriolus oriolus. Golden Oriole.

Fairly common in June in Havrincourt Wood and other woods in that area, where its beautiful whistle could be frequently heard near the firing-line.

I found a nest in an alder near the Somme at Flixecourt, near Amiens.

Chloris chloris. Greenfinch.

Common everywhere. In flocks at the end of August with house-sparrows at Achiet le Grand; in October with linnets in the Canche estuary; and with chaffinches and bramblings in December in the firing-line at Givenchy.

Carduelis carduelis. Continental Goldfinch.

Not uncommon in Somme, where I saw a "charm" of a dozen near Péronne early in April, and others about Péronne chateau or citadel, in a Roisel orchard; common near Amiens.

Passer domesticus. House-Sparrow.

Very abundant in most places and common in the demolished Somme villages, and often about the trenches. In big finch-flocks at Achiet le Grand in August, and in the Canche estuary in October.

In June they were always common about the trenches in front of Havrincourt Wood, among the felled timber where the wood had previously extended—possibly they were getting some insect food; there was no house within a mile.

Passer montanus. Tree-Sparrow.

A common bird almost everywhere—far commoner than in England. On 19 October and for the fortnight following, there was a big flock of some hundreds on some rough ground at Etaples, with several other species of finches.

It was one of the birds actually in the trenches at Givenchy, and a small flock was often to be seen on our wire in front of the craters both north and south of the La Bassée Canal.

Fringilla cœlebs. Chaffinch.

Very common, though in one or two villages such as Epéhy and Achiet le Grand they were scarce. In some villages there were few suitable nesting-sites left, and at Bertincourt a nest was built in a dead laurel. During the last fortnight of October and early in November, many hundreds were in a finch-flock on some rough ground at Etaples and also among the marsh weeds in the Canche estuary. In December in the firing-line at Givenchy.

Fringilla montifringilla. Brambling.

First seen on 19 October in a finch-flock at Etaples, and commonly for the next three or four weeks there and among the marsh weeds of the Canche estuary at low tide; on 27 December a few were feeding on the weeds growing through the snow with a number of chaffinches and greenfinches—just behind the firing-line trench at Givenchy.

Last seen in March 1918 in Somme.

Acanthis cannabina. Linnet.

Common everywhere. Great flocks in the wasted area west of Péronne in March 1917; in April a small flock of a few score was always on or about a derelict clump of telegraph-wires at Epéhy where shells fell not infrequently. In May I found a nest in a box-bush at Roisel. By 4 September it was flocking in bunches of 50 or so at Achiet le Petit, and from 15 October for a month was in many hundreds on rough ground at Etaples with other finches; it was specially fond of the marsh weeds in the Canche estuary at low tide.

A few in the Givenchy firing-line at the end of the year.

Emberiza calandra. Corn-Bunting.

Fairly common in Somme, especially in the wasted area west of Péronne in March 1917. In May it was commonly seen and heard on the wire in front of our trenches at Villers Pluich and Beaucamp, and was evidently nesting hard by. Very common at Hébuterne in early August 1918 in the waste ground round the trenches.

Emberiza citrinella. Yellow-hammer.

An abundant bird everywhere, especially in the devastated parts; often in the firing-line at Villers Pluich and Havrincourt.

Emberiza cirrus. Cirl Bunting.

A fairly common species throughout Somme, and often seen about the ruined villages such as Villers Faucon, Trescault (just behind the firing-line). Also seen occasionally near Béthune.

Emberiza schœniclus. Reed-Bunting.

Strangely few seen: 25 March, 1917, four at Eclusier; April, a few at Brie; July, a few at Flixecourt near Amiens; all these places are on the river Somme.

Alauda arvensis. Sky-Lark.

Very common everywhere. In October and November common among the marsh weeds in the Canche estuary at low tide.

Lullula arborea. Wood-Lark.

On 21 October I saw two on some rough ground at Etaples.

Galerida cristata. Crested Lark.

Common everywhere, from the coast to the firing-line, but its distribution was a trifle more "patchy" than that of the sky-lark.

The French birds seemed rather more slaty in colour than those seen on the sand in Egypt, and even than those in Gallipoli.

Otocorys alpestris. Shore-Lark.

On 5 November seven birds were feeding along the high-water mark at the mouth of the river Canche near Paris Plage.

Motacilla alba. White Wagtail.

Fairly common wherever I went from April to October. Towards the end of April they were in company with the

newly arrived yellow and blue-headed wagtails, and in mid-October in small flocks in the Canche estuary with occasional pied wagtails. Several round the Canche estuary at the end of July 1918.

Motacilla lugubris. Pied Wagtail.

First seen on 15 October in the Canche estuary ; a few, and occasionally a small flock there for the next four weeks. A cock bird at Fouquières near Béthune on 19 February.

Motacilla boarula. Grey Wagtail.

A few in winter : in March 1917, near Pont Rémy on the Somme ; in November on the cliffs at Wimereux near Boulogne ; not uncommon near Béthune, where I saw it at Moat Farm (one of the keeps at Givenchy), at "Windy Corner," Le Plantin, and in other places.

Motacilla raii. Yellow Wagtail.

Passing at Brie on the Somme in fair numbers with blue-headed Wagtails from 20 to 27 April ; on the last date *M. flava* outnumbered them by ten to one. On 30 July, 1918, I saw a hen by the Canche estuary which I think was certainly of this species ; it had a yellowish eye-stripe.

Motacilla flava. Blue-headed Wagtail.

From 20 to 27 April passing at Brie in large numbers ; between thirty and thirty-five on 4 September at Achiet le Petit. I did not see one bird during the summer.

Anthus trivialis. Tree-Pipit.

First seen, half-a-dozen in number, on 17 April at Péronne citadel ; common in Havrincourt Wood in June ; a few near Amiens in July.

Anthus pratensis. Meadow-Pipit.

A few seen near Péronne in April, but none east of that. Common at Rouen and Etaples in October, and at Le Touquet in May. In December not uncommon about the Givenchy firing-line and in the district round Béthune during the winter.

Anthus petrosus (? sub-spec.). Rock-Pipit.

A number about the Canche estuary in October and November.

Certhia familiaris. Tree-Creeper.

Only seen rarely in the Touquet woods near Paris Plage, in October and November.

Regulus regulus. Gold-crest.

Possibly this was one of the species that had suffered by the 1916-17 winter. Not often seen : three in the Bois de Tailloux, Hamel, on the Somme, 21 March, 1917 ; a few in Rouen, 30 September ; common in the Forêt d'Hardelot, near Boulogne, on 4 November.

Parus major. Continental Great Titmouse.

Usually very common—the commonest of the tits. It was one of the birds seen in the trenches among the ruins of Givenchy village in December.

Parus palustris. Continental Marsh-Titmouse.

Fairly common in the Bois de Bailleul, near Pont-Rémy, March 1917 ; not uncommon in the Le Touquet woods, the Forêt d'Hardelot, at Etaples, etc., in November, and in Adinfer Wood, south of Arras, in March 1918. I did not see anything that appeared to be *P. borealis*.

Parus cæruleus. Continental Blue Titmouse.

Fairly common everywhere.

Ægithalus caudatus roseus. British Long-tailed Titmouse.

On 14 October, two in the Le Touquet woods near Paris Plage with other species of tits.

Lanius excubitor. Great Grey Shrike.

On 21 February near Béthune and 25 February at Annequin, not far from the first locality ; almost certainly two birds seen at Catelet near Cartigny on 20 April, 1917, were of this species, but I cannot say so definitely.

Lanius collurio. Red-backed Shrike.

Three birds, one of which was an adult cock and another a young bird with a downy head, at Etaples on 31 July, 1918. To my surprise, I never saw this species elsewhere.

Lanius senator. Woodchat.

On 2 and 3 June at Ytres near Bertincourt (not far from Bapaume), in the "Little Wood" and a meadow outside the village. An adult with two young birds on 3 August, 1918, at Halloy near Doullens.

Sylvia communis. Whitethroat.

Common in the east of Somme in all places I visited in summer, and also near Amiens. Last seen at Achiet le Petit on 4 September.

Sylvia simplex. Garden-Warbler.

Common in summer in Roisel, Epéhy, Havrincourt Wood, and other places in the east of Somme.

Sylvia atricapilla. Blackcap.

Several in an orchard at Roisel on 18 May.

Acrocephalus streperus. Reed-Warbler.

A few by the Somme at Flixecourt near Amiens in July, but not nearly so plentiful as the great reed-warbler.

Acrocephalus arundinaceus. Great Reed-Warbler.

Common by the Somme at Flixecourt in July.

Acrocephalus schœnobæus. Sedge-Warbler.

Several at Péroune in May; at Flixecourt in mid-July. Probably not uncommon in some parts, but I was not in very suitable country during the summer.

Hypolais icterina. Icterine Warbler.

Common in the battered villages in the east of Somme, such as Ecquancourt, Villers Pluich, Trescault, Bertincourt, in May and June. On 25 May I watched a pair building in a lilac bush in Villers Pluich, but the place got a bad pounding on the same evening and the nest was

probably destroyed, as it was only a very short distance behind the firing-line.

Not uncommon at Flixecourt near Amiens, where I found a nest on 1 July, on the branch of a tiny poplar; the young were hatching on 15 July. Still singing in early August 1918 round Doullens.

***Phylloscopus trochilus*. Willow-Warbler.**

First heard at Brie on 22 April; its numbers increased greatly in two days, but it did not seem at all common during the summer, during which I only heard occasional birds singing in Havrincourt Wood and Trescault. Last seen in Achiet le Grand, 3 September.

***Phylloscopus collybita*. Chiffchaff.**

First heard at Brie as late as 22 April; common in Havrincourt Wood and that district generally, and near Amiens in the summer. Singing on 18 September at Achiet le Grand and in Rouen on 26 and 27 September.

A single bird on 21 October in the scrub by the Canche estuary with migrant thrushes.

***Turdus viscivorus*. Missel-Thrush.**

Fairly common in all parts. At the end of August and early in September there was a flock numbering several score in and about Logeast Wood near Achiet le Grand.

***Turdus musicus*. Continental Song-Thrush, [and? *Turdus musicus clarkei*—British Song-Thrush].**

Distinctly uncommon. Except for immigrant birds seen or heard only in four places: in Havrincourt Wood in June; at Flixecourt, near Amiens, in July; at Fouquereuil near Béthune, and in Adinfer Wood south of Arras, in March 1918, and possibly those in the last two places were on passage. On 21 October there were many very wild birds in the scrub and a little copse on the sand-dunes on the north side of the Canche estuary, but during the week following only odd birds remained; on 9 November there were a number in the Le Touquet Woods on the other side of the estuary. On 12 January one bird in a flock of redwings and blackbirds at Gorre, near Béthune.

***Turdus iliacus.* Redwing.**

First heard on 4 November at Etaples, passing by night. A few seen on several occasions near Béthune in January and February.

***Turdus merula.* Blackbird.**

Common in all parts. Some in the winter were evidently immigrants and were seen with song-thrushes in the scrub on the sand-dunes by the Canche estuary, at Gorre with redwings, etc.

***Turdus torquatus.* Ring-Ouzel.**

One in the Le Touquet wood at the edge of the Canche estuary on 5 November with other migrant *Turdidæ*.

***Phœnicurus phœnicurus.* Redstart.**

A single bird on 10 September at Achiet le Grand was the only bird seen.

***Phœnicurus titys.* Black Redstart.**

Two birds first seen on the Péronne citadel on 7 April. Common in most of the Somme villages such as Herbécourt, Flaucourt, Villers Faucon, Achiet le Grand, Flixecourt, and about Happlincourt chateau on the Somme, opposite to Brie.

They returned freely to these destroyed villages, and at Bertincourt, in May, a pair reared a brood in a very public place in the Town Major's yard.

Last seen at Boisguillaume near Rouen on 30 September.

***Erithacus rubecula.* Continental Redbreast.**

Fairly common throughout, including such ruined villages as Epéhy; also seen about the trenches at Givenchy. Some among the scrub in the dunes by the Canche estuary with immigrant birds on 21 October.

***Erithacus rubecula melophilus.* British Redbreast.**

A number of very red-breasted birds presumably of this subspecies among the scrub by the Canche on 21 October with others of the Continental form.

Luscinia megarhyncha. Common Nightingale.

Very common in all the woods in the east of Somme such as Dessart Wood and Havrincourt Wood. In May a nightingale in Ossus Wood, our most advanced position near the St. Quentin Canal, sang particularly well when the machine-guns fired, as if in answer to them; these birds were common in the small copses of this area. Common in Le Touquet Woods.

Saxicola rubicola. Stonechat.

Not often seen: a few at Brie on the Somme in April; at Flixecourt, near Amiens, on 15 July; one among the trenches in Givenchy village on 27 December.

Saxicola rubetra. Whinchat.

Apparently very local: one at Ytres near Bertincourt on 28 May; common at Flixecourt, near Amiens, in July; a fair number passing at Achiet le Grand on 30 August.

Quite abundant in early August 1918 in the rough ground round Hébuterne.

Oenanthe oenanthe. Wheatear.

Rarely seen: once seen in summer at Bertincourt on 27 May; several passing at Achiet le Grand on 30 August, and one near Logeast Wood on 12 September; two passing at Rouen on 11 October. At the end of July 1918 not uncommon on the sandhills near Etaples, where it presumably breeds.

Accentor modularis. Hedge-Sparrow.

Common; still found in all the ruined villages in east of Somme; seen at Moat Farm, one of the keeps in the Givenchy trenches.

Troglodytes troglodytes. Wren.

Common in all parts; still in the flattened villages of the Somme offensive in March 1917 and in the destroyed villages in the east of Somme.

Muscicapa grisola. Spotted Flycatcher.

Not common: seen at Roisel in May, at Flixecourt near

Amiens. Last seen at Achiet le Grand on 1 September. Several in Halloy, near Doullens, in early August 1918.

Muscicapa atricapilla. Pied Flycatcher.

In autumn at Achiet le Grand: one on 31 August and three or four on 10 September.

Hirundo rustica. Swallow.

First seen at Péronne in scores on 16 April; on the 21st I saw them going in and out of ruins at Barleux and Flaucourt. The line of the river Somme seemed to be the route by which many came in spring, and at Brie on 22 April many passed up stream (which here runs north and south) all day against a north wind, and many hundreds roosted there in fluctuating numbers during the next three days.

A most abundant breeding bird in ruins, wooden huts, etc., and astonishingly tame; a pair in a room used as an officers' mess at Bertincourt nested and hatched out on a nail in a beam in the low roof and paid no heed to all the noise, tobacco smoke and candle-light at night. During September they passed Achiet le Grand going west. Last seen in the Canche estuary on 16 October.

Delichon urbica. Martin.

First seen at Péronne on 17 April. In fair numbers nesting in the ruined villages in the east of Somme, but not nearly so numerous as the swallows. Numbers passed west with swallows at Achiet le Grand in September.

Riparia riparia. Sand-Martin.

I saw strangely few: a colony at Bourdon, near Amiens, in July; otherwise only seen on 16 & 17 April at Péronne in fair numbers with swallows, and one with them on 2 September at Achiet le Grand going west. On 31 July, 1918, two flew west down the Canche at Etaples.

Picus viridis. Green Woodpecker.

Not uncommon in most woods except in the east of Somme; round Béthune in several places, including the

village of Gorre—not far from the line ; common in Adinfer Wood, south of Arras.

Cuculus canorus. Cuckoo.

Very common in Havrincourt Wood and that district generally. Last heard calling on 1 July near Amiens ; last seen on 1 September at Achiet le Petit (a young bird).

Micropus apus. Swift.

A few about the ruined villages such as Bertincourt and Trescault, but not really common. Fairly common near Etaples.

Last seen near Achiet le Grand in the first week of August.

[**Strix aluco.** Tawny Owl.

A brown owl flying at dusk over the firing-line in front of Havrincourt was presumably of this species and was the only one seen ; I never heard its hoot.]

Circus æruginosus. Marsh-Harrier.

At Brie on the river Somme, on 26 April, I was watching a fine cream-headed bird beating down stream over the big reed-beds, when it was attacked by two hoodies which drove it away up stream again ; after a hurried start it flapped and glided into the distance.

Circus cyaneus. Hen-Harrier.

One flying over some rough country at Catelet, near Cartigny, on 20 April.

Circus pygargus. Montagu's Harrier.

A pair at Flixecourt, near Amiens, on 5 July were the only birds I saw.

Buteo ? sp. Buzzard.

On 3 January one high over the Givenchy ridge which my companion at first took for an aeroplane ; on 16 March one high over Hesdigneul, near Béthune, well above some aeroplanes which were then some 1500 feet up.

Accipiter nisus. Sparrow-Hawk.

Not infrequently seen about the devastated area of the Somme battle; in various parts of Somme and round Béthune.

Falco peregrinus. Peregrine Falcon.

In October and November at Etaples and about the Canche estuary; on 9 November one flew from the big sandbank at the river's mouth carrying a black-headed gull in its talons—I picked up the gull's corpse later.

Falco tinnunculus. Kestrel.

Common everywhere: often seen over the firing-line near Havrincourt and Givenchy; particularly numerous in Adinfer Wood on 23 March, 1918.

Sula bassana. Gannet.

In December just off Boulogne.

Tadorna tadorna. Common Sheld-Duck.

A small number—from one to seven—in the Canche estuary in October and November. Two in the Canche estuary on 31 July, 1918.

Anas boschas. Mallard.

A few on the river Somme in spring and summer near Amiens, and at Eclusier and Brie. They were seen commonly by others in the wet country between Béthune and the line in winter.

Mareca penelope. Wigeon.

Four in the Canche estuary for several days in early November.

Spatula clypeata. Shoveler.

On 23 April five birds at St. Christ, and others at Brie on the river Somme.

Nyroca ferina. Pochard.

On 25 March, 1917, 200 birds at Cappy, and others at Eclusier on the river Somme.

Nyroca fuligula. Tufted Duck.

At the end of March, at Saily Laurette, Cappy, and Péronne on the river Somme—not more than twenty together.

Ædemia nigra. Common Scoter.

On 17 April three birds were on a flood by the river Somme on the south side of Péronne; four seen from the leave-boat on 11 May just outside Boulogne, and on 11 November many passing out at sea beyond Boulogne harbour.

Ædemia fusca. Velvet-Scoter.

One on 11 November close in at Boulogne.

Mergus serrator. Red-breasted Merganser.

On 10 November two flew up the channel of the Canche estuary at low tide.

Ardea cinerea. Heron.

Odd birds seen from time to time at various places on the river Somme, in the Canche estuary, near Bapaume and near Béthune. On 31 July, 1918, I saw seventeen on the Canche mudflats at low tide.

Platalea leucorodia. Spoonbill.

On 3 November a single bird at the mouth of the Canche, near Paris Plage; it flew to the sandbank in midstream and was driven off by the gulls there; later I saw it flying wildly across the sky chased by two gulls.

Gallinago gallinago. Snipe.

At Le Touquet by the Canche estuary in November. Not seen in many places apparently suitable.

Tringa canutus. Knot.

A flock of fourteen with four grey plovers in the Canche estuary on 16 October. I was surprised to see a chestnut-breasted bird among other waders in the Canche estuary on 28 July, 1913.

Tringa minuta. Little Stint.

One in the Canche estuary with other waders on 27 October.

Tringa alpina. Dunlin.

Common in small numbers in the Canche estuary in October and November; an increase in November to about 80 birds; on 30 July, 1918, three birds in breeding-plumage.

Calidris arenaria. Sanderling.

One bird on 17 November with dunlins and ringed plovers in the Canche estuary.

Machetes pugnax. Ruff.

On 28 July, 1918, I got a close view of a bird among a number of redshanks in the Canche estuary at Etaples.

Totanus totanus. Redshank.

Remarkably few: two at Le Mesnil Bruntel, near the river Somme on 18 April, and four at Brie on 25 April; on 12 May, between 30 and 40 in the Canche estuary, but none there in the autumn; many there at the end of July 1918—about 40 together.

Totanus hypoleucus. Common Sandpiper.

First seen at Brie on the river Somme on 27 April; in the Canche estuary on 12 May.

Many in the Canche estuary at the end of July 1918—as many as 20 together.

Totanus ochropus. Green Sandpiper.

Two on 22 and 23 April by a pool at Brie, not far from the river.

Limosa limosa. Black-tailed Godwit.

On 12 May a fine red bird in full plumage was feeding by a pool just at the wood's edge in the Canche estuary; it allowed us to approach within ten yards before it flew.

Numenius arquata. Curlew.

Common in the Canche estuary in October and November, and at the end of July 1918; there was a considerable increase at the end of October, and several hundreds were daily about in the salt weeds at low tide—probably not many more than 400.

Numenius phaeopus. Whimbrel.

A fair number in the Canche estuary on 12 May; in good numbers there as early as 28 and 31 July, 1918.

Charadrius apricarius. Golden Plover.

Heard at night on 13 April at St. Emilie, near Epéhy; and on the night of 30 July, 1918, passing over Etaples, flying south-west.

Squatarola squatarola. Grey Plover.

Four in the Canche estuary with some knots on 16 October.

Ægialitis hiaticula. Ringed Plover.

Small flocks in the Canche estuary in October and November—never more than a few score; on 31 July, 1918, three birds about some rough sandy ground a few hundred yards north of the Canche estuary and near the railway.

Vanellus vanellus. Lapwing.

An uncommon bird, only seen at migration time: a flock in March 1917 at Pontrémy near Abbéville; one bird at Le Mesnil Bruntel near Péronne on 18 April; in the late autumn 40 or 50 in the Canche estuary on 16 and 17 November; in March 1918, flocks at Adinfer on the 23rd, and at Sarpignies, near Bapaume, flying over during the battle on the 25th.

Captain Dunkerley of No. 2 Squadron, R.F.C., tells me that about 9 March, 1918, he ran into a flock of what were evidently lapwings flying north at a height of 6500 feet over the line at Hulluch near Lens. All pilots and men in observation balloons that I have questioned agree that they rarely see birds at a height of more than 3000 feet.

Hæmatopus ostralegus. Oyster-Catcher.

Flocks in number between ten and twenty frequently seen in the Canche estuary in October and November.

Arenaria interpres. Turnstone.

The Canche estuary is not suitable for this species ; single birds seen there on 12 May and 3 November.

Larus canus. Common Gull.

Odd birds in the Canche estuary on 17 October, and a great increase on the following day ; common there and at Boulogne in October and November.

Larus argentatus. Herring-Gull.

Common in the Canche estuary in October and November.

Larus marinus. Greater Black-backed Gull.

A few in the Canche estuary on 17 October, and many on the following day ; in large numbers subsequently in October and November, especially on the big sandbank at the river mouth ; some in the estuary at the end of July 1918.

Larus fuscus. Lesser Black-backed Gull.

Many in October and November in the Canche estuary and at Boulogne ; some at any rate were *L. fuscus affinis*.

Larus ridibundus. Black-headed Gull.

Only occasionally seen inland : two at Péronne on 17 April ; one at Flixecourt, near Amiens, on 4 July ; three at Gorre on the La Bassée Canal on 7 January ; twenty over Adinfer Wood, south of Arras, on 23 March, 1918.

Common in the Canche estuary in October and November, and July 1918.

Hydrochelidon nigra. Black Tern.

On 31 July, 1918, I saw one resting at the edge of the channel in the Canche estuary at low tide ; after a time it began to feed, flying slowly down stream against a light breeze, dipping down to and sometimes touching the water, and then flying quickly back up stream to its starting-place ;

I could not tell what it was feeding on, as I could see no flies. It was in almost full breeding-plumage.

Alle alle. Little Auk.

One in the harbour at Boulogne on 5 December, swimming just below the bridge; it rose from the water, flew up to the bridge and then out towards the sea.

Colymbus arcticus. Black-throated Diver.

On 25 October, after a strong south-west gale, there was a bird swimming in the channel of the Canche estuary. As it was low tide I was able to get within a few yards of it; the throat and face were still black.

Podiceps ? sp.

On 9 November there was a small grebe in unusual plumage in the channel of the Canche estuary which I could not identify satisfactorily.

Podiceps fluviatilis. Little Grebe.

Not uncommon on the river Somme in various places; many on the water by Péronne citadel and round the city in April. On 21 October there was one on a small pool among the sand-dunes on the north of the Canche estuary; also in the Forêt d'Hardelot near Boulogne.

Crex crex. Corn-Crake.

Fairly common in the east of Somme round Beaucamp, Trescault, and Havrincourt Wood (where it was in the felled part of the wood where the old trees lay) in the long grass round the firing-line.

Gallinula chloropus. Moor-Hen.

Fairly common on the river Somme. On 21 October, on a small pool in the sand-dunes north of the Canche estuary.

Fulica atra. Coot.

Most abundant in all parts of the river Somme; on a pool in the Forêt d'Hardelot.

Columba oenas. Stock-Dove.

Only seen at Brie on the river Somme on 26 April.

Columba palumbus. Wood-Pigeon.

Common throughout, though never in large numbers; often about the firing-line in front of Havrincourt Wood.

Streptopelia turtur. Turtle-Dove.

Common in Somme in many places. On 18 May in an orchard at Roisel I found a pair at an early nest in a felled apple-tree; the trunk of the tree had not been completely cut through and the branches were in leaf. Last heard in Logeast Wood, near Achiet le Grand, on 9 September.

Phasianus colchicus. Pheasant.

Very uncommon: I saw it only near Abbéville. I was told of several round Festubert and other places near Béthune, but did not see them myself.

Perdix perdix. Partridge.

Fairly common throughout Somme and also in the La Bassée sector, where it was often seen about the line and gave good practice for successful rifle and Lewis-gun fire into No Man's Land. Very common round Hébuterne in August 1918; on 6 August I saw at least forty in a pack.

Coturnix coturnix. Quail.

Common in Somme from May to August; especially numerous in the long grass round the firing-line at Beaucamp, Trescault, and in the felled part of Havrincourt Wood, and in the area behind the line. Numbers at Hébuterne early in August 1918; this area was part of the old devastated area of the first Somme offensive, and the trenches were re-occupied again by us; the hundreds of acres of rough weed-covered ground must have proved a suitable sanctuary for quail and partridges in particular. The quail could be heard calling during "stand to" just before dawn.

III.—On one of the four original pictures from life of the Réunion or White Dodo. By LORD ROTHSCHILD, F.R.S., M.B.O.U.

(Plate II.)

THE first mention of the White or Réunion Dodo (*Didus borbonicus*) was made by Tatton, the chief officer of Captain Castleton (Voy. Castleton, Purchas his Pilgrimes (ed. 1625) i. p. 331, Bourbon or Réunion) and his account is as follows:—

“There is a store of land fowle both small and great, plenty of Doves, great Parrats, and such like; and a great fowle of the bignesse of a Turkie, very fat and so short-winged, that they cannot fly, being white and in a manner tame: and so be all other fowles, as having not been troubled nor feared with shot. Our men did beat them down with sticks and stones. Ten men can take fowle enough to serve fortie men a day.”

After this the White Dodo was mentioned by Bontekoe in five different treatises from 1646 to 1650, and by Carré in 1699, and a more detailed description is given by Sieur D. B. (Dubois) in 1674. In this description, however, the extremities of the tail and wings are given as black, whereas in the picture of Pieter Witthoos they appear as yellow. The truth is that the males and females were very different. The full history of the two Dodos has lately been fully worked out by Professor Oudemans, and I give here his description of the two sexes of the White Dodo:—

Male. The horny sheath of the upper mandible was hooked and sharp; its distal end black, its proximal half was yellow with transverse black stripes; the rest of the bill was white. The head and neck were reddish brown abruptly passing into a cream-coloured breast and gradually becoming yellowish further back; a few downy feathers were scattered over the head, and a ball-shaped tail of Ostrich-like feathers gradually passed into the subcaudal coverts and circumanal feathers.



REPRODUCTION OF THE PICTURE OF THE WHITE DODO
BY PIETER WITTHOOS.

Female. The horny sheath of the upper mandible was not hooked, but obtuse, sometimes ending in a blunt point, sometimes rounded; it was greyish or light fawn-coloured, the rest of the bill being greyish or greenish; the whole body cloth-white, the wings golden yellow. The tail consisted of at least six white rectrices which resemble in shape those of a Silver Pheasant.

The picture here reproduced (Pl. II.) and a second by the same artist, now in Holland, were drawn from a living bird brought to Amsterdam about 1670. The first mention of this picture was made by the late Professor Alfred Newton in the *Transactions of the Zoological Society*, vol. vi. 1867, pp. 373-376, pl. 62, where a portion of the picture is reproduced. The painter, Pieter Witthoos, was a well-known Dutch artist of birds and landscapes. The other birds in the picture are a Red-breasted Goose, a female Red-breasted Merganser, a Black Guillemot, a Tufted Duck, a Golden-eye, a female Widgeon, and a Spoonbill. There is a companion picture by the same artist depicting a Sheldrake, a Shoveler, a female Tufted Duck, a Smew, a young Great Northern Diver, a Widgeon, and two ill-defined Ducks.

These pictures were formerly in the possession of Mr. C. Dare of Clattenford, Isle of Wight, and for many years were erroneously supposed to have been deposited in Carisbrooke Castle; they were purchased by me from Mr. Dare's son in the summer of 1918.

The two other pictures are by Pieter Holsteyn and were drawn from the same bird, and are in Holland. All four paintings were made between 1670 and 1693.

The White Dodo became extinct between the years 1735 and 1801, for between 1735 and 1746 a living one reached France, sent by M. de la Bourdonnaye, the Governor of the Mascarene Islands at that time; while when Monsieur Bory de St. Vincent made his scientific survey of the islands in 1801 the bird no longer existed.

IV.—*A note on Capt. Beebe's Monograph of the Pheasants.*

By H. J. ELWES, F.R.S., M.B.O.U.

A WORK of this importance deserves a more extended notice than that given in the last number of 'The Ibis' (1918, p. 726), and as I have always been specially attracted by these splendid birds and have personal knowledge of many of them in their native haunts, I hope the following remarks may be found of interest.

It is, perhaps, a question which future authors and publishers would do well to consider, whether monographs so beautifully and artistically illustrated as this book, and which can only be published at an expense which most private ornithologists cannot afford, are desirable in the interests of science. Many of those who are wealthy enough to purchase such works are not ornithologists, and buy them for their illustrations only; many to whom the letterpress would be of permanent interest and value cannot afford to acquire the work. A second edition without the plates, or with the plates in a much cheaper form, cannot be produced with justice to the subscribers and purchasers of the original edition until that is completely sold out, which may not be for many years to come; but if the publishers had printed the letterpress in an octavo or quarto form and sold the illustrations as a separate volume, my own experience makes me think that they would, from a business point of view, have been equally well repaid; whilst a much larger edition of the letterpress might have been produced and sold with great advantage to the ornithological world.

I must congratulate Captain Beebe on the way in which, when he had determined on his monograph, he started on a long journey to some of the most remote parts of Asia with the object of seeing for himself in nature as many as possible of the birds, which the monographer of the past was content to study in museums only; and though this personal knowledge has, perhaps, led him to attach importance in some cases to more minute and possibly variable characters than he would otherwise have done, yet, as these questions of

local variation must always remain a matter of personal opinion, it does not much matter how we regard these points. I should like, however, to call attention to the perhaps unnecessary subdivision of the genus *Ithagenes*, and will begin by asking why he calls them "Blood Partridges" and not, as Indian ornithologists and sportsmen have hitherto done, "Blood Pheasants"? *Perdix* is a name which in various Latin tongues (*Perdrix* in French, *Perdice* in Italian, *Perdiz* in Spanish, and *Partridge* in English) is thoroughly understood in all countries where true Partridges are found; and though in Africa it has been applied in ignorance by colonists to various Francolins, and in North America to some Grouse, it has no proper application to any member of the *Phasianinæ*; and it might easily lead American naturalists to suppose that *Ithagenes* had some resemblance in habits, plumage, or structure to the true Partridges, which so far as I know it has not. Captain Beebe's reasons for this classification, as given in the Introduction, seem to me too slight. On p. xxv he says:—"The first two groups of birds which I have included in the present work, the Blood Partridges and Tragopans, judged by the tail-moult and other characters as well, are on the Quail and Partridge side of the line, but I have included them as representing the genera most nearly allied to the Pheasants." Now it may be objected that such a trifling secondary character as the moult of the tail-feathers is not a sufficient basis on which to define the subfamily *Phasianinæ*. I should be the last to criticise such a course, because in revising the butterflies of the genus *Parnassius* (P. Z. S. 1886) I founded, on a secondary sexual character which is only developed in the act of reproduction, a new subfamily to include them; and if no better characters can be found, I see no reason to reject the classification. But with regard to the separation of the Sikkim *Ithagenes* from the one inhabiting central Nepal, which Captain Beebe has done on what I think very insufficient evidence, I entirely agree with the remarks of Mr. Stuart Baker (*Ibis*, 1915, p. 124); and with an intimate personal knowledge of the Blood Pheasant in Sikkim, I am able to

confirm his opinion, which Captain Beebe quotes without any argument to show why he dissents from it. With regard to *I. tibetanus*, it seems to me very doubtful whether Mr. Stuart Baker, who described it on a single specimen brought by Captain Molesworth, was justified in considering it as a good species, having regard to the amount of variation which exists in *I. cruentus*; and I should be disposed to reserve an opinion on these races, until a much larger series of specimens are obtained from the mountains east and north-east of Sikkim, which until Bailey and Morshead's journey (cf. Geographical Magazine, xliii. p. 184) were almost *terra incognita*, and which are likely to remain unexplored for many years, unless the policy of the Indian government in these regions is changed. Captain Beebe may retort by asking why I in 1881 founded the description of a new species of Eared Pheasant, *Crossoptilon harmani*, on a single imperfect skin; and I will confess that I would not do such a thing now. But as he has at the end of his volume treated of this variety, or local race, or species—for I care not which you call it—under the heading of “wild hybrids,” I should like to show that hybridity in this case seems impossible, and would be possible only if two species of *Crossoptilon* existed in regions near enough to each other for the two species to meet. I will not now go into details of all the points which Captain Beebe has brought forward on pp. 193–198 to support his view that *C. harmani*, *C. leucurum*, and *C. drougnii* are hybrids, but the map of Geographical Distribution of the genus opposite p. 158—though it cannot be taken as more than a suggestion based on very small knowledge of the region and even less of the birds in it—shows that *C. harmani* is the most westerly representative of the genus; and although the map, as coloured, leads one to suppose that its range is not far distant on the east from that of *C. tibetanus* or on the north from that of *C. auritum*, yet, so long as we have no evidence that these two species ever do come in contact, the question of hybridity can hardly arise. Hybrids in nature among birds are so rare, whilst intermediate forms are so common,

that the necessity for proof is increased. I should rather suggest that the variation in the plumage and number of tail-feathers in the genus, which Captain Beebe shows to exist, are analogous to the variation of colour in *Stercorarius crepidatus*, and in the male of *Machetes pugnax*; and until some proof is given that the species of this genus do meet and interbreed, I agree with Mr. Stuart Baker (*cf.* Journ. Bombay Nat. Hist. Soc. xxiv. 1916, p. 633). No doubt we shall have, when Captain Beebe comes to deal with the various races of the genus *Phasianus*, some case which will throw light on this difficult question; but except in the solitary case of the Chumba variety of the Impeyan Pheasant, which was described and accepted by such good naturalists as Marshall, Oates, and Sharpe as a distinct species, but which is now relegated to its proper place by ornithologists generally, I can think of no similar instance amongst the Phasianidæ.

Knowing as I do the great difficulties, both climatic and geographical, which are met with in observing the habits of the forest-haunting Pheasants in the dense rocky and inaccessible thickets which they love, I especially admire the skill and patience which Captain Beebe shows as a field-naturalist and observer; and the care which he has taken to select and quote from the existing accounts of the habits and life-history of the Pheasants makes his book an almost unique model for future monographers. His numerous photographs of their native haunts show great skill as a bird-watcher and add immensely to the interest and value of the work.

V.—*On the Eclipse Plumage of *Spermophila pileata*.*

By F. E. BLAAUW, M.B.O.U.

I BOUGHT a living specimen of this rare little finch in a vegetable shop in Santos in Brazil in May 1911. It had no black cap and no rosy gloss on the lower back and sides, so that I thought that it was either a young bird or a female. I was assured that it was an adult male. I bought the bird,

and took it to the ship as I was going homeward. Not many days afterwards the little bird began to sing, and shortly after I arrived in Holland it began to moult and acquired the black cap and rosy tinge on the feathers of the lower back and sides, and also the whitish cheeks. The bill also changed from yellowish horn-colour into jet-black.

After having worn this dress a few months the bird moulted again, and I was surprised to find that it again acquired the sober, nearly uniformly buff dress that it had worn when I bought it in Santos. The bill also lost its black colour.

Since that time the little bird has moulted regularly from one dress into the other, generally twice a year, the black cap and bill and other ornamental colours forming the breeding-dress. The bird is in full song then. The song is very pleasant and has some remarkable notes.

Although such a small mite, it is very aggressive, and will not suffer other birds in its cage or even in a large aviary.

VI.—*List of the Birds of the Canary Islands, with detailed reference to the Migratory Species and the Accidental Visitors.* Part 1. CORVIDÆ—SYLVIIDÆ. By DAVID A. BANNERMAN, M.B.E., B.A., M.B.O.U., F.R.G.S.

INTRODUCTION.

For several years before the war I was engaged upon a work embodying all that is known of the Birds of the Canary Islands. For this purpose I have had translated almost every foreign work bearing on the subject, in addition to which I have consulted the many English papers written by British ornithologists who have visited the islands and studied the Ornis of the Group.

Every year from 1908 to 1913 I visited the Archipelago myself and made various expeditions, both privately and on behalf of the Natural History Museum, to gain a thorough

knowledge of the birds of all the islands, preparatory to publishing a book.

In the course of these years Tenerife, Gran Canaria, Fuerteventura, Lanzarote, Graciosa, Montaña Clara, the Roque del Oeste, and Allegranza were visited and explored at different times, and many smaller expeditions were undertaken in search of birds ; eight in Gran Canaria alone.

I had still three islands to visit—Palma, Gomera, and Hierro ; but the war successfully put a stop to all ornithological work and has claimed my attention elsewhere.

Having been recently transferred for duty in England after twenty-eight months' active service with the British Red Cross Society in France, I have been able to give a certain amount of time to ornithological work, and have decided to bring out, in 'The Ibis,' the part of my work which is complete and which deals principally with the migratory birds, with special reference to those occasional and rare visitors that have wandered to the archipelago from time to time. My objects in doing so are twofold :

1. The impossibility of completing my original plans for some considerable time to come and the loss of time which would inevitably ensue before publication in a larger form could take place.
2. The hope that before the data which I have got together can be published in book form, ornithologists interested in Canarian Ornithology will correct any mistakes which they may find, add any records which I may have missed or which have not been published, and throw further light on problems which I have failed to elucidate.

The present paper professes to include all that is known of the regular Birds of Passage and of the exceptional visitors to the Canary Islands, and is a compilation of everything that has been written worthy of notice from the time of Ledru (1810) until the end of 1914.

In order that this paper may be as complete as possible, I have included in the Systematic List the Resident Birds.

These Resident species are not dealt with at any length in this paper: their life-history and habits are not given here. I include only the original reference, the type locality, their habitat in the Archipelago, and their range beyond the Canary Islands when not restricted to this group.

Good maps of the Canaries are to be found in most Atlases, and the following maps have appeared from time to time in the pages of '*The Ibis*,' viz.:—

Ibis, 1893, p. 187. Woodcut of all the Canary Islands.

Ibis, 1912, Pl. ix. facing p. 558. Double-page plate of Gran Canaria divided into faunal zones and showing all my journeys in this island.

Ibis, 1914, Pl. ii. (bound between pp. 38, 39). Double-page plate of the Eastern Group, showing route which I followed during my 1913 expedition.

Ibis, 1914, Pl. xvii. facing p. 440. Map of the Canaries showing their relation to African mainland and other Atlantic archipelagos.

So far as I am aware, all that has been published up to date (October 1918) has been included, but owing to the difficulty of consulting foreign publications I have thought it safer to give the last date upon which ornithological works were consulted and embodied as the 31st of December, 1914.

In order that no misconception may arise as to which ornithological works on the Canary Islands have been consulted and which have not, I append a short bibliography clearly setting this forth.

List of Publications

which have been consulted personally and where necessary translated * into English.

Ledru. "Voyage aux îles de Ténériffe, la Trinité, Saint Thomas, etc." (1810). Contains a list of birds observed in Tenerife. [Quoted simply as Ledru.]

* The works in French and Spanish have been translated by my wife; those in German by Miss E. Saunders and Miss Buckheim. Where any doubt arose in the latter Dr. Hartert has kindly given his verdict on technical points.

Webb, Berthelot, et Moquin-Tandon. "Ornithologie Canarienne" (1841). Part of the larger work 'Histoire Naturelle des îles Canaries,' Paris, 1836-1850. [Quoted as Orn. Canarienne.]

Bolle. "Bemerkungen über die Vögel der canarischen Inseln." Journal für Ornithologie, 1854, pp. 447-462; 1855, pp. 171-181, continuation of same paper. [Quoted as J. f. O. 1854; J. f. O. 1855.]

"Mein zweiter Beitrag zur Vogelkunde der canarischen Inseln." Journal für Ornithologie, 1857, pp. 258-292, 305-351. [Quoted as J. f. O. 1857.]

Godman. "Notes on the Resident and Migratory Birds of Madeira and the Canaries." Ibis, 1872, pp. 158-177, 209-224. [Quoted as Ibis, 1872.]

Savile Reid. "Notes on the Birds of Teneriffe." Ibis, 1887, pp. 424-435; 1888, pp. 73-83. [Quoted as Ibis, 1887; Ibis, 1888.]

Meade-Waldo. "Notes on some Birds of the Canary Islands." Ibis, 1889, pp. 1-13. [Deals with the birds of Tenerife, Gomera, and Fuerteventura.]

"Further Notes on the Birds of the Canary Islands." Ibis, 1889, pp. 503-520. [Deals with the birds of Fuerteventura, Palma, and Tenerife.]

"Further Notes on the Birds of the Canary Islands." Ibis, 1890, pp. 429-438. [Deals with the birds of Tenerife, Hierro, Lanzarote, Graciosa.]

"List of Birds observed in the Canary Islands." Ibis, 1893, pp. 185-207. [Meade-Waldo's papers are quoted as 'Ibis' with year of publication.]

Private Note-books kept from 1887 to 1890.

Tristram. "Ornithological Notes on the island of Gran Canaria." Ibis, 1889, pp. 13-32. [Quoted as Tristram, Ibis, 1889.]

"Notes on the island of Palma." Ibis, 1890, pp. 67-76. [Quoted as Tristram, Ibis, 1890.]

Cabrera (Don Anatael Cabrera y Diaz). "Catálogo de las Aves del Archipiélago Canario." Published in Anales Soc. Esp. de Hist. Nat. (Madrid), vol. xxii., 1893. [Quoted as Catálogo.]

Harris. Essays and Photographs. Some Birds of the Canary Islands and South Africa. 1901.

Hartert. "Die Fauna der Canarischen Inseln." Nov. Zool. 1901, pp. 304-335. [Quoted as Nov. Zool. 1901.]

Polatzek. "Die Vögel der Canaren." Ornithologische Jahrbuch, 1908, Heft 3, 4, pp. 81-97 (Introduction); pp. 97-119 (Resident and Breeding Birds); 1908, Heft 5, 6, pp. 162-197 (Resident and Breeding Birds, continued); 1909, Heft 1, 2, pp. 1-24 (Resident and Breeding Birds, continued); 1909, Heft 3, 4, pp. 117-134 (Birds of Passage and Exceptional Migrants); 1909, Heft 5, 6, pp. 1-8 (Supplement and concluding observations on Resident, Breeding, and also Migratory forms). [Quoted as Polatzek, Orn. Jahrb. etc.]

von Thanner*. "Observations ('Beobachtungen') on the Pine Woods of Tenerife." Ornithologische Jahrbuch, 1903, Heft 5, 6, pp. 211-217.

"Observations on Tenerife." Novitates Zoologicae, xi. 1904, pp. 430-434.

"A collecting trip ('Sammelausflug') to Fuerteventura." Orn. Jahrb. 1905, Heft 1, 2, pp. 50-66.

"Notes on Tenerife." Orn. Jahrb. 1905, Heft 5, 6, pp. 211-214.

"Some Notes on the Bird-life of Tenerife" ("Einiges über das Vogelleben Tenerifes"—a pamphlet dedicated to the guests of 'Oceana'—probably a sanatorium in Tenerife), pp. 1-4 (1906).

"A collecting trip to La Palma, Hierro, and Fuerteventura." Orn. Jahrb. 1908, Heft 5, 6, pp. 198-215.

"*Falco barbarus* in Tenerife." Orn. Jahrb. 1909, Heft 3, 4, pp. 148-150.

"Contributions to the Ornis of Gran Canaria." Orn. Jahrb. 1910, Heft 3, pp. 81-101.

"On *Fringilla teydea polatzeki*." Orn. Jahrb. 1910, Heft 6, p. 93.

"Ornithological Notes from Fuerteventura." Orn. Jahrb. 1910, Heft 6, pp. 226-229.

* The headings of all von Thanner's papers have been here translated into English; the original text is, of course, in German.

"From the Canaries." Orn. Jahrb. 1912, Heft 5, 6, pp. 221-228.

"In search of the Oyster-catcher (*Haematopus niger* Meade-Waldo)": errore, should read *Haematopus niger meadewaldoi* Bannerman. Orn. Jahrb. 1913, Heft 5, 6, pp. 189-193.

"Game Birds and Sport in the Canary Islands." Deutsch. Jäger-Zeitung, No. 36, Band 61, pp. 1-15.

Bannerman. "The Birds of Gran Canaria." Ibis, 1912, pp. 557-627.

"An Ornithological Expedition to the Eastern Canary Islands." Part i. Narrative, Ibis, 1914, pp. 38-90; Part ii. Systematic List, pp. 228-293.

"The Distribution and Nidification of the Tubinares in the North Atlantic Islands." Ibis, 1914, pp. 438-494.

Private Note-books from 1908 to 1914 (inclusive).

Koenig published a long paper on Canarian and Madeiran Ornithology in the J. f. O. 1890, pp. 257-488, which has been consulted and his notes incorporated, but which I have not yet had translated in full into English.

The following are works on Canarian Ornithology which are mentioned occasionally in the following pages, but to which I have not had access.

The title-reference is taken in each case from Hartert (Nov. Zool. 1901, pp. 333-335), where my attention was first drawn to them.

Viera y Clavijo. "Diccionario de Historia Natural de las islas Canarias." 1866 [printed from a MS. of 1799-1800].

Busto y Blanco. "Topografia medica de las islas Canarias." Sevilla, 1864. (Contains a list of 77 birds.)

Manrique Saavedra. "Elementos de Geografia é Historia Natural de las Islas Canarias." Las Palmas, 1873.

Mompo. "Catálogo de las Aves de Tenerife," published in Anales de la Soc. Española de Hist. Nat. v. 1876, pp. 242-258.

Serra y Moratin. "Ornithologia Canaria," published in Revista de Canarias, vols. i., ii., iv. 1879-1882.

All of the above five authors are cited by Cabrera in his Catálogo, which I have quoted continually.

**Itinerary of Ornithologists who have done field-work in
the Canary Islands.**

The dates when ornithologists actually worked in the islands do not necessarily agree with the dates or even the years when they published their observations, and this is often all we have to guide us as to the time when they were actually at work in the field.

These dates are important when studying the results of their work, particularly when Bird migration is under discussion.

The following is a brief record of the actual time spent in the Canaries by ornithologists who have supplied the chief records :—

Webb, Berthelot, and Moquin-Tandon.—Philip Barker Webb (1793–1854), a botanist and traveller, left Lisbon in May 1828 for Madeira. He proceeded in September 1828 to Tenerife, where he met M. Sabin Berthelot, a young Frenchman who had been nearly eight years on the island. Webb was two years in the Canaries visiting Lanzarote, Fuerteventura, Gran Canaria, and Palmas [? La Palma]. He and Berthelot collected until April 1830.

In 1833 they settled in Paris and published their great work—Moquin-Tandon working out and preparing the part on Birds, ‘Ornithologie Canarienne,’ which part was probably published in 1841.

The Webb and Berthelot collections are either in the Musée d’Histoire Naturelle in Paris or in Florence, as some of their collections appear to have been bequeathed to the Grand Duke Leopold of Tuscany.

Bolle was working in the group in 1852 and 1856, “the two visits compassing nearly two years” (*cf.* J. f. O. 1857, p. 267).

Godman was in Tenerife from March 1871 for about a month, making a short trip to Palma and Gran Canaria (*Ibis*, 1872, p. 159).

Savile Reid was in Tenerife from the end of January 1887 until the middle of April 1887 (*cf.* *Ibis*, 1887, p. 424).

Meade-Waldo was in the Canary Archipelago with two

short breaks for three years and eight months from 1887 to 1890 (*cf.* Ibis, 1893, p. 185, and MS. note-books). His observations are so important that I append an itinerary of his travels, which has never been published in detail previously. His collections, including several types, are in the British Museum (Natural History).

Tabulated Itinerary of Meade-Waldo's visits to the islands,
1887-1891.*

<i>Island.</i>	<i>Year.</i>	<i>Month and date.</i>	
Fuerteventura..	1888.	20 March	to 8 April.
	1889.	25 Feb.	to 15 March.
	1890.	11 April	to 13 April.
Lanzarote	1890.	25 March	to 5 April.
	"	9 April	to 11 April.
Graciosa	1890.	6 April	to 8 April.
Hierro	1889.	19 Nov.	to 26 Nov.
Palma	1889.	11 April	to 23 April.
Gomera	1888.	6 Feb.	to 18 Feb.
	"	6 May	to 15 May.
Tenerife	1887. (arrived from England)	†13 Oct.	to 31 Dec.
	1888.	1 Jan.	to 5 Feb.
	"	19 Feb.	to 19 March.
	"	9 April	to 5 May.
	"	16 May	to 12 June (left for England).
	" (returned from England)	18 Oct.	to 31 Dec.
	1889.	1 Jan.	to 24 Feb.
	"	16 March	to 10 April.
	"	24 April	to 18 Nov.
	"	27 Nov.	to 31 Dec.
	1890.	1 Jan.	to 24 March.
	"	14 April	to 5 June (left for England).
	" (returned from England)	6 Nov.	to 31 Dec.
	1891.	1 Jan.	to 12 June ‡ (left for England).

* Mr. Meade-Waldo has kindly revised these dates himself; hitherto they have only been partially referred to in the text of his various papers published in 'The Ibis,' where they are very difficult to follow.

† First arrived in the Archipelago.

‡ Left the islands for the last time.

Hartert visited Tenerife in 1901; he only spent a short time in the island, but during that time he had an opportunity of examining Cabrera's large collection of birds, and identified several species about which there had been a doubt.

Von Thanner lives at Vilaflor in Tenerife, and has been in residence in the Canaries since 1902 to the present time. His records of passing migrants are therefore extremely valuable and his notes are reliable. Von Thanner has travelled extensively in the Archipelago in search of birds, and visited all the islands including the outer islets. A tabulated itinerary of his travels in the group would be valuable, but I have found this impossible to compile accurately from his published papers. A short résumé is appended however, which may be better than nothing. Unfortunately his records of migrants are not very easy to follow, as they are scattered about in various papers, chiefly published in the '*Ornithologische Jahrbuch*,' and chance references to migrating birds are mixed up indiscriminately with notes on the resident birds. The habit which certain Austrian writers on ornithology have of recording birds under the vernacular name only is greatly to be deprecated.

Itinerary of von Thanner's journeys.

Tenerife. Resident here from 1902 to date. During this time the following visits* were paid to the other islands of the group in search of birds.

<i>Island.</i>	<i>Year.</i>	<i>Month, and date when known.</i>
Fuerteventura ..	1904.	End of Feb. to end of March (? 23rd)
	1905.	Mid-March (? 12th) to mid-April.
	1910.	Early Jan. to end of Feb. (? 28th).
	1912.	March to April.
Palma	1905.	Early Jan. to 8 Feb.
Hierro	1905.	8 Feb. to mid-March (? 12th).
Gran Canaria	1909.	Early Jan. to end of April.
	1912.	Beginning of May to end of May.
Lanzarote	1913.	7 May to 14 May.
Graciosa	1913.	14 May to 17 May.
Alleganza	1913.	17 May to 24 May.

* [Azores.—A special trip was made to these islands, where two months were spent in the spring of 1908 (? April and May).]

Polatzek spent over two and a half years in the islands, chiefly in the eastern group and Gran Canaria. The following itinerary has been compiled from Polatzek's narrative of his journeys:—

Tabulated Itinerary of Polatzek's visits to the islands,
1902–1904.*

<i>Island.</i>	<i>Year.</i>	<i>Month and date.</i>	
Tenerife	1902.	— Feb. †	to 26 Feb.
	"	3 Dec.	to 31 Dec.
	1903.	1 Jan.	to 20 Jan.
	"	9 June	to 11 Sept.
	1904.	1 Sept.	to 11 Sept. ‡
Lanzarote	1902.	27 Feb.	to 23 May.
Fuerteventura	1902.	23 May	to 7 July.
" Eastern islands "	1903.	21 Oct.	to 31 Dec.
(= Fuerteventura and Lanzarote, including Graciosa and outlying islets).	1904.	1 Jan.	to 8 Feb.
Gran Canaria	1902.	8 July	to 3 Dec.
	1903.	11 Sept.	to 21 Oct.
	1904.	8 Feb.	to 1 Sept.
Hierro	1903.	21 Jan.	to 24 Feb.
Gomera	1903.	24 Feb.	to 23 April.
Palma	1903.	23 April	to 9 June.

My own journeys to the Canary Islands have covered a period of six years, as I visited the Archipelago every year from 1908 to 1913.

The dates when I arrived in the islands are given in the following short itinerary. I am not, however, always certain of the date when I left.

1904. Called at Tenerife 19 January and visited Laguna, on way to West Indies.
1908. Called at Gran Canaria on 2 July and again on 19 August, when I spent the day in the Monte.
- Arrived at Gran Canaria 12 December and remained about a month, returning to England in January 1909.

* Hitherto published only in text of narrative (*cf.* Orn. Jahrb. 1908, pp. 81–97), where difficult to follow.

† First arrived in the Archipelago (actual date missing).

‡ Finally left the islands for Vienna.

1909. Arrived at Tenerife 25 March.
 Arrived at Gran Canaria 27 March and remained until 16 April.
1910. In Gran Canaria January and most of February; spent about twelve days in Tenerife in February on way to Brazil.
1911. In Gran Canaria January and February.
1912. In Gran Canaria February and March, and again at the end of May.
1913. In Gran Canaria from 22 April to 3 May.
 Fuerteventura ,, 5 May to 18 May.
 " ,, 17 June to 18 June.
 Lanzarote ,, 19 May to 27 May.
 " ,, 14 June to 16 June.
 Graciosa ,, 27 May to 7 June.
 Montaña Clara }
 and Allegranza } ,, 7 June to 14 June.
 (with Bishop). }
 Gran Canaria again ,, 18 June to 23 June.

My collections are chiefly in the British Museum, a few in Lord Rothschild's Museum at Tring, and a very few in the Edinburgh Museum.

Plan of the Paper.

As this paper is a very large one and will run through several numbers of '*The Ibis*,' I propose to give a short résumé of the arrangement which I intend to follow.

Following the plan adopted by the Committee of the new B. O. U. List of British Birds (1915), I have divided the Birds of the Archipelago into various groups—"Residents" or "Partial Residents," "Summer Visitors," "Winter Visitors," "Rare Visitors," etc. etc., and the exact meaning which I intend these terms to convey will be found on page 98, immediately preceding the first species of the Systematic List.

Then follows the Systematic List, which comprises all Resident Birds and all species and subspecies that can be considered as Authentic Migrants or Accidental Visitors.

Appendix A, which will include all birds that have been recorded on evidence which requires further proof before the species can be admitted to the list of authentic occurrences.

Appendix B, which will include all species and subspecies that have been recorded from unreliable sources and can

be dismissed as absolutely valueless, though often quoted by more recent writers without additional proof.

Again following the plan of the new B. O. U. List, I have included a tabulated list of species which fall under the various headings under which the "Residents," "Migrants," and "Visitors" are arranged. It will show at a glance which species are considered Occasional Visitors, Rare Visitors, Birds of Passage, etc. etc., without having to look up each individual species in the systematic list.

I have taken special care to note which species I have identified and handled personally, and failing this to mention the authority responsible for the bird's inclusion in the authentic list.

Lastly, I have determined not to enter into any discussion of the various points which may arise bearing on the distribution of the resident forms or on migratory problems of the Canary Islands until each species has been fully dealt with in the pages of 'The Ibis.' It is, I know, usual to begin an ornithological paper by summing up the conclusions reached by the writer, but in this case the material upon which my deductions are based would not have appeared in print and would therefore not be available for reference.

Distribution, etc.

The distribution of each species beyond the Canary Islands is given very briefly in each case, as in a paper which deals largely with migration it is an all important point to know the approximate range of the bird under discussion. In this connection I have particularly made use of the B. O. U. List of British Birds (1915), the 'Hand List of British Birds' by Messrs. Hartert, Witherby, Ticehurst, and Jourdain, and, as a final reference, Hartert's 'Die Vögel der paläarktischen Fauna.' I am very much indebted to Dr. Hartert for allowing me access to some of his still unpublished manuscript.

I have not attempted to give the life-history of the Partial Residents or of the Summer Visitors who breed in the Archipelago, but have only dealt with them from the point of view of their migrations.

I have already noted the brief way I intend to deal with the Resident Birds. Their habitat in the Archipelago will be divided under three headings :—

WESTERN GROUP, which comprises the islands of Gran Canaria, Tenerife, Palma, Gomera, and Hierro.

EASTERN GROUP, which includes the islands of Fuerteventura and Lanzarote ; and also the

OUTLYING ISLETS, which comprise Lobos, Graciosa, Montaña Clara, Allegranza, Roque del Oeste, and the Roque del Este.

Thirteen islands in all, seven large and six small, including the two rocks.

Nomenclature and References.

In the vexed question of Nomenclature I have followed, where the species occurs in both the British and Canarian List, as nearly as possible* the names used by the Committee which drew up the last B. O. U. List, but I have broken away from their ruling on two important points.

1. I have used trinomials throughout the paper and have reduplicated the specific name in every case where I know I am dealing with the typical form, except where the typical species is the only race known.
2. I have not accepted any of the "nomina conservanda" proposed by the Committee ; for this I have no doubt I shall be severely criticised, but I am none the less certain that when the next B. O. U. List appears these "nomina conservanda" will have to go.

Instead of the "N. C." retained by the Committee I have used the alternative "names under the code" which they give in the second column of Appendix II. on p. 355 of the List, and which conform to the rules of nomenclature as drawn up by the International Congress of Zoology.

If no doubt remains as to which species or subspecies

* In one or two cases I have maintained subspecies which the Committee have not accepted, *i. e.* *Corvus monedula spermologus*.

occurs in the Archipelago, the original reference and the type locality of the bird are given in every instance.

In a case where any doubt exists as to which race occurs in the Canaries, I have used binomial nomenclature, and then no original reference is given.

On the other hand, if the evidence points strongly to a particular subspecies occurring in the Archipelago, but still a doubt exists, I have included the bird under the binomial name, but added the trinomial designation of the probable subspecies to which it belongs in square brackets immediately beneath the binomial name, and have then given the original reference and type locality of this race (*e. g.* in this part under *Emberiza calandra*, *Motacilla flava* and *M. cinerea*).

Throughout the entire Systematic List and Appendix A I have taken considerable pains to state in every instance from whom or from what writings I have obtained my information. Every record and every quotation has an original reference attached, so that no difficulty should be experienced by those who wish to check my work in the future.

Acknowledgments.

To Lord Rothschild and Dr. Hartert I owe a sincere debt of gratitude for their kindness to me while working through the fine Canarian material at the Tring Museum.

Likewise am I indebted to Mr. Chubb and Mr. Wells for their great help at the British Museum (Natural History); to Mr. Iredale for considerable assistance in the literature of the subject; and last, but not least, to Mr. W. L. Sclater for his unfailing kindness and advice.

It must be remembered that this paper is but largely a compilation from every available source of knowledge, and that without the field and systematic work of many ornithologists who have given months and sometimes years to their subject, such a list as this could never have been attempted.

If this list does what I have set out to accomplish and brings our knowledge of the Birds of the Canary Islands right up to date, the credit lies entirely with those ornithologists who have laboured so untiringly in the past on the

Ornis of this group, the results of whose work I have here attempted to collaborate.

It is at any rate the first complete List of the Birds of the Canary Islands which has ever appeared in the English language, though Meade-Waldo's list published in 1893, comprising only birds which came under his own notice, came very near to accomplishing this end.

Terms to be used.

Residents. Birds generally found in the Canary Islands throughout the year are included in this category; it includes those which regularly breed in the Archipelago and which are not migratory in any way except perhaps between the islands.

Partial Residents. Birds which are usually resident and breed in the islands, but which have their numbers augmented by fresh arrivals at certain seasons.

Summer Visitors. Birds which are found nesting regularly in the Canary Islands, but do not remain throughout the winter in the Archipelago.

Winter Visitors. Birds found in the Canary Islands during the winter only, and which have only exceptionally been known to breed in the Archipelago.

Birds of Passage. Birds which pass regularly through the islands during the spring and autumn migration periods.

Annual Visitors. Birds which visit the Archipelago annually but at no fixed season of the year and which have not been known to breed in any of the islands.

Occasional Visitors. Birds which do not occur regularly in the Archipelago every year but which have been recorded from time to time, almost invariably during the migration period. None have been known to breed in the islands.

Rare Visitors. Birds which have occurred in the islands on two or three occasions only, sometimes singly after violent storms, but usually in company with other species during migration.

Systematic List of Species.

Family CORVIDÆ.

Corvus corax. Raven.

A Resident species.

Habitat in Archipelago.

Western Group: Tenerife, Gran Canaria, Palma, Gomera, Hierro.

Eastern Group: Fuerteventura, Lanzarote.

Outer islets: Allegranza, Montaña Clara.

Obs. I have not yet decided whether the Canarian Raven is distinct from the form found on the mainland. The Canarian bird has been named *Corvus corax canariensis* Hartert & Kleinschm. (Nov. Zool. 1901, p. 45—Type locality: Palma). The African species to which I have hitherto united it is *Corvus corax tingitanus* Irby (Ibis, 1874, p. 264—Type locality: Tangier, Morocco).

Range beyond the Archipelago.

C. c. canariensis does not occur.

C. c. tingitanus: Tunis to Morocco south west to Mogador and Casablanca.

Corvus monedula spermologus. West European Jackdaw.

Corvus spermologus Vieillot, Nouv. Dict. d'Hist. Nat. viii. 1817, p. 40—Type locality: south of France.

A very Rare Visitor to these islands, which are far beyond the usual range of this species. The form which is here dealt with is doubtless *Corvus monedula spermologus* if recognized as distinct from *C. m. monedula*.

The Jackdaw has only been recorded once, by Webb & Berthelot who wrote (Orn. Canarienne, p. 10) that a single specimen of *Corvus monedula* was killed at Laguna (Tenerife) after a very strong south-east gale in February 1830, the only one (as they mention) seen in ten years.

Bolle also mentions this bird in his first list (J. f. O. 1854, p. 451).

This is probably a perfectly authentic record. The bird is said to have also occurred in Algeria and Morocco.

Range. The Jackdaw is a typically European species of which two or three forms have been recognized. *C. m. spermologus* is the form found commonly in west, central, and parts of south Europe.

Pyrrhocorax pyrrhocorax. Red-billed Chough.

Upupa pyrrhocorax Linn. Syst. Nat. 10th ed. 1758, p. 118—Type locality : coasts of England.

A Resident species.

Hab. in Archipelago.

Western Group : Palma.

Obs. Confined to this island.

Range beyond the Archipelago.

Northern Asia, northern Africa, Mediterranean countries, western France, Great Britain.

Family STURNIDÆ.

Sturnus unicolor. Sardinian Starling.

Sturnus unicolor Temm. Man. d'Orn. 1820, p. 133—Type locality : Sardinia.

A very Rare Visitor to the islands.

Cabrera killed (*recogido*) an example of this Starling in Laguna, and this is the only record (*vide* Catálogo, 1893, p. 49) of this species having occurred in the Canaries.

Range. The Sardinian Starling inhabits the Mediterranean countries, Spain, Morocco, and Tangier.

Sturnus vulgaris vulgaris. Starling.

Sturnus vulgaris Linn. Syst. Nat. 10th ed. 1758, p. 167—Type locality : Sweden.

From the reports of former naturalists the Starling appears to be a **Bird of Passage** to the Canaries, and in certain islands of the group a **Winter Visitor** in small numbers.

I have never seen the bird alive myself, though I have spent many months in the island of Gran Canaria and paid visits to most of the other islands.

Von Thanner does not record the Starling from Tenerife or elsewhere, although he has been writing on the birds of these islands since 1903. This is very curious.

I give herewith the opinions of the authorities mentioned above:—

Ledru (1810). Noted it in his List of the Birds of Tenerife.

Webb & Berthelot (1841, p. 11). "Arrives sometimes in winter with the Thrushes, but never in great flocks. It is usually in the pine-region that one meets with some."

Bolle (J. f. O. 1854, p. 452). "Seen every winter in the pine forests of Tenerife; also now and again in Fuerteventura, where it is rare."

Koenig (J. f. O. 1890, p. 354). "The Common Starling was not met with by myself in Tenerife, but I believe from examples in the possession of Don Ramon [Gomez—the Orotava chemist] that it is a fairly regular visitor to Tenerife. Possibly it does not appear every year."

Meade-Waldo (Ibis, 1893, p. 194). "A regular winter visitor, but in no great numbers, to all islands." He notes that Common Starlings frequented the cactus fields in Fuerteventura in February 1889 (Ibis, 1889, p. 507).

[He saw a flock at Tuineje, Fuerteventura, on 2 March, 1889 (extract from private diary), and shot a specimen which I have examined in the British Museum.—D. A. B.]

Cabrera (Catálogo, 1893, p. 48). "Met with on passage every year in the autumn."

[There are specimens in the Cabrera collection preserved at Laguna.—D. A. B.]

Hartert (Nov. Zool. 1901, p. 305) quotes Meade-Waldo (*supra*), and adds:—"If it really comes across from the African continent as Koenig (from the reports of others) affirms, it is, in spite of that, a European migratory bird, for only *Sturnus unicolor* breeds in Morocco."

Polatzek (Orn. Jahrb. 1909, p. 122). "Annually in autumn; appears also in the eastern islands, where I have observed it."

Bannerman (Ibis, 1914, p. 62). Saw one in the Gonzalez collection at Arrecife, Lanzarote, which had been shot recently near that town.

Range. The Starling breeds in Europe generally and migrates in winter to north Africa, the Canary Islands being the most southerly point from which it has been recorded.

Family ORIOLIDÆ.

Oriolus oriolus oriolus. Golden Oriole.

Coracias oriolus Linn. Syst. Nat. 10th ed. 1758, p. 107—
Type locality: Finland.

The Golden Oriole is an **Occasional Visitor** to the Canary Islands, especially during the spring migration. It cannot be considered a very regular visitor, however, even in the spring, and although it must occasionally pass through the islands in autumn none have been recorded as yet. In the spring of certain years the Golden Oriole is fairly numerous, especially in Tenerife, but in other years it is rarely noticed.

The following are dates upon which it has been recorded:—

- 25 April, 1890. Several seen in Tenerife in small parties. (Meade-Waldo, Ibis, 1890, p. 429.)
 Spring. Several shot round Laguna, Tenerife. (Cabrero, Catálogo, p. 46.)
 April 1902. One seen in Lanzarote. (Polatzek, Orn. Jahrb. 1909, p. 122.)
 2 May, 1911. One bird * [♀] at Vilaflor, Tenerife. (von Thanner, Orn. Jahrb. 1912, p. 227.)
 24 April, 1913. A bird † on migration, Vilaflor. (von Thanner, Orn. Jahrb. 1913, p. 193.)
 26 April, 1913. A female seen in Gran Canaria. (Bannerman, MS. note-books.)

All observers record having found the bird an irregular, but occasionally numerous, spring visitor.

Range. The Golden Oriole has an extensive distribution, breeding throughout Europe and western Asia and locally in northern Africa. It winters in tropical and southern Africa.

* Here recorded under the vernacular name only—"Pirol"

† Recorded as "Goldamsel."

Family FRINGILLIDÆ.

Chloris chloris aurantiiventris. Golden-bellied Greenfinch.

Ligurinus aurantiiventris Cabanis, Mus. Hein. i. 1850, p. 158—Type locality : south France.

This is a **Rare Visitor** to the islands.

The Greenfinch is mentioned by both Ledru in 1810 and Serra in 1882, but little reliance can be placed on their lists.

Bolle's evidence is likewise impossible to accept, for although he includes *Chlorospiza chloris* Bonap. in his last paper (J. f. O. 1857, p. 317) he has obviously never seen the bird in the Canary Islands, and quotes contradictory statements made to him by natives.

Cabrera (Catálogo, 1893, p. 50) supplies the first genuine record, as he had a specimen which was shot at Tegueste (Tenerife).

Von Thanner heard and saw a Greenfinch in Tenerife on 21 November, 1907 (Orn. Jahrb. 1908, p. 214), recorded it as *Ligurinus chloris*, and later shot one at Moya in Gran Canaria on 12 April, 1909, which he recorded in the 'Ornithologische Jahrbuch,' 1910, p. 86 as *Chloris aurantiiventris*.

Range. The Golden-bellied Greenfinch breeds in southern France, Spain, Morocco, Algiers, and Tunis. It has occurred accidentally in the Azores. Hartert found it breeding in Algeria in May 1914 at Laghouat (Nov. Zool. xxii. 1915, p. 65).

Carduelis carduelis parva. Least Goldfinch.

Carduelis carduelis parva Tschusi, Orn. Monatsb. ix. 1901, p. 131—Type locality : Madeira.

A Resident subspecies.

Hab. in Archipelago.

Western Group : Gran Canaria, Tenerife, Palma, Gomera, Hierro.

Eastern Group : Fuerteventura.

Range beyond the Archipelago.

Madeira and the Azores.

Serinus canarius. Canary.

Fringilla canaria Linn. Syst. Nat. 10th ed. 1758, p. 181—

Type locality : Canary Islands.

A Resident species.

Hab. in Archipelago.

Western Group : Gran Canaria, Tenerife, Palma, Gomera, Hierro.

Range beyond the Archipelago.

Madeira and the Azores.

Erythrospiza githaginea amantum. Canarian Trumpeter Bullfinch.

Erythrospiza githaginea amantum Hartert, Vög. pal. Faun. i. 1903, p. 89—Type locality : Fuerteventura.

A Resident subspecies.

Hab. in Archipelago.

Western Group : Gran Canaria, Tenerife.

Eastern Group : Fuerteventura, Lanzarote.

Outer islets : Graciosa, Allegranza.

Range beyond the Archipelago.

Does not occur.

Passer hispaniolensis hispaniolensis. Spanish Sparrow.

Fringilla hispaniolensis Temminck, Man. d'Orn. 1820, pt. i. p. 353—Type locality : Gibraltar.

A Resident species.

Hab. in Archipelago.

Western Group : Gran Canaria, Tenerife.

Eastern Group : Fuerteventura, Lanzarote.

Range beyond the Archipelago.

Northern Africa, south to Morocco, east to Egypt and Sinai. Balkan States. Spain, Cape Verde Islands.

Obs. Tschusi has separated and described the Canarian Spanish Sparrow, which he calls *P. h. canariensis* (Orn. Jahrb. xxiv. 1914, p. 54).

Petronia petronia madeirensis. Madeiran Rock-Sparrow.

Petronia petronia madeirensis Erlanger, Journ. für Orn. 1899, p. 482, pl. xiii. fig. 4—Type locality : Madeira.

A Resident subspecies.

Hab. in Archipelago.

Western Group: Gran Canaria, Tenerife, Palma, Gomera, Hierro.

Range beyond the Archipelago.

Madeira.

Montifringilla nivalis nivalis. The Snow-Finch.

Fringilla nivalis Linn. Syst. Nat. 12th ed. 1766, p. 321—Type locality : America, *errore* ; Switzerland accepted.

A Rare Visitor to the Canary Islands.

There is only one apparently genuine record of the Snow-Finch from the Archipelago. Moquin-Tandon, Webb, and Berthelot (Orn. Canarienne, 1841, p. 22) note that a specimen was shot at Orotava in Tenerife by Mr. A. Diston, and although the skin seems to have disappeared, we have no valid reason to doubt the accuracy of this record. It is, however, a very remarkable occurrence. Webb and Berthelot undoubtedly mean the Snow-Finch and not the Snow-Bunting, as they give the original reference "*Fringilla nivalis* Linn. Syst. Nat. i. p. 321," and also quote "Le Pinson de neige ou Niverolle, Buff. Ois. iv. pag. 136." They also give a short description of both the bird, nest and egg. Of its occurrence in the Canary Archipelago they remark, "De passage accidentel, tué une seule fois, à l'Orotava par M. A. Diston."

Webb and Berthelot's record is quoted by both Cabrera and by Polatzek, Cabrera erroneously stating (Catálogo, p. 50) that he had obtained an example himself from Punta del Hidalgo, whereas in reality this bird was the Snow-Bunting, as pointed out by von Thanner (Nov. Zool. 1904, p. 431) and Polatzek (Orn. Jahrb. 1909, p. 127).

Range. The Snow-Finch inhabits the high Alps, the Pyrenees, Apennines, and the Sierra Nevada in southern Spain.

Fringilla cœlebs canariensis. **Canarian Chaffinch.**

Fringilla canariensis Vieillot, Nouv. Dict. d'Hist. Nat. xii. 1817, p. 232—Type locality : Tenerife.

A Resident subspecies.

Hab. in Archipelago.

Western Group : Tenerife, Gran Canaria, and Gomera.

Range beyond the Archipelago.

Does not occur.

Fringilla cœlebs palmæ. **Palman Chaffinch.**

Fringilla palmæ Tristram, Ann. & Mag. Nat. Hist. (6) iii. 1889, p. 489—Type locality : Palma.

A Resident subspecies.

Hab. in Archipelago.

Western Group : Palma.

Obs. Confined to this island.

Range beyond the Archipelago.

Does not occur.

Fringilla cœlebs ombriosa. **Hierran Chaffinch.**

Fringilla cœlebs ombriosa Hartert, Bull. B. O. C. xxxiii. 1913, p. 78—Type locality : Hierro.

A Resident subspecies.

Hab. in Archipelago.

Western Group : Hierro.

Obs. Confined to this island.

Range beyond the Archipelago.

Does not occur.

Fringilla teydea teydea. **Teydean Blue Chaffinch.**

Fringilla teydea Moquin-Tandon in Webb and Berthelot, Orn. Canarienne, 1841, pl. 1, p. 20—Type locality : Tenerife.

A Resident species.

Hab. in Archipelago.

Western Group : Tenerife.

Obs. Confined to this island.

Range beyond the Archipelago.

Does not occur.

Fringilla teydea polatzeki. Polatzek's Blue Chaffinch.

Fringilla teydea polatzeki Hartert, Orn. Monatsb. 1905, p. 164—Type locality: Gran Canaria.

A **Resident** subspecies.

Hab. in Archipelago.

Western Group: Gran Canaria

Obs. Confined to this island.

Range beyond the Archipelago.

Does not occur.

Acanthis cannabina meadewaldoi. Meade-Waldo's Brown Linnet.

Acanthis cannabina meadewaldoi Hartert, Nov. Zool. 1901, p. 323—Type locality: Tenerife.

A **Resident** subspecies.

Hab. in Archipelago.

Western Group: Gran Canaria, Tenerife, Palma, Gomera, Hierro.

Range beyond the Archipelago.

Does not occur.

Acanthis cannabina harterti. Hartert's Brown Linnet.

Acanthis cannabina harterti Bannerman, Bull. B. O. C. xxxiii. 1913, p. 39—Type locality: Lanzarote.

A **Resident** subspecies.

Hab. in Archipelago.

Eastern Group: Fuerteventura, Lanzarote.

Outer islets: Graciosa, Allegranza.

Range beyond the Archipelago.

Does not occur.

Emberiza calandra. Corn-Bunting.

[or **Emberiza calandra thanneri.**]

[*Emberiza calandra thanneri* Tschusi, Orn. Jahrb. 1903, p. 162—Type locality: Tenerife.]

A **Resident** bird in certain islands of the Archipelago.

Western Group: Gran Canaria, Tenerife, Palma, Gomera, Hierro.

A **Summer Visitor** in the Eastern Group: Fuerteventura and Lanzarote.

This species is named binominally as I am not yet quite sure to which form it should be assigned. As Tschusi has actually named the Canarian Corn-Bunting *E. c. thanneri*, it may simplify matters to accept this name for what is undoubtedly a resident breeding-bird in all the western islands of the Archipelago. Whether the Corn-Buntings in the eastern islands are best considered Partial Residents or Summer Visitors it is most difficult to say.

The small, light-breasted birds which I collected on the coasts of Gran Canaria add to the difficulties. I believe it to have been a migrant, and if that was so, and these visitors breed with the island form, it may account for the variability of the Canarian Corn-Buntings and my difficulty in separating them from typical examples. Certainly the evidence at present available points to the Corn-Bunting being resident in the western islands, many visiting the eastern islands in summer.

I gave the matter a great deal of attention in 1913-14, and my remarks will be found in 'The Ibis,' 1914, pp. 240-243, which had better also be consulted.

I quite realize that the question was left in an unsettled state, and that it is not even now cleared up satisfactorily.

Briefly my conclusions were as follows, except that I now believe it will simplify matters to accept *E. c. thanneri* as valid:—

1. That there is a resident race of Corn-Bunting confined to the high ground in the western islands of the group, named by Tschusi *E. c. thanneri* (*cf.* Orn. Jahrb. 1903, p. 162—Type locality: Tenerife), dark-breasted and large in size (wings 92-102 mm.), which it is difficult to distinguish from typical *E. c. calandra*, and which when I wrote on this bird in 1914 I did not separate.
2. That there is a Corn-Bunting to be found in the island of Gran Canaria, confined to the coastal region, light-breasted and small in size (wings 85-90 mm.), which appears to arrive in the island in February. This bird does not agree with *E. c. thanneri*.

3. That in the eastern islands (Fuerteventura and Lanzarote) the Corn-Bunting, according to Polatzek (Orn. Jahrb. 1908, p. 196), who lived there for some time, is a summer visitor * only, apparently arriving about February, breeding in March and April, and leaving both islands after the harvest, to return again in the spring. Whether these summer visitors to the eastern islands come from the western islands of the group or whether from Europe or Africa, is still wrapt in mystery.

Range. *Emberiza calandra calandra* (the typical form) breeds throughout Europe and in north Africa. It does not appear to range farther south in winter than Nubia and Arabia. The *resident* form in the Canaries which has been named *E. c. thanneri* is not recognized from anywhere outside the Canary group.

***Emberiza striolata sahari.* Saharan Bunting.**

Emberiza sahari Levaillant, jun., Expl. scient. de l'Algérie, Atlas, Ois. 1850, pl. ix.^{bis} fig. 2—Type locality: Algiers.

A Rare Visitor.

Cabrera (Catálogo, 1893, p. 51) notes that he possesses an example killed at Punta del Hidalgo in Tenerife.

Range. The Saharan Bunting inhabits Tunisia, Morocco, and Algiers.

***Plectrophenax nivalis.* Snow-Bunting.**

Emberiza nivalis Linn. Syst. Nat. 10th ed. 1758, p. 176—Type locality: Lapland.

A Rare Visitor to the Canary Islands.

There is only one record of the Snow-Bunting having occurred in the Archipelago.

* During my 1913 expedition, when I was in the eastern Canary group from 5 May to 17 June, I only met with this bird once—a specimen of the large dark-breasted race (Ibis, 1914, p. 241). This may have been due to the exceptionally cold and stormy weather experienced at the time.

It is first recorded by Cabrera (Catálogo, p. 50), who says he had a specimen which was shot at Punta del Hidalgo. Unfortunately he records it under the erroneous name *Montifringilla nivalis* Briss., which is the Snow-Finch and not the Snow-Bunting.

Von Thanner (Nov. Zool. 1904, p. 431), under the heading *Passerina nivalis*, notes that there is a specimen of this bird in the Instituto at Laguna*. (*P. nivalis* is, of course, the Snow-Bunting.)

Polatzek (Orn. Jahrb. 1909, p. 127) adds that Cabrera's* bird was examined by him in the Museum at Laguna and is a male of *Calcarius nivalis*, i.e. *Plectrophenax nivalis*, the Snow-Bunting.

Range. The Snow-Bunting breeds in the Arctic regions and winters as far south as the Mediterranean. It occasionally ranges to North Africa, and has also been recorded from the Azores.

Family ALAUDIDÆ.

Alauda arvensis arvensis. Sky-Lark.

Alauda arvensis Linn. Syst. Nat. 10th ed. 1758, p. 165—
Type locality : Sweden.

The Sky-Lark is a **Winter Visitor** to Tenerife in small numbers, and a **Bird of Passage** in spring and autumn to certain of the other islands, remaining sometimes for two or three weeks ; chiefly noted on passage in the eastern group, but also recorded from Gran Canaria.

In Tenerife it occurs, according to Cabrera (Catálogo, p. 52), in the months of October, November, and December on the Laguna plains, where Meade-Waldo saw one which he failed to procure on the 3rd of December, and shot one on the 5th of December, 1888 (see his MS. diaries) ; this last I have examined in the British Museum. Meade-Waldo found it to be not rare in winter on the Laguna plains (Ibis, 1889, p. 515 ; 1893, p. 194).

* After his death, Cabrera's collection was housed in the Instituto of Laguna.

In the eastern group Polatzek records two big flights which came to Haria in Lanzarote on the 15th of November, and which remained in the neighbourhood for a fortnight, when all disappeared save twenty birds (Orn. Jahrb. 1909, p. 126). These birds, Polatzek says, were very dark-coloured. I have not seen any examples which he may have obtained, but there is little doubt that the birds belonged to the typical form, the north-west African subspecies *A. a. harterti* Whitaker (Terra typica: Tunisia) being browner in coloration and having a longer bill.

In the spring several specimens have been recorded by von Thanner: two from Gran Canaria on 25 February, 1909, and six from the same island on 1 March, 1909 (Orn. Jahrb. 1910, p. 86); also several seen in Fuerteventura on 26 February, 1910 (Orn. Jahrb. 1910, p. 229).

A. arvensis is mentioned by Ledru (1810), Webb and Berthelot (1841), and other Spanish writers, but little reliance can be placed on these early records.

Prior to Meade-Waldo's sojourn in the Archipelago all naturalists appear to have confused the Short-toed Larks (*Calandrella*) of the islands with the typical European Sky-Lark (*Alauda*).

Range. *Alauda a. arvensis* breeds over a great part of Europe and winters mainly in North Africa. In West Africa it probably extends in winter farther south than is generally supposed; otherwise I am at a loss to account for its regular occurrence in the Canary Archipelago.

Although there are examples from Tangier, Algeria, and Tunisia in the British Museum, there are none from West Africa. There is, however, a single specimen from Madeira, which was obtained on 9 November, 1893.

In the Tring Museum, however, I have examined skins from Mogador (Nov.), Mazagan (Jan. & Feb.).

Calandrella minor rufescens. Tenerife Short-toed Lark.

Alauda rufescens Vieillot, Tabl. Enc. et Méth. i. 1820. p. 322—Type locality: Tenerife.

A **Resident** subspecies.

Hab. in Archipelago.

Western Group : Tenerife.

Obs. Confined to this island.

Range beyond the Archipelago.

Does not occur.

Calandrella minor polatzeki. Polatzek's Short-toed Lark.

Calandrella minor polatzeki Hartert, Vög. pal. Faun. i. 1904, p. 217—Type locality : Lanzarote.

A **Resident** subspecies.

Hab. in Archipelago.

Western Group : Gran Canaria.

Eastern Group : Fuerteventura, Lanzarote.

Range beyond the Archipelago.

Does not occur.

Obs. The Short-toed Lark of Gran Canaria has been separated and named by Sassi *C. m. distincta* (Orn. Jahrb. 1908, p. 30).

Melanocorypha calandra calandra. Calandra Lark.

Alauda calandra Linn. Syst. Nat. 12th ed. 1766, p. 288—Type locality : Pyrenees.

A **Rare Visitor.**

There is only one record of this species having been taken in the Canary Islands. This specimen was shot at Laguna and examined by Meade-Waldo, who included it in his list (Ibis, 1893, p. 194). The Calandra Lark is a favourite cage-bird in Spain ; it is therefore possible that the specimen here recorded may have been an "escape."

Range. The Calandra Lark is an inhabitant of southern Europe and northern Africa, where it breeds in Morocco, Tunisia, and Algeria, in the last-named province occurring as far south as Biskra and Laghouat (Nov. Zool. 1911, p. 485). In the Tring Museum I have examined six specimens from Mazagan, the most southern place from which it has been recorded.

Family MOTACILLIDÆ.

Motacilla cinerea (= *M. boarula* auct.): Grey Wagtail.

[or *Motacilla cinerea canariensis*.]

[*Motacilla boarula canariensis* Hartert, Nov. Zool. viii. 1901, p. 322—Type locality: Tenerife.]

A **Resident** subspecies.

Hab. in Archipelago.

Western Group: Gran Canaria, Tenerife, Palma.

Range beyond the Archipelago.

Does not occur.

Another subspecies, *M. c. schmitzi*, is found in Madeira and the Azores.

Obs. Hartert no longer keeps up this subspecies, and provisionally unites it with typical *M. c. cinerea*, the European bird (see Vög. pal. Faun. i. p. 299). I am not satisfied with this decision and prefer to keep it separate, and have therefore treated it in the same way as I have done the Corn-Bunting—heading it binomially, and giving beneath the heading the subspecific name which I think it will eventually have to bear.

Motacilla alba alba. White Wagtail.

Motacilla alba Linn. Syst. Nat. 10th ed. 1758, p. 185—Type locality: Sweden.

The White Wagtail is an irregular **Winter Visitor** in small numbers, but a regular **Bird of Passage** in early spring to the Canaries.

This Wagtail has been noted in the Canary Islands by Webb and Berthelot, Bolle, Meade-Waldo, Cabrera, Polatzek, von Thanner, and myself.

I do not believe that the White Wagtail remains for long in any of the islands during migration. A summary of the records where dates have been supplied shows that it appears first in January and passes through in very small numbers until March, after which month it is not usually seen until

the following year. It may in certain years arrive earlier in the islands and remain during the winter, but dates are wanting to prove this.

The following are a few records with dates :—

1890-91.	—	Exceedingly numerous in the winter. (Meade-Waldo, Ibis, 1893, p. 190.)
1910.	January.	One seen early in the month. Las Palmas, Gran Canaria. (Bannerman, Ibis, 1912, p. 607.)
1910.	13 January.	Two seen. Las Palmas, Gran Canaria. (Bann., Ibis, 1912, p. 607.)
1910.	February.	Solitary pairs appeared during the whole month. Fuerteventura. (von Thanner, Orn. Jahrb 1910, p. 229.)
1911.	28 February.	One bird seen. Gran Canaria. (Bann., Ibis, 1912, p. 607.)
1912.	February.	One bird seen in the middle of the month. Gran Canaria. (Bann., Ibis, 1912, p. 607.)
1912.	February.	A pair seen later in the month. Gran Canaria. (Bann., Ibis, 1912, p. 607.)
1889.	1 March.	One bird shot. Tuineje, Fuerteventura. (Meade-Waldo, Ibis, 1889, p. 509.)
1904.	From end of Feb. until 11 Mar.	Seen frequently. Fuerteventura. (von Thanner, Orn. Jahrb. 1905, p. 65.)

Von Thanner considered it a regular Bird of Passage as early as 1904 (Nov. Zool. xi. p. 431). According to Polatzek it visits all the islands in winter, but by "winter" he may mean January and February (Orn. Jahrb. 1909, p. 126).

It is noteworthy that in the winters of 1890 and 1891, which years were quite phenomenal as regards migration, the White Wagtail was "exceedingly numerous" (Ibis, 1893, p. 190). It certainly can never be called numerous at the present day, and it is seldom that more than a pair are seen together. This does not point to a regular stream of migrants passing through the islands regularly, and it would certainly appear that the birds do not usually touch the Archipelago in their autumn journey to their winter quarters.

Range. *Motacilla a. alba* is distributed in summer throughout the greater part of Europe and winters in Africa, extending as far south as the Equator on the east coast and,

according to Hartert, to the Niger on the west. It is doubtless some of these Hausaland birds that touch at the Canaries in early spring on their way to their breeding quarters in Europe.

Specimens in the British Museum from West Africa were obtained on the Gambia river (December), Dakar (October), and in the north from Morocco (January). There are numerous examples collected in every month from November to March from northern and eastern Africa as far south as British East Africa.

Motacilla flava. Blue-headed Wagtail.

[? **Motacilla flava flava.**]

[*Motacilla flava* Linn. Syst. Nat. 10th ed. 1758, p. 185—
Type locality : Sweden.]

A Rare Visitor.

This species is intentionally named binomially. Until specimens are collected it is impossible to be certain to which form these migrants belong. Probably they will prove to be the typical form.

Tschusi (Orn. Jahrb. 1903, p. 176) records a bird as *Budytes flavus* as having been shot on 1 May [in Tenerife], reported to him by von Thanner in a letter dated 30 June [1903].

Polatzek (Orn. Jahrb. 1909, p. 126) remarks that he saw a few solitary examples of "*Budytes flavus*" (Linn.) in Fuerteventura * and Lanzarote *.

Messrs. Webb & Berthelot in their book (Orn. Canarienne) and Bolle in his first paper (J. f. O. 1854, p. 455) mistook the Canarian Grey Wagtail (*M. cinerea canariensis*) for this species. Bolle subsequently corrected his mistake (J. f. O. 1857, p. 286).

Polatzek has not fallen into this error, however, and knew the Canarian Wagtail intimately. We have no reason, therefore, to doubt his record (*supra*).

* The resident Canarian Wagtail is not found on either of these islands during any part of the year.

Range. The typical Blue-headed Wagtail breeds in Europe and winters in tropical and South Africa. Various forms have been recognized from the Mediterranean countries.

Anthus bertheloti bertheloti. Berthelot's Pipit.

Anthus berthelotii Bolle, Journ. für Orn. 1862, p. 357—

Type locality : Canary Islands.

A Resident species.

Hab. in Archipelago.

Western Group: Gran Canaria, Tenerife, Palma, Gomera, Hierro.

Eastern Group: Fuerteventura, Lanzarote.

Outer islets: Graciosa, Montaña Clara, Allegranza.

Obs. The Pipit inhabiting the Eastern Group has been named *A. b. lanzaroteæ* by Tschusi and Polatzek (Orn. Jahrb. 1908, p. 191).

Range beyond the Archipelago.

Does not occur.

Another subspecies is found in Madeira and Porto Santo.

Anthus trivialis trivialis. Tree-Pipit.

Alauda trivialis Linn. Syst. Nat. 10th ed. 1758, p. 166—

Type locality : Sweden.

The Tree-Pipit must be considered a regular spring and autumn Bird of Passage to the Canary Archipelago, never remaining for very long in any of the islands.

The earliest date upon which spring migrants have been reported is 16 February (von Thanner), and birds continue to pass during March and April, the latest record being on the 11th of May.

The return migration in autumn begins in September, the first recorded date being the 29th (von Thanner), and birds have been recorded as passing until the 20th of October (von Thanner).

Bolle seems to have been the first to notice this species in the islands, and wrote in the J. f. O. 1857, p. 289 : "*Anthus arboreus* Bechst. is to be found sitting on the tops of young

trees at Chasna * in April." Bolle's notes in J. f. O. 1854, p. 455, under *Anthus trivialis*, he later (J. f. O. 1857, p. 289) states refer to *Anthus campestris*, but he appears to have confused the bird with *Anthus bertheloti*! Curiously enough Meade-Waldo only saw two examples during the three years (1887-90) which he spent in the Canaries (Ibis, 1893, p. 191). One of these was probably the bird that found its way into the Cabrera collection (Ibis, 1889, p. 515) and this is the species which that ornithologist records in 1893 as a frequent migrant in September (Catálogo, p. 44).

Polatzek found it to be a regular bird of passage in autumn in most of the eastern islands (Orn. Jahrb. 1909, p. 126). He gives an account of a migratory movement in Lanzarote, when on 14 October, 1904, many Tree-Pipits appeared after a strong north-west wind succeeded by a strong south wind. The birds remained until 17 October in the neighbourhood of Haria, when the north wind dropped, and they all disappeared. The Tree-Pipits were in company with hundreds of Pied Flycatchers (Orn. Jahrb. 1909, p. 122).

Von Thanner has kept and published, mostly in the 'Ornithologische Jahrbuch,' a record of the birds of this species † which he has himself noted and which I here include tabulated under the calendar months in which the bird was recorded. References are given in every case, so that the original record may be easily found. All records are von Thanner's unless otherwise noted.

Tabulated records of *Anthus trivialis trivialis*.

Year 1903 (no dates given). Tenerife; a few specimens obtained (Orn. Jahrb. 1903, p. 216).

Years 1903 & 1904 (no dates given). Tenerife; noted as a regular bird of passage (Nov. Zool. xi. 1904, p. 431).

16 Feb. 1905, and following days. Fuerteventura; migrants passing (Orn. Jahrb. 1908, p. 214).

* Chasna = Vilaflor in Tenerife.

† The bird is often quoted simply as "Baumpieper" (vide Orn. Jahrb. 1912, p. 227), which is the local German name for the Tree-Pipit (*Anthus t. trivialis*).

- 13 March, 1905. Fuerteventura; a single bird seen (Orn. Jahrb. 1908, p. 213).
 14 March, 1905. Fuerteventura; several observed (Orn. Jahrb. 1908, p. 213).
 16 March, 1905, and following days. Fuerteventura; birds frequently seen (Orn. Jahrb. 1908, p. 214).
 — March, 1911 (no special dates given). Tenerife; during the whole month many Tree-Pipits seen and heard (Orn. Jahrb. 1912, p. 227).
 14 April, 1904. Tenerife; two birds seen (Orn. Jahrb. 1905, p. 212).
 — April, — “Chasna,” Tenerife; noted in April by Bolle, J. f. O. 1857, p. 289.
 11 May, 1912. Tenerife; a single bird on passage (Orn. Jahrb. 1912, p. 227).
 29 Sept. 1910. Tenerife; several seen (Orn. Jahrb. 1910, p. 229).
 Sept. Tenerife; a frequent migrant in this month (Cabrera, Catálogo, 1893, p. 44).
 4 Oct. 1905. Tenerife; one bird seen (Orn. Jahrb. 1908, p. 214).
 14 Oct. 1904 to 17 Oct. Lanzarote; many appeared on the 14th, remaining until 17th (Polatzek, Orn. Jahrb. 1909, p. 122—“Baumpieper”: see under *M. atricapilla* et Orn. Jahrb. 1909, p. 126).
 6 Oct. 1904 to 20 Oct. Vilaflor, Tenerife; a bird seen every day (Orn. Jahrb. 1908, p. 214).

Range. *Anthus t. trivialis* breeds extensively in Europe, and in winter is found from the Mediterranean countries to tropical Africa. It extends its range right through Africa on the east coast from Egypt to Matabeleland, the records including every month from September to April. There are only a few specimens in the National Collection from north-west Africa, *i. e.* Morocco (no date), Tangier (Oct.), Dakar (no date), Sierra Leone (Feb.).

***Anthus pratensis.* Meadow-Pipit.**

Alauda pratensis Linn. Syst. Nat. 10th ed. 1758, p. 166—
 Type locality: Sweden.

A. Rare Visitor to the islands.

First recorded by von Thanner (Orn. Jahrb. 1905, p. 65) as having been seen by him on 23 March, 1904.

Polatzek writes (Orn. Jahrb. 1909, p. 126): “Recently authenticated by von Thanner and myself for the Canaries.

I observed them in Lanzarote and Fuerteventura as birds of passage and winter visitors, and in 1904 I shot some in the water-courses and suitable places in the barrancos. Von Thanner saw them in 1904, and published the fact. New arrivals came in Fuerteventura to the Barranco Rio Cabras, which birds stayed there until the end of February; later, I saw only a few on two occasions."

Range. The Meadow-Pipit breeds in Europe and winters partly in northern Africa.

Family REGULIDÆ.

Regulus regulus teneriffæ. Tenerife Goldcrest.

Regulus teneriffæ Seebohm, Hist. Brit. Birds, i. 1883, p. 459—Type locality: Canary Islands.

A Resident subspecies.

Hab. in Archipelago.

Western Group: Tenerife, Palma, Gomera, Hierro.

Range beyond the Archipelago.

Does not occur.

Family PARIDÆ.

Parus cæruleus teneriffæ. Tenerife Blue Titmouse.

Parus teneriffæ Lesson, Traité d'Orn. 1831, p. 456—Type locality: Tenerife.

A Resident subspecies.

Hab. in Archipelago.

Western Group: Tenerife, Gran Canaria, Gomera.

Range beyond the Archipelago.

Does not occur.

Parus cæruleus ombriosus. Hierran Titmouse.

Parus ombriosus Meade-Waldo, Ann. & Mag. Nat. Hist. (6) v. 1890, p. 103—Type locality: Hierro.

A Resident subspecies.

Hab. in Archipelago.

Western Group: Hierro.

Obs. Confined to this island.

Range beyond the Archipelago.

Does not occur.

Parus cæruleus palmensis. Palman Titmouse.

Parus palmensis Meade-Waldo, Ann. & Mag. Nat. Hist.

(6) iii. 1889, p. 490—Type locality : Palma.

A Resident subspecies.

Hab. in Archipelago.

Western Group : Palma.

Obs. Confined to this island.

Range beyond the Archipelago.

Does not occur.

Parus cæruleus degener. Pale Titmouse.

Parus cæruleus degener Hartert, Nov. Zool. viii. 1901,

p. 309—Type locality : Fuerteventura.

A Resident subspecies.

Hab. in Archipelago.

Eastern Group : Fuerteventura and Lanzarote.

Range beyond the Archipelago.

Does not occur.

Family LANIIDÆ.

Lanius excubitor koenigi. Canarian Grey Shrike.

Lanius algeriensis koenigi Hartert, Nov. Zool. viii. 1901,

p. 309—Type locality : Tenerife.

A Resident subspecies.

Hab. in Archipelago.

Western Group : Gran Canaria, Tenerife, Palma.

Eastern Group : Fuerteventura, Lanzarote.

Outer islets : Graciosa.

Range beyond the Archipelago.

Does not occur.

Lanius collurio collurio. Red-backed Shrike.

Lanius collurio Linn. Syst. Nat. 10th ed. 1758, p. 94—

Type locality : Sweden.

This Shrike is a **Rare Visitor** to the Canary Islands.

Von Thanner killed an adult female on 16 October, 1907, at Vilaflor, Tenerife (Orn. Jahrb. 1908, p. 214).

Polatzek includes it in his list (Orn. Jahrb. 1909, p. 122) as a rare bird of passage, and refers to Thanner's specimen.

Range. The Red-backed Shrike breeds throughout Europe and winters in tropical and southern Africa.

Lanius senator senator. Woodchat.

Lanius senator Linn. Syst. Nat. 10th ed. 1758, p. 94—
Type locality: India, *errore*; Rhineland (Hartert).

The Woodchat is a **Rare Visitor** to the Archipelago.

The following are the only records I am aware of:—

(About 1889). Example[s] shot on the Punta del Hidalgo, Tenerife, by Cabrera and recorded by him (Catálogo, p. 47) as *Lanius rufus* Briss. Meade-Waldo identified this bird in the Cabrera Collection (Ibis, 1889, p. 515) and mentions it again in his list (Ibis, 1893, p. 192). Care must be taken not to include these as three separate records, for all clearly refer to the Punta del Hidalgo bird.

(1903). Two birds obtained in Tenerife by von Thanner (Orn. Jahrb. 1903, p. 216). No dates are given, but one of these birds (the ♀) is in the Tring Museum. It bears on the label the date 25/2/03, and is the specimen referred to by von Thanner (Orn. Jahrb. 1910, p. 100) as *L. rutilans*. Dr. Hartert has kindly examined the bird again for me, and tells me it is *L. senator senator*. There is no such bird as *L. rutilans*; the name was given to a bird in winter quarters in Senegambia! These two birds are evidently the two specimens (♂ & ♀) mentioned by Tschusi (Orn. Jahrb. 1903, p. 176), where they are recorded as having been shot by von Thanner on 25 February [1903], the day and the month coinciding with the date on the label of the Tring specimen. Still another reference, presumably again to these birds, is given by von Thanner in Nov. Zool. xi. 1904, p. 431, under the heading of *Lanius rufus*.

(1911). A bird seen in the Gonzalez Collection in Lanzarote, which had recently been shot in that island (Bannerman, Ibis, 1914, p. 62).

Range. The Woodchat breeds in Europe and in north-west Africa, and in winter extends on the west coast to Senegambia and Nigeria.

Family SYLVIIDÆ.

Sylvia communis communis. Common Whitethroat.

Sylvia communis Latham, Gen. Syn. Suppl. i. 1787, p. 287—Type locality: England.

This is a **Rare Visitor** to the Canary Islands, and one over which a great deal of confusion has taken place.

The one record which unquestionably refers to the Common Whitethroat is given in the Orn. Jahrb. 1912, p. 227, by von Thanner who shot, on 1 April, 1912, in Fuerteventura, a female example of *S. communis communis* which was in company with European Chiffchaffs, Willow-Wrens, and Blackcaps ('Mönchsgrasmücken').

Another record which I consider applicable to this species is as follows:—A bird shot by Polatzek at San Matéo, Gran Canaria, on 23 August in a fruit garden where many stayed a long time. Polatzek recorded the bird (Orn. Jahrb. 1909, p. 124) as *Sylvia sylvia* (Linn.), and this I take to be the Common Whitethroat now known as *S. communis communis*. Other authors refer to this species as *Sylvia cinerea* Bechst., which is another synonym of *S. c. communis*.

The fact that the Common Whitethroat is quoted as breeding in the Canary Islands is due to Webb & Berthelot (Orn. Canarienne, p. 15), and later Bolle (J. f. O. 1854, p. 454), who affirmed that *Sylvia cinerea* Bechst. was to be found "in almost all the islands" and "in all the Archipelago where thorny bushes abound." It is quite obvious, from a close study of their work, that these authors mistook the hen* of the Spectacled Warbler (*Sylvia conspicillata bella*) for the Common Whitethroat, which they refer to in their work as *Sylvia cinerea* Lath.

Dr. Hartert (Vög. pal. Faun. p. 588) places ? *Motacilla sylvia* Linn. as a synonym of *Sylvia curruca curruca*,

* [The male Spectacled Warbler was referred to by Webb & Berthelot (Orn. Canarienne, p. 15), and Bolle (J. f. O. 1854, p. 454) as *Sylvia passerina*, a name which, as quoted from the Canary Islands, is absolutely indeterminable, vide Appendix B.]

i. e. the Lesser Whitethroat, so that until Polatzek's bird can be examined there must remain a doubt as to whether he (Polatzek) considered *Motacilla sylvia* Linn. to be the Common or the Lesser Whitethroat. I have little doubt that the former will be the case. Up to the present we have no record of the Lesser Whitethroat having visited the Canary Archipelago.

Range. *S. c. communis* breeds throughout Europe and in northern Algeria and northern Tunisia. It winters in Africa, extending south to Damaraland.

Sylvia simplex. Garden-Warbler.

Sylvia simplex Latham, Gen. Syn. Suppl. i. 1787, p. 287
—Type locality: England.

The Garden Warbler is an **Occasional Visitor** during the spring migration.

Cabrera (Catálogo, 1823, p. 40) mentions having killed one in the spring of 1890 at Laguna (Tenerife), the skin of which was in his collection.

Von Thanner records (Orn. Jahrb. 1912, p. 227) the beginning of a migration of a very large number of Garden-Warblers ('Gartengrasmücke') on 11 May, 1912.

It would appear therefore that this species on rare occasions passes through the Canary Islands during migration. Doubtless they often escape detection.

Range. The Garden-Warbler breeds throughout Europe and winters in tropical and southern Africa.

Sylvia atricapilla atricapilla. European Blackcap.

Motacilla atricapilla Linn. Syst. Nat. 10th ed. 1758, p. 187—Type locality: Sweden.

The European Blackcap is said to be a **Bird of Passage** in considerable numbers to the Canary Islands in spring and autumn.

This must not be confused with the resident Blackcap of the Canaries, which, on account of its slightly darker upper parts, has by some authors been called *S. a. obscura* Tschusi,

a name which is united with *S. a. heineken* (the Madeiran form) by Hartert in his Vög. pal. Faun. i. p. 585.

Migratory specimens of *S. a. atricapilla* are said invariably to possess a thick layer of fat over the body (Orn. Jahrb. 1910, p. 91), and, as already mentioned, may further be distinguished from the resident race by the character given above. I have never, however, been able to distinguish the migratory Blackcaps myself when in the islands. A series of breeding Canarian birds must be examined before the question of the Canarian race can be finally settled.

Meade-Waldo was the first to point out (Ibis, 1893, p. 189) that large numbers of migratory Blackcaps arrived in the islands in autumn.

Von Thanner has also noted the fact and records:—

15 March, 1904. "Killed a ♀ *S. atricapilla atricapilla*, and later saw again some males passing through Fuerteventura on migration" (Orn. Jahrb. 1905, p. 65). And the following year:

14 March, 1905. "Numerous Blackcaps passing in Fuerteventura" (Orn. Jahrb. 1908, p. 213).

1 April, 1912. Recorded by von Thanner, again from Fuerteventura (Orn. Jahrb. 1912, p. 227—'Mönchgrasmucken').

And in the spring of 1909 he saw many migrants of the European race in Gran Canaria (Orn. Jahrb. 1910, p. 91).

Range. *S. a. atricapilla* breeds throughout the countries of Europe and winters in Africa. From the north-west and west African coasts there are specimens in the British Museum from Tangier, the Azores, and the river Gambia; and from Abyssinia, Somaliland, British East Africa, and Ruwenzori on the east. There are no west African specimens in the Tring Museum.

Sylvia atricapilla obscura. Dusky Blackcap.

Sylvia atricapilla obscura Tschusi, Orn. Monatsb. ix. 1901, p. 129—Type locality: Madeira.

A Resident subspecies.

Hab. in Archipelago.

Western Group: Gran Canaria, Tenerife, Palma, Gomera, Hierro.

Range beyond the Archipelago.

Madeira.

Obs. I prefer Tschusi's name for the Madeiran and Canarian form of the Blackcap. Hartert uses *S. a. heineken* of Jardine, which certainly has priority; but this name was given to an aberration, and I prefer to retain Jardine's name for the aberrant form, which still exists in the Canaries and Madeira in restricted localities.

[*Sylvia atricapilla heineken*. Heineken's Blackcap.

An aberrant form of the Dusky Blackcap.

Curruca Heineken Jardine, Edinburgh Journ. of Nat. & Geogr. Sci. i. 1830, p. 243—Type locality: Madeira.

A Resident aberrant form.

Hab. in Archipelago.

Western Group: Palma.

Range beyond the Archipelago.

Madeira.]

Sylvia melanocephala leucogastra. Canarian Black-headed or Sardinian Warbler.

Motacilla leucogastra Ledru, Voy. Teneriffe, i. 1810, p. 182—Type locality: Tenerife.

A Resident subspecies.

Hab. in Archipelago.

Western Group: Gran Canaria, Tenerife, Palma, Gomera, Hierro.

Eastern Group: Fuerteventura, Lanzarote.

Range beyond the Archipelago.

Does not occur.

Sylvia conspicillata bella. Madeiran Spectacled Warbler.

Sylvia conspicillata bella Tschusi, Orn. Monatsb. ix. 1901, p. 130—Type locality: Madeira,

A **Resident** subspecies.

Hab. in Archipelago.

Western Group: Gran Canaria, Tenerife, Palma.

Eastern Group: Fuerteventura, Lanzarote.

Outer islets: Graciosa, Allegranza.

Range beyond the Archipelago.

Madeira and Cape Verde Islands.

Acrocephalus arundinaceus arundinaceus. Great Reed-Warbler.

Turdus arundinaceus Linn. Syst. Nat. 10th ed. 1758, p. 170—Type locality: Dantzic.

A very **Rare Visitor**.

Dr. Hartert (Nov. Zool. 1901, p. 305) records that a specimen of this Warbler, obtained in the Canaries, was examined by him in Dr. Cabrera's collection in Tenerife. (See also Hartert's "Aus den Wanderjahren eines Naturforschers," p. 86.)

Hypolais pallida elæica. Tree-Warbler.

Salicaria elæica Lindermayer, Isis, 1843, pp. 342, 343—Type locality: Greece.

A very **Rare Visitor**, which has been obtained on one occasion only.

Von Thanner shot a specimen of this Warbler in September 1902 at Vilaflor, Tenerife. The skin is in the Tring Museum, where I have examined it along with Dr. Hartert; we are both of opinion that it undoubtedly belongs to the perfectly distinct form *H. p. elæica*.

Ritter von Tschusi, who had not examined the skin, believed that this specimen might prove to be an example of *H. p. opaca* (Orn. Jahrb. 1903, p. 176). This, however, is not the case. The two species could not possibly be confused when compared.

Range. This form of the Tree-Warbler inhabits south-eastern Europe.

Phylloscopus trochilus trochilus *. Willow-Warbler.

Motacilla trochilus Linn. Syst. Nat. 10th ed. 1758, p. 188—Type locality : England.

The Willow-Warbler is a Bird of Passage at somewhat irregular seasons.

It is first recorded by Cabrera (Catálogo, p. 42), who notes that he has killed specimens in spring and in summer.

Polatzek (Orn. Jahrb. 1909, p. 123) says that it is a regular bird of passage to the Canaries, particularly in the eastern islands where it stays longer in winter. In the winter of 1904 he shot specimens in both Lanzarote and Fuerteventura.

Von Thanner has the following records of this species which he has published in the 'Ornithologische Jahrbuch' :—

25 February, 1910. A bird shot in Fuerteventura (Orn. Jahrb. 1910, p. 229).

14 March, 1905. Numerous "*trochilus*" seen in Fuerteventura (Orn. Jahrb. 1908, p. 214).

26 March & 3 April, 1912. { A great many *Phylloscopus t. trochilus* passing through Fuerteventura between these dates (Orn. Jahrb. 1912, p. 226).

27 August, 1906. A bird shot at Vilaflor, Tenerife (Orn. Jahrb. 1908, p. 214).

Unfortunately von Thanner made a mistake in the identification of two of his skins recorded in the Orn. Jahrb. 1905, p. 65, where under the heading of *Phyllopneuste trochilus* he says :

14 March, 1904. "Birds seen on this date in Fuerteventura, and even later a few remained."

The two skins which he obtained are now in the Tring Museum, where I have examined them along with Dr. Hartert, and there is no doubt whatever that they are examples

* All the records of the Willow-Warbler which have been published refer to the typical form. A closer investigation, and examination of specimens killed, may show that the Northern Willow-Warbler (*P. t. evermanni*), which also apparently winters in Africa, has occurred in the Canary Islands on migration.

of the Chiffchaff (*Phylloscopus collybita collybita*), and not of the Willow-Warbler.

Range. The Willow-Warbler breeds throughout Europe and winters in Africa, extending as far as the Cape.

Phylloscopus sibilatrix sibilatrix. Wood-Warbler.

Motacilla sibilatrix Bechstein, Naturforsch. xxvii. 1793, p. 47—Type locality: Germany.

The Wood-Warbler appears to be an **Occasional Visitor** to the Canaries.

I have not been able to examine examples of this species from the islands, but they are certain to belong to the typical species *P. sibilatrix sibilatrix*, and not to *P. s. erlangeri* the north-west African race.

Three specimens have been recorded as killed in Tenerife and others noted on passage: Cabrera obtained one in Tenerife (Ibis, 1889, p. 515), and this is the bird referred to in Meade-Waldo's list when he wrote, "I have seen but one example of the Wood-Warbler in the Canaries" (Ibis, 1893, p. 190).

Von Thanner shot a male of this species (recorded under the German name only, 'Waldlaubvogel') at Vilaflor, Tenerife, on 29 April, 1911, and a female on 1 May, 1911. On the latter date he recorded several Wood-Warblers passing through the island. All von Thanner's records referring to the Wood-Warblers are published in the 'Ornithologische Jahrbuch,' 1912, p. 227.

Polatzek remarks (Orn. Jahrb. 1909, p. 123): "Only once seen with certainty." He does not add whether this is his own record, but I presume he is referring to Cabrera's bird.

Range. The Wood-Warbler is a common species in northern Europe in summer. It winters in Africa and on the west coast as far south as the Congo, where Mr. Douglas Carruthers obtained a bird on 19 February, 1907. There is also another specimen in the British Museum from Abouri, Gold Coast (Buckley), shot on 23 February, 1872. In the island of Madeira Mr. Ogilvie-Grant shot specimens (now

in the British Museum) of the typical Wood-Warbler on 26 April, 1890, which date coincides with the remarkable migratory movements which took place in that year in the Canary Islands.

In Dalmatia, Morocco, and Algiers a very closely allied race occurs, *P. s. erlangeri*. It is unlikely, however, that this form ever visits the Canaries.

Phylloscopus collybita collybita *. European Chiffchaff.

Sylvia collybita Vieill. N. Dict. d'Hist. Nat. xi. 1817, p. 235—Type locality: France.

The European Chiffchaff is a **Bird of Passage** in the Canary Islands, so far recorded during the spring migration only.

Owing to the western islands literally teaming with resident Chiffchaffs (*P. c. canariensis*), the migratory movements of the European species through the Archipelago are apt to be lost sight of. This probably accounts for the only records of the European Chiffchaff coming from Fuerteventura—one of the eastern islands, where there are very few resident Chiffchaffs, belonging to still another subspecies (*P. c. exsul*).

Polatzek remarks that he killed specimens of this bird in Lanzarote in the winter of 1904 (Orn. Jahrb. 1909, p. 123), where he noted that it was a new record for the Canaries.

Curiously enough, the second genuine occurrence of the European Chiffchaff in the Canary Islands was that of two birds (a pair) shot by Thanner at Antigua in Fuerteventura on 14 March, 1904, and erroneously recorded by

* NOTE.—Another form of the Chiffchaff, *Phylloscopus collybita abietina* (Nilss.), was recorded by Polatzek (Orn. Jahrb. 1908, p. 82) as having been obtained by him in 1903 and 1904 in Lanzarote and Fuerteventura, and he particularly notes that it is a new record for the Canary Islands. In a later part of the same paper, where he publishes a full list of the migrants which he had noted, he substitutes the typical Chiffchaff (*P. collybita*) for the above-named race, remarking that it is a new record for the islands (Orn. Jahrb. 1909, p. 123). No explanation is given as to why *P. c. abietina* is omitted, but it seems quite clear that the author had in the meantime discovered that his Chiffchaffs were wrongly identified in the first place. The specimens are in the collection of Ritter von Tschusi, Villa Tännenhof, near Hallein, Austria, and should be examined when circumstances permit.

him (Orn. Jahrb. 1905, p. 65) as *Phyllopneuste trochilus*. He notes at the same time that "birds were seen on this date" in Fuerteventura, and even later a few remained." I have examined both skins, which are in the Tring Museum, with Dr. Hartert, and there is no doubt that they are examples of the European Chiffchaff (*P. collybita collybita*).

The same observer, Herr von Thanner, is responsible for the three following records:—

- 14 March, 1905. "Many birds passing through Fuerteventura" (Orn. Jahrb. 1908, p. 214).
 13 March, 1912. "A male bird obtained in Fuerteventura" (Orn. Jahrb. 1912, p. 226).
 26 March & 3 April, 1912. { "Numerous *P. c. collybita* passing through Fuerteventura between these dates" (Orn. Jahrb. 1912, p. 226).

The above records would certainly only entitle the European Chiffchaff to be considered an Occasional Visitor to the islands. As, however, it has appeared in considerable numbers on each occasion that it has been noted, and taking into account the scarcity of observers (there is no ornithologist in Fuerteventura) and the presence of two resident closely allied subspecies, I feel justified in calling it a Bird of Passage which usually escapes detection.

Range. The Chiffchaff breeds in Europe and winters in southern Europe and northern Africa. There are specimens of *P. c. collybita* in the Tring Museum from Mazagan in Morocco (Sept., Nov., Dec., and Jan.); from Seksawa (April); Biskra (Feb.); and one bird from Thiès, Senegal, obtained on 26 January by Riggenbach.

Phylloscopus collybita canariensis. Canarian Chiffchaff.

Phyllopneuste rufa canariensis Hartwig, Journ. für Ornith. 1886, p. 486—Type locality: Tenerife.

A Resident subspecies.

Hab. in Archipelago.

Western Group: Gran Canaria, Tenerife, Palma, Gomera, Hierro.

Range beyond the Archipelago.

Does not occur.

Phylloscopus collybita exsul. Lanzarote Chiffchaff.

Phylloscopus collybita exsul Hartert, Vög. pal. Faun. i. 1907, p. 505—Type locality: Lanzarote.

A Resident subspecies.

Hab. in Archipelago.

Eastern Group: Lanzarote.

Obs. Confined to this island.

Range beyond the Archipelago.

Does not occur.

VII.—Obituary.

THOMAS ALGERNON DORRIEN-SMITH.

We learn with regret that Mr. T. A. Dorrien-Smith, the Lord Proprietor of the Scilly Islands, died on 6 August last at Tresco Abbey. He was elected a Member of the Union in 1904.

Born in 1846 at Berkhamsted, the son of the late Col. R. A. Smith-Dorrien, Mr. Dorrien-Smith was educated at Harrow, and served for some years in the 10th Hussars and afterwards in the Hertfordshire Yeomanry. In 1872 he succeeded his uncle, the late Mr. Augustus Smith of Tresco Abbey, and for many years M.P. for Truro, as Lord Proprietor of the Scilly Islands. During the rest of his life he made his home in Scilly and devoted himself to the care and improvement of the wonderful subtropical gardens at Tresco, which had been laid out by his uncle. He also did a great deal for the inhabitants of the islands by introducing the early cultivation of flowers and vegetables for the London market.

His son, Mr. A. Dorrien-Smith, himself a well-known botanist, writes as follows:—

“He was much interested in natural history and birds in particular, but before his time most of the rarer birds shot in the islands were sent to Mr. R. Rodd, of Trebatha, Cornwall. Among these was included the Purple Heron, which has been seen since, but not destroyed.

On my father's accession he started a collection of birds killed in the islands, confining the collection to the rarer migrants, but he was always careful to protect any species already included in his collection. To ornithologists the collection in the Abbey is a most interesting one, and comprises the Greater Yellowlegs (*Totanus melanoleucus*), the Eskimo Curlew (*Numenius borealis*), the Solitary Sandpiper (*Totanus solitarius*), and White's Thrush (*Turdus aureus*). The Hawks are well represented, and include the Common Kite and Lesser Kestrel, the Iceland and Greenland Falcons, and the White-tailed Eagle. The islands lend themselves naturally to visitations of various Waders, and there are large tracts of sandy beaches, dunes, and fresh-water marshes.

"My father was by no means a scientific naturalist, but was always a keen observer of birds and quick to detect an unfamiliar flight or note, and in this he was ably supported by David Smith, his keeper, who at the age of 86 knocked the Yellow-browed Warbler down with his stick in a bramble-bush and secured it."

In mediæval days Scilly was a monastic property, and in 1687 it was granted by the Crown to Sidney Godolphin, the well-known statesman of the Restoration. It remained in the Godolphin family until 1831, when Mr. Augustus Smith became the lessee or Lord Proprietor.

VIII.—*Notices of recent Ornithological Publications.*

Beebe's Jungle Peace.

[Jungle Peace. By William Beebe. Illustrated from photographs. Pp. x+297. New York (Henry Holt), 1918. 8vo.]

Under this title Captain Beebe sends us a volume of essays most of which have already appeared in the 'Atlantic Monthly.' They deal with scenes and incidents of his recent journeys to South America, the greater number of them relating to British Guiana. The title derives from the fact that Captain Beebe re-visited these

scenes after his return from some months on the western front, and the contrast of "creeping through slime-filled holes beneath the shrieking of swift metal" and "splashing one's plane through companionable clouds three miles above the little jagged hero-filled ditches, and dodging other sudden-born clouds of nauseous fumes and blasting heart of steel," with the "great green wonderland of the tropical jungle" is undoubtedly vast; at the same time all is not peace even in the tropical jungle, as witness the author's account of the march of the so-called "army ants" across a pit excavated by him to entrap the unwary dweller of the forest.

The essays are full of observations of bird- and other animal-life, and the descriptions of many of the scenes entrancing, and make one long to join him in the primeval forest-lands of Guiana.

Written for the general public and not for specialists, the facts recorded are of less importance than the impressions created in the mind by the reading of the fascinating descriptions, which should surely stimulate all nature-lovers to endeavour some time in their lives to visit the exuberant forest-regions of South America.

Fénis on Bird-song.

[Contribution à l'étude des cris et du chant des oiseaux dans ses rapports avec la musique, par M. F. de Fénis. Bull. Inst. Gén. Psychol. Paris, xvii. 1917, pp. 87-130.]

M. de Fénis deals with the voice of birds from the point of view of psychology, and endeavours to trace the analogy between the evolution of bird-song and that of the human voice. After a chapter showing how the voice of birds corresponds to the locality and surrounding in which they live, he proceeds to discuss the great difficulty of the notation or representation on paper of the voices of birds. This he himself attempts by a combination of ordinary musical notation with a syllabic rendering of the words.

In his final conclusion he traces the origin of the highly specialized musical forms of the present day from the very

simple melodies without harmonics or intervals as practised by the ancient Greeks, and he believes that he can prove that a similar development has taken place among birds from extremely simple forms to the most highly specialized song of such birds as the Thrush, the Blackbird, the Robin, and the Nightingale, all of which improvise their varying song.

In order to understand thoroughly M. de Fénis' views it is necessary to be trained in music, but we should point out that the discussion only deals with the common European birds such as are found in France, and that he appears to rely for most of his observations on those of various authors whose rendering of the songs of individual birds may be very different owing to the varying psychology of the investigator.

Ghigi on the origin of the Domestic Fowl.

[Ricerche sull' incrociamiento del *Gallus sonnerati* con polli domestici. Memoria del Prof. Alessandro Ghigi. Mem. R. Acc. Sci. Bologna (8) iii. pp. 1-16, 1 Tav.]

In this memoir Prof. Ghigi states the results of his experiments in crossing the two species of Jungle-Fowl *Gallus sonnerati* and *G. gallus* and also various members of the domestic races. All of these he finds completely fertile with one another through several generations. From this he deduces the conclusion that our domestic races are not, as has been believed by Charles Darwin and many other writers, monogenetic and descended solely from *Gallus gallus* (= *G. bankiva* auct.), but that they are bigenetic and have been derived from both *G. gallus* and *G. sonnerati*.

Details of the hybrids and of their mendelian inheritance are given, and the plate illustrates the feather-characters of the pure strains and of the various crosses.

Gladstone's Ornithologist's Note-Book.

[An Ornithologist's Field Note-Book by Hugh S. Gladstone, M.A., etc. London (Bickers & Son), 1918. Price 2d.]

This little book contains a list of the commoner British

Birds compiled from the B. O. U. List and printed on one side of the page only. Captain Gladstone believes that it will be found useful for carrying in the pocket when out for a country walk, or when visiting a new locality, for noting down birds either seen or heard.

The Birds of Passage and the occasional and rarer Visitors have not been included in the list, but the Residents, Summer visitants, and Winter visitants are designated by "R" "S" or "W" being placed after their names, while those which have peculiar British racial forms are distinguished by an asterisk.

The pamphlet will undoubtedly be a useful one, but we could have wished for something a little more elaborated with short descriptions such as the work of Mr. Clive Lord on Tasmanian birds which we have noticed on page 136. Perhaps Mr. Gladstone will attempt something on these lines.

Lönnberg on African Birds.

[Birds collected in Eastern Congo by Captain Elias Arrhenius. By Einar Lönnberg. Ark. Zool. Stockholm, x. no. 24, 1917, pp. 1-27.]

[Notes on some interesting East-African Birds. Id., ibid. xi. no. 5, 1917, pp. 1-5.]

The first of these collections, consisting of about 525 specimens and 184 species, was made by Captain Arrhenius in the neighbourhood of Beni in the forest region north of Lake Albert Edward. A number of interesting species are mentioned, some of them not in Reichenow's recently published avifauna of the Central African Lake district, which shows such close affinities to the West African faunal area. The female, previously unknown, of *Columba albinucha* Sassi is described, and an interesting new Hawk, *Accipiter beniensis*, allied to *A. sharpei* Rehw., is described. Names for two other subspecies believed to be distinct, *Mesopicus schoensis semischoensis* and *Neocossyphus rufus arrhenii*, are suggested.

The second paper deals with a collection of birds made at Elgon and Londiani in British East Africa by Dr. Leo Bayer,

and sent to the Zoological Museum at Christiania. Only a few of the more interesting specimens are dealt with, and among these are two new forms—*Astur tachiro tenebrosus*, possibly a melanism or possibly a constant local race inhabiting dark forest, and *Zosterops bayeri*, allied to *Z. jacksoni* Neum.

Lord on Tasmanian Birds.

[A Descriptive List of the Birds of Tasmania and adjacent Islands. By Clive E. Lord. Pp. 1-48. Hobart (Walch & Sons), 1917.]

This little pocket-book appears to be a most practical work for the outdoor naturalist. Every Tasmanian species is listed with a short description, the approximate length of the bird is given (perhaps the length of the wing would have been better), and the number of the eggs, their colour and when laid, all contained in about six lines, a wonderful work of compression.

The classification and nomenclature are those of Mr. Mathews, and although technical terms have been avoided care has been taken to make the list as complete as possible.

A list of British Birds drawn up on similar lines would be most useful.

Mathews on Australian Birds.

[The Birds of Australia. By Gregory M. Mathews. Vol. vii. pt. iii. pp. 217-320, pls. 243-251. London (Witherby): August 1918.]

In this part we have a large amount of exceptionally interesting notes on the life-histories of the various species, many of which are uncommon or at least little known. The author continues the Caprimulgine birds with *Eurostopodus* and *Rossornis*, while he suggests that the absence of the long rictal bristles in the former shews arrested development, as compared with *Caprimulgus*. Two species are recognised—*E. mystacalis* (= *E. albigularis* Vig. & Horsf.) and *E. guttatus* (= *E. argus* Hartert), but no subspecies for the present. *Rossornis* is a new genus for the long-tailed, golden-hued *C. macrurus* Horsf.; *Eximiornis* is similarly proposed for *C. eximius* Temm. There follows a long disser-

tation on the forms of *Rossornis*, and a comparison with the decisions of Rothschild and Hartert on the subject; eventually the Australian *yorki* and *keatsi*, with the Bornean *salvadorii*, are granted subspecific rank, as well as the Australian *coincidens* and *rogersi* and the extralimital *aruensis* from the Aru Islands, the last two being new subspecies. Several other forms are enumerated, and raise the total to fourteen or more, even without those from New Guinea and New Britain.

There is no general discussion prefixed to the Micro-podiformes (Swifts); possibly it is postponed until this section is concluded.

Mr. Mathews still uses the generic term *Zoonava* for *Collocalia francica* and *C. fuciphaga*, and under this head comments on the recent work of Ogilvie-Grant, Hartert, Oberholser, and Stresemann; but we cannot here tabulate the many subspecies, and must be content to state that he accepts Oberholser's *Aerodramus* for *innominata* of Hume.

Under *Hirundinapus* the author further criticizes the work of his predecessors, and refuses (with Oberholser) to combine the genus with *Chætura*. He considers that there are two main groups, of larger and smaller species; while he admits the separation of the genera *Streptoprocne*, *Pallenia*, *Rhaphidura*, and *Mearnsia*, adding as new, *Telacanthura* for *ussheri*, *Neafrapus* for *cassini*, *Alterapus* for *sabini*, *Indicapus* for *sylvaticus*, *Zoonavena* for *grandidieri*, *Papuanapus* for *novæ-guinææ*, *Chæturellus* for *rutilus* and another.

It may be observed that both *Hirundinapus caudacutus* and *Micropus pacificus* are represented in the Watling drawings. Of the latter the plumages are not sufficiently well known to justify subspecies, and even *colcloughi* Mathews is dropped.

Mr. Mathews finds the Cuculiformes too heterogeneous and diverse a group to consider in connection with extralimital forms, but to many readers the articles on the Cuckoos will be the most interesting in this part, and in particular the notes on the hosts of the Pallid and Fan-tailed Cuckoos by Mr. H. L. White (pp. 307, 318), and the

description of the ousting of nestlings of foster-parents by the former taken from Barrett's account in 'The Emu' (vol. v. p. 20). The male of this bird is said to be monogamous.

The forms treated in this part are *Cuculus optatus*, *Heteroscenes pallidus*, and *Cacomantis rubricatus*, of which various subspecies are upheld (pp. 290, 309, 320) and one is newly proposed (*Cacomantis eyrei*). A new species is *Cuculus waigoui*, and a new genus *Vidgenia* (for *Cacomantis castaneiventris*).

As usual, a general introduction is prefixed to the Order, with the views of various authorities as to its subdivision, the families used by Mr. Mathews being Cuculidæ, Eudynamisidæ [*sic*], Scythropidæ, and Centropodidæ.

Robinson and Kloss on new Malayan Birds.

[Four new birds from Java. By H. C. Robinson. Journ. Fed. Malay States Mus. vii. 1918, pp. 235-237.]

[On two new species of Flower-Peckers (Dicæidæ) from the Malay region. By H. C. Robinson and C. B. Kloss. Ibid. pp. 239-240.]

In the first of these short notes Mr. Robinson describes *Dendrobiastes hyperythra vulcani*, *Pomatorhinus montanus ottonlanderi*, *Stachyridopsis melanothorax intermedia* subspp. n., and *Stachyris orientalis* sp. n., all from Java.

The second note by Messrs. Robinson & Kloss contains descriptions of *Piprisoma sordidum* sp. n. from Selangor, Malay Peninsula, and of *Dicæum vanheysti* sp. n. from north-eastern Sumatra.

Shufeldt on the Monkey-eating Eagle of the Philippine Is.

[Our big colonial eagle-terror of the wild monkeys of the Philippines. Amer. Forestry, vol. xxiv. 1918, pp. 555-557.]

Dr. Shufeldt has recently received from Mr. R. C. McGregor, the well-known ornithologist of the Philippine Islands, a head and foot together with the greater part of the skeleton of an example of the rare *Pithecophaga jefferyi*. He proposes to use this material to investigate the anatomical relations of this, the largest of Accipitrine birds.

From the external characters, which alone have been hitherto examined, it has been supposed that it was most nearly allied to the Harpy Eagle of South America (*Thrasaëtes harpyia*). We hope that Dr. Shufeldt's research, which will be published in a forthcoming number of the 'Philippine Journal of Science,' will settle this question.

In the short article whose title is here quoted Dr. Shufeldt gives a résumé of what is at present known about the bird, illustrated with photographs taken by himself of the head and foot alluded to above. These should be compared with Grönvold's pictures in Ogilvie-Grant's article in 'The Ibis' (1897, pp. 216, 218).

Taverner on Canadian Birds.

[The Gannets of Bonaventura Island. By P. A. Taverner. Ottawa Nat. xxxii. 1918, pp. 21-26.]

[Addenda to the Birds of Jasper Park, Alberta. By P. A. Taverner. Canadian Alpine Journ. ix. 1918, pp. 62-69.]

Lying off the coast of the Gaspé Peninsula in the extreme eastern portion of the Quebec Province south of the Gulf of St. Lawrence, is the little island of Bonaventura. This and Bird Rock near the Magdalen Islands, also in the Gulf of St. Lawrence and a much more inaccessible spot, are the only two known rookeries of the Gannet on the western side of the Atlantic.

Mr. Taverner describes in a readable and picturesque article two visits he recently made to this island in 1914 and 1915. The Gannets nest on the seaward face of the island where there are high cliffs weathered into a series of ledges, and he estimates the number of the individual birds at about 8000. In horizontal cracks extending back into the heart of the rock are to be found breeding Murres, or Guillemots as we should call them, Razorbills, and Puffins; while Leach's Petrels resort to smaller crevices and clefts, whence they only come out at night. Mr. Taverner mentions a curious sweetish odour proceeding from these last which he states is not unpleasant. It seems a pity that something cannot be done to preserve the Gannets on

Bonaventura Island, as they seem to suffer a good deal from wanton persecution at the hands of irresponsible gunners and others. Mr. Taverner informs us that notwithstanding the exertions of many people interested in protection, the local feeling is very strong against any legislative action and so far has prevented steps being taken by the Conservation Commission to reserve this spot as a perpetual bird-reserve under the control of the Provincial or Dominion authorities. We hope the local "conservativeness," as Mr. Taverner calls it, will soon be overcome. The article is illustrated by some good photographs well reproduced.

The second paper forms a supplement to one published in the same journal in 1912 by Mr. J. H. Riley on the birds of Jasper Park and the neighbourhood. Thirty additional species are noted in the present paper, bringing up the total number observed or obtained to 108.

Jasper Park is a Government Reserve in the Canadian Rocky Mountains, a good deal to the north of where the Canadian Pacific Railway crosses the range, and is reached from the new transcontinental line of the Grand Trunk Railway.

Van Oort on the Birds of Holland.

[Ornithologia Neerlandica. De Vogels van Nederland, door Dr. E. D. van Oort. Parts 1 & 2; pp. 1-24, pls. 1-20. 'S Gravenhage (Martinus Nijhoff). [1918.] 4to.]

Our foreign member, Dr. van Oort, Director of the Leyden Museum, has sent us the first two numbers of his new book on the birds of Holland. No general work on this subject has been published since the time of his predecessor at Leyden, Professor Schlegel, who in 1858 published his "De Vogels van Nederlands."

Dr. van Oort's book is planned on a sumptuous scale and will be issued in 40 parts, each containing 10 plates and about 12 pages of text, so that when completed it will have about 400 plates. The price of each part is 12.50 guilders, about £1, so that the subscription for the whole work will amount to about £40, but publication will be spread over about eight years.

The two parts before us deal with the Grebes, Divers, Shearwaters, and Solan Goose. With the genera are keys of the species, and with each species references chiefly to the works of Dutch authors, together with the vernacular names met with in Holland. A detailed description is followed by the general distribution, the occurrence in Holland, and the life-history. The nomenclature is based on a list of Dutch birds published by the author in the 'Notes from the Leyden Museum' for 1908, with such modifications as appear to have been necessitated by recent researches. As a matter of fact, so far as the text in the present two parts is concerned, it corresponds exactly to that in the B. O. U. list of British Birds, except that *Hydrobates* is used as a generic name for the Storm-Petrel instead of *Thalassidroma*.

Of the plates a few words must be said; they are drawn by M. A. Koekkoek under the direction of Dr. van Oort, and are reproduced by Messrs. Emrik and Binger of Haarlem by what appears to be some process of chromolithography. The plates show very well the distinctions of the various species; especially is this the case with the Slavonian and the Black-necked Grebes, where in each case birds both in breeding and winter dress are figured. The one which pleases us best is the Little Grebe, a charming scene with male, female, and a young bird in down. The Shearwaters appear to us less successful. They are all shown standing on a sandy beach close to the sea—an unlikely spot to find such a bird—and the birds are standing in stilted and stiff attitude and appear to have been drawn from stuffed specimens. This is of course in many cases inevitable, but still we think more life could have been put into the drawings if the artist had studied the birds in the flesh.

The work is, however, undoubtedly a fine one and planned on very generous lines. It will doubtless become, when finished, the standard work on the Birds of Holland, and we shall look forward to seeing the future numbers as published.

The Auk.

[The Auk. A quarterly journal of Ornithology. Published by the American Ornithologists' Union. Vol. xxxv. for 1918.]

The completed volume of the 'Auk' for last year contains over 840 pages, and it is impossible to review all the various papers contained in it, and we can only mention some of those of more general interest.

It is rather remarkable that Mr. H. L. Clark, who writes on anatomical matters, has selected for one of his papers a somewhat similar subject to that of Mr. G. L. Bates in his recent paper in 'The Ibis.' He has traced the correlation of the number of major upper tail-coverts with the number of rectrices, and finds a good deal of variation in this respect. He has not found any allusion to the matter in literature, and believes that the point is a new one and may throw some light on phylogeny and classification. In all the Passeres examined the two central rectrices lack their corresponding coverts, which are therefore 10 in number, there being of course 12 rectrices. In most of the Waders, Hawks, and Woodpeckers the number of the coverts and rectrices are the same, in the Owls and some other groups the coverts are more numerous than the rectrices, while in a Toucan (*Ramphastos cuvieri*) there are 20 to 22 coverts to 10 rectrices. The whole subject is an interesting one, and we hope Mr. Clark will continue his study of the subject. Other anatomical papers by Mr. Clark deal with the Cuban Trogon (*Priotelus temnurus*) and the now extinct Passenger Pigeon (*Ectopistes migratorius*), of which the pterylosis is described.

Mr. H. C. Oberholser has several papers on the taxonomy of North American birds, in most cases pointing out fresh reasons for the recognition of subspecies already proposed by other authors and in some cases suggesting nomenclatural emendations. He draws attention to a curious mistake of Messrs. Mathews and Iredale who stated that *Tringa maculata* of Vieillot was preoccupied by *T. maculata* of Linnæus, whereas there is no *T. maculata* but only a *T. macularia* of Linnæus. Mr. Oberholser points out

(p. 468) that the Glaucous Gull (*Larus glaucus* of the B. O. U. List) must bear the name *Larus hyperboreus* Gunnerus, and that *L. barrovianus* Ridgway is only a subspecies of the Glaucous Gull. This is a matter for the committee of the B. O. U. List to investigate. A long list of proposed changes in the A. O. U. Check-list is also given on pp. 200-217, but it must be remembered that these are not to be considered valid until passed by the Check-list committee.

Mr. F. H. Kennard writes on the ferruginous stains so often noticed in water-fowl, especially in such birds as the Snow-Geese. On chemical analysis it is found to be due, as might be expected, to oxide of iron, and is no doubt acquired by the habit of digging for food among the mud and decaying vegetation of the iron-bearing waters of marshes.

An ingenious method of extracting fat from birdskins is described by Mr. H. Lloyd. The fluid employed is ethyl ether, and with the apparatus described Mr. Lloyd finds it most successful.

The Loon or Diver of north-eastern Siberia is distinguished by its greenish-coloured throat, and Dr. J. Dwight, believing it to be hitherto undescribed, names it *Gavia viridigularis*. He distinguishes *G. arctica arctica* of northern Europe, *G. a. suschkini* Sarudny of Turkestan, and *G. a. pacifica* of arctic North America, all of which have purplish throats. Another species is renamed by Mr. Stone on p. 244, *Troglodytes musculus chapmani* vice *T. m. neglectus* preoccupied. This name is given in a review of Dr. Chapman's recent volume on the Birds of Colombia. We hope Mr. Stone will forgive us if we point out the inadvisability of hiding any new names in reviews where they are very apt to pass unnoticed by the unwary investigator.

The Spoon-billed Sandpiper (*Eurynorhynchus pygmaeus*) is always a rare bird and the eggs and young have only been known since 1910, when they were secured in the north-eastern corner of Siberia by Captain Kleinschmidt

for Mr. J. E. Thayer, who described them in the 'Auk' for 1911. In the present volume Mr. J. Dixon gives us some further particulars of the breeding and other habits of this bird as observed by him at Providence Bay, also in north-eastern Siberia, and adds some interesting details of its distribution and status as a North American bird.

Mr. C. J. Hawkins contributes an article on "Sexual selection and bird-song," in which he criticizes Darwin's theories of sexual selection and suggests that the cause of song lies in the internal life of the bird rather than in external causes. He believes that bird-song as well as many other manifestations of secondary sexual characters is due to the ripening of the gonads and the setting free of hormones which stimulate the nervous system and thus cause the nuptial display. This argument from the so-called hormones, which are entirely hypothetical and the existence of which have never been proved, does not appear to us to entirely invalidate Darwin's theory of sexual selection, but we must leave the reader of Mr. Hawkins's paper to draw his own conclusions.

A number of faunal papers dealing with different districts of the North American continent are of more local interest, but we must mention "A list of birds collected on the Harvard Peruvian Expedition of 1916," by Messrs. O. Bangs and G. K. Noble, in which are described a number of new species and races, while there are several rectifications of taxonomy and synonymy.

Avicultural Magazine.

[The Avicultural Magazine. Edited by Graham Renshaw, M.D. Third Series. Vol. ix. November 1917 to October 1918.]

The last completed volume of the 'Avicultural Magazine' shows no signs of diminishing interest in matters avicultural, though it was found necessary, in consequence of the scarcity and increased cost of paper as well as the great rise in the price of printing, to diminish the size of the monthly numbers from June onwards, but we understand that an increase

to the normal number of pages has since been sanctioned by the committee.

One of the new features of the magazine is the devotion of each number to a special subject ; thus in the present volume there have been two Anzac numbers dealing with Australian birds, as well as American and South African numbers, while others deal with Economics, Vultures, and Zoological Gardens.

Among more strictly avicultural articles Mr. W. S. Baily tells us of his success in breeding the Mexican Black-breasted Quail (*Colinus pectoralis*), which has brought him the award of the Society's medal, and Mr. Blaauw has successfully reared a young Brazilian Seed-Finch (*Oryzoborus torridus*), which has probably never been bred in captivity previously. Another very practical article is one on the Diseases of Birds by Mr. P. F. M. Galloway, which will doubtless be most useful to readers.

Captain B. E. Potter writes pleasantly on the Birds of Macedonia, and Dr. Hopkinson's article on the Birds of the Gambia is reprinted from the 'Journal of the African Society.' In this last Dr. Hopkinson points out the interesting fact that the Gambia's avifauna is increased by two double migrations, one from Europe and the north in October returning in April, the other from the south which arrives at the beginning of the rains in June or July of birds from the more equatorial parts which come to breed in Senegambia ; this latter group returns south about the end of the rains, their departure being spread over several months from October to January.

Among the tragedies of the war must be included the destruction of the wonderful collection of live birds at Villers-Bretonneux belonging to Lieut. J. Delacour, which occurred during the German push towards Amiens in the earlier part of 1918. There were some 360 birds representing 141 species in the collection, the whole of which were destroyed. A list of the species is given on p. 305 of the present volume.

“An Old Australian Bird-Lover” contributes an interesting article on the methods adopted by Mr. J. E. Ward to secure a collection of live Birds-of-Paradise in the interior of New Guinea. We are glad to observe that the Commonwealth Government have very strict regulations in regard to this traffic, and no collecting can be done without a license and the payment of fees, while the numbers permitted to be taken are distinctly stated in the license. Mr. Ward was fortunate enough to secure six examples of the rare Blue Bird-of-Paradise (*Paradisornis rudolphi*), which is only to be obtained far away from the coast in the interior at an elevation of 6000 feet.

Two very remarkable photographs by Mr. G. E. Low are among the illustrations of this volume; one is of a running Apteryx taken in the Dublin Zoo, the other of nesting Puffins on the Saltee Islands off the coast of Wexford, and with this we must conclude our necessarily brief notice of a capital volume.

The Emu.

[The Emu: Official organ of the Royal Australasian Ornithologists' Union. Vol. xvii. Melbourne. July 1917–April 1918.]

A comparatively new feature of the ‘Emu’ is the appearance of a coloured plate as a frontispiece to each number. In the present volume, *Climacteris waitei*, recently discovered and described by Capt. S. A. White in central Australia; *Ephthianura crocea*, a rare and little-known Bush-Chat from north Queensland; *Platycercus elegans fleurieuensis*, a new form of the Rosella Parrot from Fleurieu Peninsula in South Australia, described by Mr. Ashby in the same volume; and *Pachycephala peninsulæ*, a remarkable Thickhead or Whistler from north Queensland, are all in this way honoured. In the case of the second and fourth, Mr. A. S. Campbell writes a few words of explanation.

Mr. Campbell also, in this instance assisted by Mr. H. G. Barnard, has contributed an account of the birds observed by them in the Rockingham Bay district of north Queensland, a rich country ornithologically and containing

very interesting species; some fine photographs of nests and eggs illustrate this article, while many protests are made against some of the new or newly discovered names applied by Mathews to what Mr. Campbell no doubt considers to be old friends, though in each case the Mathewsian as well as the R.A.O.U. Check-list names are given.

Another important faunal paper, of which three instalments appear in the present volume, is that of Dr. W. Macgillivray, the President of the R.A.O.U. The first portion is mainly occupied by an account of the wanderings of Mr. M'Lennan, who was commissioned by Dr. Macgillivray in 1913 to collect for him in the northern part of the Cape York Peninsula. In 1915 Dr. Macgillivray himself joined Mr. M'Lennan, and the results seem to have been very satisfactory as a considerable booty was obtained. One of the special objects of the exploration was to find out about some strange Parrots reported to exist on the Pascoe river. These turned out to be new representatives of genera hitherto unrecorded from Australia—*Geoffroyus personatus maclennani* and *Eclectus pectoralis macgillivrayi*, and have already been reported on in our pages.

The question of the existence of two races of the Little Penguin (*Eudyptula*) on the Australian coasts has always exercised Australian ornithologists, and Mr. Mathews apparently has not yet spoken authoritatively on the subject. Dr. Brooke Nicholls, with the object of throwing further light on the problem, paid a visit to the Penguin rookery on Phillip Island on the Victorian coast in March 1917, and his report is published in the January number. After an historical introduction on the history of the Penguin from the time of Vasco da Gama onwards, he gives tables of measurements and descriptions of the colour of the bills and feet of the Little Penguin, as well as a detailed account of the rookeries, illustrated with many photographs. He comes to the conclusion that all the birds on Phillip Island must at any rate be referred to one species—*Eudyptula minor novæ-hollandiæ*.

The White-winged Black Tern (*Hydrochelidon leucoptera*) is practically unknown in Australia, and only one or two somewhat doubtful instances of its occurrence have been recorded. Recently there has been a remarkable visitation of this bird to Western Australia, and many thousands have been observed at various localities along the coast. Mr. W. B. Alexander, who first noticed the Tern at Easter time in 1917, and who has collected and published an account of what others as well as himself have observed, states that nearly all the birds were in immature or intermediate plumage, and though a few were seen in the breeding-dress no specimen was secured.

A pathetic interest attaches to a short note by Col. W. V. Legge, probably his last contribution to ornithology, recording the first occurrence of *Gypoictinia melanosterna*, the Black-breasted Buzzard, in Tasmania.

List of other Ornithological Publications received.

FLOWER, Capt. S. S., and NICOLL, M. J. The Principal Species of Birds Protected in Egypt. Cairo, 1918.

PALMER, T. S. The American Ornithologists' Union. (Amer. Mus. Journ. xviii. 1918, pp. 473-483.)

TAVERNER, P. A. The Hawks of the Canadian Prairie Provinces in their Relation to Agriculture. (Canada Dept. Mines, Museum Bull. no. 28, 1918.)

WHITE, Capt. S. A. Ooldea on the East-West Railway, etc. Adelaide, 1918.

Ann. Rep. Proc. Belfast Field Nat. Club. (Second Series, Vol. vii. pt. 5, 1918.)

Archivum Melitense. (Vol. iii. no. 5, 1918.)

Bird-Lore. (Vol. xx. no. 5, 1918.)

Bird Notes. (Third Series, Vol. i. nos. 9-10, 1918.)

British Birds. (Vol. xii. nos. 5-7, 1918.)

Condor. (Vol. xx. nos. 4-5, 1918.)

Emu. (Vol. xviii. nos. 1-2, 1918.)

Irish Naturalist. (Vol. xxvii. nos. 8-11, 1918.)

Journ. Bombay N. H. Soc. (Vol. xxv. no. 4, 1918.)

Journ. Fed. Malay States Museum. (Vol. vii. no. 4; Vol. viii. no. 2, 1918.)

Rev. Française d'Orn. (Nos. 110-115, 1918.)

Scottish Naturalist. (Nos. 79-83, 1918.)

IX.—*Letters, Extracts, and Notes.***The Indian Peregrine Falcon.**

DEAR SIR,—Circumstances have just given me leisure to assimilate the interesting information in Mr. Stuart Baker's valuable accounts of the "Nidification of some Indian Falconidæ," but on p. 225 of 'The Ibis' for 1917 occurs a statement which compels me to address you, as it reopens a question which has long worried me.

Here apropos of *Falco peregrinus peregrinator* Mr. Stuart Baker writes: "quite common on the N.W. Frontier, the Himalayas, and their subsidiary hills." Judging from the context it would appear that the words "N.W. Frontier" are used in a restricted sense, implying roughly what is known as the North-West-Frontier Province and not generally meaning the whole north-western frontier of the peninsula, including Baluchistan and a portion of the Himalayas.

If I am right in supposing that here Mr. Stuart Baker is referring to the N.W. Frontier Province, I should be very interested to know if he has any authentic evidence that his Falcon does breed in that province. I know that Capt. C. H. T. Whitehead (whose gallant death we in India cannot sufficiently deplore) wrote (Ibis, 1909, p. 263) from Kohat that *Falco peregrinator*, the Shahin, is "a resident and the commonest of our larger Falcons. Mr. Donald generally keeps a pair. . . . There are many eyries scattered throughout the District." On this statement I wrote and joined issue with Captain Whitehead and asked what evidence he had that the Falcons in question were *Falco peregrinator* and not *Falco babylonicus*. His reply was to the effect that he had not killed a specimen, and that he chiefly relied on information supplied to him by Mr. Donald, who is a most enthusiastic and successful Falconer; he does not, however, claim to be a systematic ornithologist. It was further arranged that on his return to India Captain Whitehead should obtain some specimens from the eyries and settle the question definitely. The war, however, intervened.

In my opinion *Falco peregrinator* does not breed in the N.W. Frontier Province, but is replaced there by the Red-cap Shahin, *Falco babylonicus*. Unfortunately I have not been able to obtain the part of 'Vögel der paläarktischen Fauna' which deals with the Falconidæ, so use this name under favour of correction. It should be remembered that this is the bird which many Indian ornithologists write of as *Falco barbarus*.

My evidence so far is not good, but it seems to be better than the evidence in favour of *F. peregrinator*.

Hume says ('Scrapbook,' p. 79)—under *Falco babylonicus*:—"It breeds, I know, in or close to the Peshawar valley, as well as in Cashmere." Cashmere is, in my opinion, the meeting ground of the two races.

Again (*loc. cit.* p. 84) he says:—"Major Delmé Radcliffe, our best Indian Falconer, tells me that the back in this species becomes very pale slaty from age, the red of the head becomes slightly paler, but the rufous colour of the breast is maintained, or becomes deeper. In some he has seen the head as red as that of the Torumbée (*Lithofalco chiquera*). He found it breeding near Murree." From this description there is no doubt that the species referred to as breeding at Murree was *F. babylonicus*.

Again, on the same page he quotes Dr. Jerdon as follows:—"This is the common *Shahin* of the Punjab Falconers. In the cold weather it visits the plains of the Punjab, N.W.P. and Oude."

In this last sentence we have, in my opinion, the key to the mistake which has been passed along from ornithologist to ornithologist. Much of our information about the distribution of the larger Falcons comes directly or indirectly from Falconers. The native falconer uses, describes, and talks about a *Shahin*, and his master, looking up the books for a name to give a semi-scientific flavour to his account, finds "The Shahin Falcon, *Falco peregrinator*," and writes accordingly; thus much information relating to *Falco babylonicus* is put down in compilations to *Falco peregrinator*.

I have in my service at present, and have had from 1913,

a Punjabi Falconer, called Umar Khan, who is a master of his art, and he and I together devote a lot of attention to Shahins. Now Umar Khan calls both *F. peregrinator* and *F. babylonicus* the "Shahin"; if pressed for a separate name for each, he will call the former the "Black Shahin" and the latter the "Red Sahin" (in vernacular, of course), but in his mind he clearly thinks no more of them as separate species than the different types of *Falco peregrinus* that he separates as "white," "yellow," and "red."

Since 1913 I have owned or seen a large number of freshly caught or trained Shahins, which have been all obtained in the Punjab or N.W. Frontier Province; yet of these, only one could I refer to *Falco peregrinator*. This was brought to me on 27 November, 1913, at Jhelum, whence the snow ranges in Kashmir are easily visible on a fine day, while the foothills of Jammu are but a short distance away. It was picked up suffering from a gunshot wound in the breast. The rest have all been unmistakable *Falco babylonicus*. The majority of these have been caught somewhere towards the foot of the hills in the plains of Campbellpore district, and Umar Khan (whose home is at Hayro) treats it as a commonplace that they breed in those hills, that is, the submontane ranges of the Himalayas from Murree to Attock and Peshawar; a very beautiful young Falcon which he brought me one year, he assured me had been caught practically as a "brancher." That they breed fairly close seems most probable, as these birds are caught in September and August and sometimes as early as July.

Possibly some day I may be posted to the extreme north of the Punjab and be able to settle the question, but in the meantime I must reiterate my opinion that the breeding Falcon of the N.W. Frontier Province is *Falco babylonicus* and not *F. peregrinator*, but shall be very glad to receive any proofs to the contrary.

Yours truly,

HUGH WHISTLER, M.B.O.U., F.Z.S.

(Indian Police.)

Jhang, Punjab.

19 September, 1918.

DEAR SIR,—Mr. Hugh Whistler has made some very interesting remarks on a recent little article of mine on the “Nidification of the Indian Peregrines” (Ibis, 1917, p. 224).

Mr. Whistler, I am afraid with some justice, calls attention to my rather loose use of the term “North-West Frontier,” for which I should have substituted “North and North-West India.” At the same time, although on p. 225 I quote many observers as having “declared that it bred in some numbers on the North-West Frontier,” I give no further details, and in the previous paragraph it will be noticed I remark “Peregrines of some kind.”

To be exact, all one can say from what has been already recorded, is that a Peregrine “of some kind” does undoubtedly breed on the extreme N.W. Frontier from Baluchistan to Chitral, and perhaps even farther north and east. This race is almost certainly *Falco peregrinus babylonicus*, but where it meets, as a breeding bird, *F. p. peregrinator* there is, as yet, not much evidence.

The only breeding birds I have seen from Kashmir have been of the latter form, and this *certainly* breeds as far north-west as Gilgit, though one female sent to me thence for identification was to some extent intermediate.

Subspecies, of course, are difficult to determine in the areas where they link up, and I should think that Mr. Whistler is probably correct in considering north and western Kashmir as the country in which the two forms are indeterminate, and that west of this only *babylonicus* is to be found. In the cold weather either form may be found almost anywhere in India, but naturally more *babylonicus* will be found in the north-west, more *peregrinator* in west and central India, and *only* this latter in the eastern province.

But there is yet another subspecies which visits India in the winter, and this is Latham's *F. p. calidus*, which breeds in the Kirgis Steppes and western Siberia and which is not easy to distinguish from *F. p. peregrinus*. This form seems (*vide* Hartert, Vög. pal. Fauna, ii. p. 1047) to have an

enormous winter range and may be found in any portion of the Indian Empire.

It will be most interesting if Mr. Whistler can obtain some nesting birds, but I think there can be no doubt that any obtained on the Baluchistan and Afghanistan borders will be *babylonicus*. Farther east the matter is perhaps open to doubt, and evidence is required to decide how far this bird breeds.

Yours truly,

Upper Norwood,

22 November, 1918.

E. C. STUART BAKER.

Mr. Harting and modern Nomenclature.

DEAR SIR,—I am surprised that Mr. Meade-Waldo regards my letter as gratuitously insulting, and can only infer that he has not read Mr. Harting's letters in 'The Ibis' and the 'Field' from 1913 onwards. I merely wished to point out that beyond the fact that Mr. Harting has been a member of the Union for so many years, he has no claim to dictate the policy of the Union in matters of nomenclature. In order to support this view I have quoted certain statements from his published works, only one of which I believe Mr. Harting admits to be erroneous. Readers of 'The Ibis' can draw their own conclusions on these points, but I regard the quotation from an author's works as fair material for criticism.

In 'The Ibis,' 1918, p. 336, Mr. Harting complains of the use of the name *Ixobrychus* on the ground that it is not to be found in Waterhouse's 'Index Generum Avium.' Is he aware that since 1889 Mr. C. W. Richmond has shown that over 500 generic names were omitted in that excellent pioneer work?

That Mr. Harting has done much useful work, especially on the "antiquarian" side of ornithology, I should be the last to deny, and I am glad to say that I thoroughly agree with what was written by him in 1872 on rules of nomenclature. "Once admitting the propriety of such

rules, the sooner they are carried into effect the better, for although it may be repugnant to the feelings of some to discard names with which they have become familiar, they should remember that these names may not be so familiar to others, and the only names which should really be so to *all*, are those which can be upheld on fixed principles by such rules as those above mentioned."

Yours truly,

Appleton Rectory,
Near Abingdon, Berks.
22 November, 1918.

F. C. R. JOURDAIN.

[No more letters on this matter can be accepted.—ED.]

Fourth Oological Dinner.

The fourth Oological Dinner was held at Pagani's Restaurant on Tuesday, 10 September, 1918, and was well attended in spite of war conditions, over thirty being present. Lord Rothschild was in the Chair, and the main subject selected for illustration was the range of variation in Limicoline eggs.

The Secretary (the Rev. F. C. R. JOURDAIN) read a short paper on "Subspecific distinctions in Eggs," in which he pointed out that while eggs of allied species and even genera are sometimes indistinguishable, there are numerous cases in which the eggs of subspecies show constant differences. As there are only a few cases in which more than one race of the same species breeds within the British Isles, this fact does not come prominently before the collector of British Birds' eggs, but it has long been known that the eggs of the St. Kilda Wren (*Troglodytes t. hirtensis*) differed constantly from those of the Common Wren (*Troglodytes t. troglodytes*). Another case which has not been previously noticed, is that of the British race of the Song-Thrush (*Turdus philomelus clarkei*), the eggs of which average larger than those of its Continental representative (*T. p. philomelus*). This was illustrated by a series of eggs taken in

France, Finland, and Roumania, not selected in any way, but all considerably below the average size of British eggs. A series of eggs of *Charadrius dubius curonicus* from such widely-separated localities as France, Spain, Germany, Central Asia, and Japan, showed little variation, but the eggs of *C. dubius jerdoni* from southern India, of which Mr. Stuart Baker showed a series, were remarkably different in size and type of markings. Another instance is that of the Mediterranean form of *Puffinus kuhli*, which lays a much smaller egg than the Atlantic race of the same species. The above instances are purposely chosen from birds on the British list, but might be indefinitely extended, and the speaker appealed for a closer study of the eggs of the various races of birds, urging that constant distinctions in the eggs were of as great importance as differences in shades of colouring in the adult.

MR. E. C. STUART BAKER exhibited some eggs of *Tringa guttifer*, Armstrong's Sandpiper, and made the following remarks :—

“The eggs which I am exhibiting to-night are, I believe, the first and only eggs ever taken of this rare Wader. The two clutches each of four eggs have been in my possession ever since 1911, when they were most generously given to me by Captain Stein, I.M.S., together with the rest of his most interesting collection of Tibetan eggs. In a letter accompanying them, Captain Stein said that they were the eggs of a small kind of Greenshank, with yellowish legs, which appeared to breed in company with Redshanks in the marshy land surrounding the Rhamtso Lake, between 13,000 and 14,000 feet elevation. The true Redshank bred there in some numbers, but this bird was rather larger and could be distinguished at a glance by its having yellow-green instead of red legs. Major F. M. Bailey does not appear to have noticed this Sandpiper, but observes that the Greenshank does not breed in Tibet though it passes through in some numbers on migration.

Although it seemed almost certain that the eggs were

those of Armstrong's Sandpiper, there was no real evidence to prove it, and the eggs were put on one side marked unknown. For several years one British Trade Officer after another did their best to get more eggs for me together with skins of the birds themselves, but all without result, though more than one confirmed the fact that Yellow-shanks, as they named them, did sometimes breed on the highest marshes, though the majority merely passed through on the way to their still unknown breeding-grounds.

At last, in March this year, I received from Mr. D. Macdonald a single egg together with the remains of the parent bird, which had been taken on the Rhamtso Marshes on 29 May, 1917. Although only the legs, wings, and a portion of the back, head and beak were left and the whole constituted only a very evil-smelling remnant, it was quite sufficient for identification, and a perfectly authenticated egg of Armstrong's Sandpiper had been obtained. This year I have had another single egg sent me by the same gentleman, taken at the same place on 5 June, 1918.

With these two well-authenticated eggs in my possession for comparison and the fact that there is no doubt that the eggs previously received had been laid by a bird of some sort with yellowish-green legs, I think we may accept them as good eggs of this *Tringa*.

Except that they average larger than the average Red-shank's, I do not think they could possibly be discriminated from those of that bird.

The eggs measure as follows :—

Clutch No. 1 F, taken 16.v.1910, Rhamtso Lake, about 14,000 feet elevation : 47.6×33.0 ; 48.0×32.2 ; 47.5×31.4 ; 47.8×31.6 mm.

Clutch No. 1 E, taken same date and place, but on lower marsh, about 13,700 feet : 45.9×31.4 ; 46.7×31.9 ; 46.1×31.6 ; 43.2×31.0 mm.

A single egg, taken same place, 3.vi.1909 : 47.7×32.7 mm.

A single egg, taken 29.v.17, same place, and sent me with skin : 46.3×34.1 mm.

A single egg, taken 5.vi.18, from same place : 45.8×33.1 mm."

In my second exhibit I show what I believe to be an authentic egg of the Large Sand-Plover (*Ægialitis Geoffroyi*).

This egg I obtained from Colonel R. H. Rattray, who in turn got it from a Captain Wilson. It was one of a clutch of four eggs, three of which most unfortunately got broken ; the parent bird was shot off the nest and sent with the one unbroken egg to Colonel Rattray. The remains of the very ragged skin were at first identified as the Small Sand-Plover (*Ægialitis mongolica*), but the size of the wing, just under 6 inches, showed it to be a specimen of the Large.

The egg is the usual *Ægialitis* shape and texture, though perhaps less pyriform than most, but in colour it is so completely *sui generis* that it may prove to be somewhat aberrant. The ground-colour is a pale grey stone-colour with a distinct olive tinge, and the markings consist of specks, irregular blotches, and scriggly marks (hardly lines) of dull sandy-brown and earth-brown. Under these are a few similar marks of pale lavender and neutral tint. One can hardly imagine a less conspicuous egg if lying in its nest on dirty sand.

It measures 33.1×23.5 mm.

It was taken in June, the early part of the month, close to Lake Tso Morari in Ladak.

In my third box I show another egg which I believe to be unique. This is an egg of the Masked Finfoot (*Helipais personata*). This egg is perhaps not altogether beyond doubt, so I give its history as told me by Dr. M. Gregerson, who gave it to me with the skin of the parent bird :—

It was taken by Dr. Gregerson and Mr. B. Nuttall when on a shooting trip in the uninhabited, almost unknown, swamps which stretch along the foot-hills of Assam and

between them and the Brahmapootra. These swamps are practically never traversed except by elephant-catchers and a few of the Hill tribesmen who come down to hunt for rubber and other forest produce. The waterways stretch for endless weary miles through forest, swamp, and jungle of the wildest description, now gorgeous green virgin forest, then impenetrable cane-brake, and again every now and then wide reaches of water overgrown with every conceivable kind of reed, grass, and water-plant.

Messrs. Gregerson and Nuttall were in a dugout, poling along one of these waterways, when they suddenly came round a sharp corner and emerged into one of these open parts. As they did so a bird slid off what appeared to be a small pile of dead rubbish just in front of them, diving at once, but reappearing at a little distance, when it was at once shot, proving to be a *male* Finfoot. After the bird had been recovered the "pile of weeds and rubbish" was inspected and found to be a nest containing the present egg.

The egg is a dull yellow stone-colour very faintly marked with a few spots and blotches of neutral tint. The texture is hard, close, and fine, and the surface smooth but with a few small pimples on it.

It measures 44.2×30.5 mm., and in shape is a regular but blunt oval.

It was taken on 24 July, 1904.

I also show a box containing fourteen clutches of eggs of *Calandrella brachydactyla longipennis*, the Tibetan, or Brooks' Short-toed Lark. There are four clutches containing four eggs, six containing three, and four two eggs each in this series, but, as a matter of actual fact, the number of eggs met with in a clutch is most often only two, sometimes three, and very rarely four. I have now seen about forty clutches of which seven have contained four, and have records of about fifteen other clutches none of which had more than three. It will be noticed that in the series exhibited the extreme in each type of coloration is shown in clutches consisting of but two eggs, and the next most noticeable point is that in several clutches the eggs vary

greatly in character and look almost as if laid by different birds, although I have no reason to believe this to be the case.

The average size of sixty eggs is 21.1×14.7 ; the longest egg is 22.6×14.4 ; the broadest 21.6×15.6 ; the shortest 19.4×14.6 ; and the most narrow 20.5×13.9 mm.

MR. PERCY F. BUNYARD exhibited the following eggs from his collection :—

Stone-Curlew (*Edicnemus edicnemus*). A series showing extreme and modified forms, also one clutch from Suffolk with greenish ground.

Cream-coloured Courser (*Cursorius gallicus*). An extremely beautiful and well represented series, all from Fuerteventura.

American Golden Plover (*Charadrius dominicus*). A typical clutch of four from Point Barrow, Alaska.

Golden Plover (*Charadrius apricarius*). An exceptionally fine series, showing three distinct ground-colours—green, cream, and reddish-brown—some of which were remarkably heavily pigmented; included in the series were also three clutches taken by the exhibitor in the Faeroes.

Kentish Plover (*Ægialitis alexandrina*). A well represented series from Kent, Channel Islands, and Holstein; among them were four exceptionally fine clutches of the scrolled or veined form, also a clutch of four.

Lesser Ringed Plover (*Ægialitis dubia*). Five clutches of four and one of five, all very typical.

Ringed Plover (*Ægialitis hiaticula*). A series showing great variation both in ground-colour and markings; some were heavily and others finely marked.

Dotterel (*Eudromias morinellus*). Two clutches from Scotland and seven from the Continent showing great variation.

Sociable Plover (*Chettusia gregaria*). Two clutches of four from the Crimean Heights.

Lapwing (*Vanellus vanellus*). A carefully selected series showing types and varieties; also the cyanic form, and

two remarkably fine erythristic eggs with very bright red ground.

Turnstone (*Arenaria interpres*). These exceptionally beautiful eggs were well represented by extreme, modified forms, and varieties.

Oyster-catcher (*Hæmatopus ostralegus*). A series showing the scrolled or veined and heavily blotched forms; also type clutches, one from the Faeroes and one from Kent. See Ticehurst, 'History of the Birds of Kent,' p. 435.

Corn-Bunting (*Emberiza calandra*). A clutch of four from Suffolk, with creamy white ground, and large conspicuous underlying markings showing through purplish grey.

British Song-Thrush (*T. m. clarkei*) × Blackbird (*T. merula*). A clutch of three eggs from a Blackbird paired with a Thrush, taken at Bexley Heath, Kent, by Mr. William A. Carter. Mr. Bunyard read the following communication from the taker:—"These eggs I took in the hedge at the bottom of my garden. I watched the whole process. A hen Blackbird built the nest and covered the eggs, but I never saw the cock Blackbird. On the other hand, a cock Thrush was always in the neighbourhood; the two birds were often together, and the Thrush used to sing while the Blackbird was covering the eggs. When I had assured myself that she would only lay the three eggs—this was also in June 1912—I took them; she had covered the three for nearly a week, but there was no sign of incubation and the contents of the egg almost entirely consisted of albumen. There were traces of yolk, but very slight, so I suppose they would never have hatched."

Mr. Bunyard then made the following remarks:—"I believe this to be the only really authenticated clutch known, the eggs bear characteristics of both species, the formation and the arrangements of the markings are those of the Thrush, and the colour that of the Blackbird—these are very distinctive in appearance."

Cuckoo (*Cuculus canorus*). Seven eggs from Surrey all from the same bird, all with eggs of the Whitethroat

(*Sylvia communis*). Four of these were exhibited at the Second Oological Dinner in 1916 ('Ibis,' 1917, p. 126); two were taken in 1917, and one in 1916. For further particulars of these remarkable eggs, which were all taken by the exhibitor, see 'British Birds,' vol. xii. p. 92.

Cuckoo (*Cuculus canorus*). Two eggs with those of the Red-backed Shrike (*Lanius collurio*), taken by the exhibitor this year in Surrey (see 'British Birds,' vol. xii. p. 115).

Razorbill (*Alca torda*). A very remarkable egg with a broad richly-pigmented band of brownish black on a creamy-white ground; at its broadest part the band measures 33 mm. One showing a yellowish ground with a few surface-markings of reddish brown, and large conspicuous underlying markings showing through greyish black—a rare variety. One with pinkish ground with veined markings of rich brown; the underlying markings are conspicuous and also veined: a very beautiful egg.

Common Guillemot (*Uria troille*). One with distinctly grey ground, surface-markings with black underlying marks showing through various shades of grey; one richly pigmented all over black-brown, with darker markings of the same colour; one with pale greenish-blue ground heavily veined olive-brown.

The Rev. F. C. R. JOURDAIN exhibited, in addition to the series of *Charadrius dubius* and *Turdus philomelus* referred to above, two sets of blue eggs of the Nightingale, *Luscinia megarhyncha*. The first was taken in Kent by Colonel Rattray in 1908 and were exhibited at the British Ornithologists' Club in 1916; while the second clutch of very similar colouring, but smaller in size, was taken in Staffordshire during the past season. All four eggs in the latter set proved infertile.

Mr. Jourdain also exhibited on behalf of Dr. W. Eagle Clarke a very large egg of the Guillemot, taken at Barra Head in 1918, and measuring 98·8×58·0 mm.

A very finely-marked Guillemot egg from the Treshnish Isles, Inner Hebrides, taken by Mr. O. A. J. Lee, and one of

the finest eggs of the Black Guillemot ever shown, taken on Fair Island, were also sent for exhibition by Dr. Eagle Clarke.

Lord ROTHSCHILD exhibited the following eggs from the Tring Museum :—

<i>Hæmatopus ostralegus.</i>	9 varieties.
„ <i>palliatu</i> s.	3 eggs.
<i>Ædicnemus ædicnemus ædicnemus.</i>	4 varieties.
<i>Vanellus vanellus.</i>	28 varieties.
<i>Squatarola squatarola.</i>	1 clutch, Lower Petshora.
<i>Charadrius hiaticula.</i>	4 varieties.
„ <i>dubius curonicus.</i>	6 varieties.
„ <i>ruficapillus.</i>	3 eggs, Queensland.
„ <i>pallidus.</i>	2 eggs, Gaboon.
„ <i>tricollaris.</i>	1 egg, South Africa.
„ <i>melanops.</i>	1 clutch, Queensland.
„ <i>sanctæ-helenæ.</i>	2 eggs, St. Helena
„ <i>peroni.</i>	2 eggs, Mengalum I., nr. Borneo.
<i>Thinornis novæseelandiæ.</i>	3 eggs, Chatham Islands.
<i>Recurvirostra avosetta.</i>	2 varieties.
<i>Numenius borealis.</i>	1 clutch, Lower Anderson River,
collected by McFarlane. This Curlew, the Eskimo Curlew, is now nearly extinct, but has still been observed in 1913 and a single specimen shot in 1915.	
<i>Numenius arquata arquata.</i>	1 variety.
<i>Tringa totanus totanus.</i>	10 varieties.
<i>Limicola falcinellus falcinellus.</i>	8 varieties.
<i>Gallinago gallinago.</i>	10 varieties.
<i>Scolopax rusticola rusticola.</i>	5 varieties.
<i>Philohela minor.</i>	1 clutch.
<i>Cœnocorypha aucklandica tristrani.</i>	1 egg, Antipodes Island.
„ „ <i>pusilla.</i>	1 clutch, Chatham Islands.
<i>Thinocorus orbignyianus.</i>	4 eggs, Bolivia.
<i>Chionis minor.</i>	2 eggs, South Orkney Islands.
„ <i>crozetensis.</i>	2 eggs, Crozet Islands.
<i>Anarhynchus frontalis.</i>	1 egg, New Zealand.

Mr. ROBERT H. READ exhibited a series of nests and eggs of Waders, few of which have been found nesting in the British Isles, and nearly all taken by himself.

From Norway.—Two nests and eggs of the Broad-billed Sandpiper (*Limicola falcinellus*), taken on the margins of

marshy pools in the Dovrefjeld, one amongst wet sphagnum and the other amongst coarse grasses just sprouting up on the muddy edge of the pool.

Nest and eggs of the Wood-Sandpiper (*Tringa glareola*) in a tussock on a dry part of the same marsh as the two foregoing were found.

Nest and eggs of the Great Snipe (*Gallinago media*) from the Romsdal Valley, taken by Dr. Cuthbert Christy on the dry sloping side of a hill.

From Sweden.—Nests and eggs of the Little Ringed Plover (*Charadrius dubius curonicus*) and Common Sandpiper (*Tringa hypoleuca*), the latter being unusually large pale eggs with small spots, much resembling eggs of the Green Sandpiper (*Tringa ochropus*). Both nests were on the same small island in a lake, the former on the shingly sand and the latter amongst heather.

From Denmark.—Nests and eggs of the Avocet (*Recurvirostra avosetta*), very exposed on short wiry sea-grass, and nest and eggs of the Reeve (*Machetes pugnax*) well concealed in long marsh-grass. Also one of a set of two eggs of the latter species, pale blue, and sparsely marked with a few minute black and brown dots.

From Spain.—Nest and eggs of the Pratincole (*Glareola pratincola*) amongst samphire on the dried-up marisma, and eggs of the Stilt (*Himantopus himantopus*) from the shallow waters of the marisma. Whilst photographing the latter Mr. Read was fortunate enough to get a good view of the famous wild camels of the marisma galloping away in the distance, the herd numbering some sixteen or eighteen head.

From Scotland.—Nest and three small eggs of the Common Sandpiper (*Tringa hypoleuca*). The average weight of these was less than half that of the eggs from Sweden above mentioned. Also a set of five fine eggs, without nest, of the Golden Plover (*Charadrius apricarius*).

Mr. Read also exhibited sets of small eggs of the Golden Plover and Lapwing (*Vanellus vanellus*) and other abnormal eggs of Lapwing, Oyster-catcher (*Hematopus ostralegus*),

Curlew (*Numenius arquata*), and Woodcock (*Scolopax rusticola*).

Major C. SMEED exhibited a clutch of eggs of Cream-coloured Courser (*Cursorius gallicus*), taken by himself in the Canary Isles in 1914. Also a remarkable set of 5 eggs of the Yellow Bunting (*Emberiza citrinella*) closely resembling those of the Corn Bunting (*E. calandra*), but from which the hen was identified by Lieut. J. S. Dyson, R.A.: also a set of 10 eggs of Little Grebe (*Podiceps ruficollis*) taken in 1918: a set of 5 pale blue eggs of Chaffinch (*Fringilla coelebs*) and one of 4, abnormally large: and a set of 4 Lapwing (*Vanellus vanellus*) with green zone round big end of the egg.

Mr. P. B. SMYTH showed a fine series of eggs of the Marsh-Warbler (*Acrocephalus palustris*), taken by himself in 1918 and showing a wonderful range of variation. This is the more remarkable, for as a rule the eggs of this species are not very variable. Two very pale sets from the same bird were especially noticeable.

Dr. J. WIGLESWORTH showed a very handsomely blotched clutch of eggs of the Ringed Plover (*Charadrius hiaticula*) from the Orkneys.

The proposed 'Systema Avium.'

The Committee of the B. O. U. has recently appointed a special committee to formulate plans for the preparation and publication, in conjunction with the American Ornithologists' Union, of a new list of the Birds of the World. As the matter will be submitted to the members of the Union at the Annual General Meeting, the Committee wish to let those who will not be able to be present, know what they are proposing to do.

As all working ornithologists are aware, the subject of nomenclature is a very difficult one, and even if the laws

of priority, as laid down under the rules of the International Zoological Congress, are strictly adhered to, there are many points, as, for instance, the limits of genera, and the amount of differentiation sufficient for the recognition of subspecies, which must always remain to a great extent a matter of individual opinion. The Committee believes that, if it is possible by the joint efforts of a body of English-speaking ornithologists to produce an authoritative list of the birds of the world, it would be of great use, especially to those whose interest in ornithology is with field-work or anatomy, and, furthermore, that it would tend greatly to stabilize our nomenclature.

The special committee appointed to take this matter into consideration is as follows:—Messrs. E. C. Stuart Baker, C. Chubb, W. Eagle Clarke, E. Hartert, T. Iredale, G. M. Mathews, Lord Rothschild, and W. L. Sclater. This committee has met several times and has communicated its plans to the Secretary of the A. O. U. They hope shortly to have a reply from the Council of that body, and if, as they hope, this is in favour of the project, they propose, with the co-operation of the Royal Australian Ornithologists' Union and that of other societies in English-speaking countries who may be interested in the matter, to carry out a scheme to this effect.

It is proposed to issue a series of six volumes, under the title of '*Systema Avium*,' each dealing with one of the zoogeographical regions—*i. e.*, Palæarctic, Indian, Ethiopian, Australian, Nearctic, and Neotropical.

For each volume a responsible editor will be appointed, but it is to be understood that the whole work should be subject to the revision of the Committee and that the arrangement and classification of each volume should be on the same lines, and that such generic and specific names as appear in any two or more volumes should be the same, so that complete uniformity might be secured.

Each list is to be drawn up somewhat on the lines of the recently published B. O. U. List of British Birds, but no

very definite plans can be formed, or decision taken, until the Committee hear whether the A. O. U. will co-operate with us in the matter.

Notice to Members.

The Annual Meeting of the British Ornithologists' Union will be held at 3.30 P.M. on the 12th of March next in the Meeting-Room of the Zoological Society in Regent's Park. It will be followed by the usual dinner, in conjunction with the B. O. C., at Pagani's Restaurant, Great Portland Street, W. 1. The Secretary hopes that all members who have candidates to propose will send him their names and addresses at once to Chief Police Office, West India Docks, E. 14. Furthermore, the Secretary would like to remind members who are proposing new candidates that they are expected to attend the meeting and speak on behalf of their nominees, or, if they are unable themselves to be present, to write to the Secretary on the qualifications of the proposed new members.

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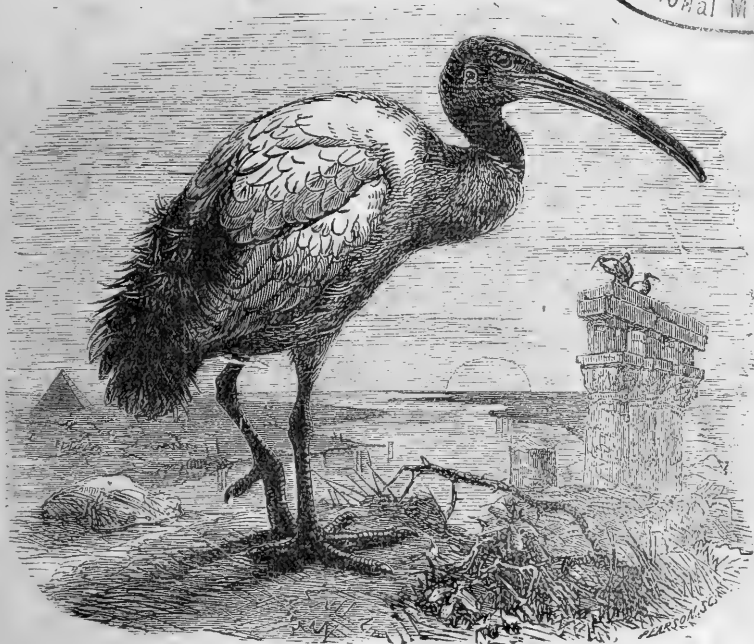
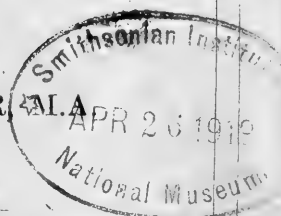
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QUARTERLY JOURNAL OF ORNITHOLOGY.

EDITED BY

WILLIAM LUTLEY SCLATER, F.L.S.

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VOL. I. No. 2. APRIL 1919.

X.—*Some Notes on Hieraaëtus ayresi Gurney Sen. (Lophotriorchis lucani Sharpe et auctorum).* By C. G. FINCH-DAVIES, Lt. 1st S.A.M.R., M.B.O.U.

(Plate III.)

IN writing these notes on this handsome little Hawk-Eagle, I do so with the idea, firstly, of doing something towards reducing to order the confusion that has occurred in the past between this species and *Hieraaëtus spilogaster* Du Bus. Secondly, in the hope that ornithologists at home, who have better opportunities and more material to work on than myself, may be able to add still further to our knowledge, and clear up any obscure points. Thirdly, to place on record the occurrence of this species in South Africa.

All my life I have been particularly interested in the "Birds of Prey," and during the last ten years have devoted especial attention to the South African species and have filled numerous sketch-books with paintings of them in various stages of plumage, and as a result of this and the examination of a large number of specimens, I have got to know the various species fairly well.

In February 1909, while stationed in eastern Pondoland, I received from a friend, who unfortunately was not very good at skinning, a somewhat mangled skin of a small

Hawk-Eagle, which I identified at the time as a small male of *Hieraaetus spilogaster*, although with a considerable amount of doubt, as it did not agree very well with Sclater's description of that species (Fauna of South Africa, Birds, iii. p. 299), and was, moreover, much smaller in every way than the dimensions given, and in fact much smaller than an adult female *H. pennatus* which I had shot a few days previously. I was, however, more satisfied when, a year or so after, I saw in the South African Museum at Cape Town, a very similar but rather larger specimen labelled *H. spilogaster*. In the meantime I had become fairly well acquainted with the true *H. spilogaster*, and as I never again met with a specimen agreeing either in size or colouring with the Pondoland or Cape Museum specimen, I began to think that either *H. spilogaster* was very variable in plumage or else there must be another species occurring in South Africa which had been confused with it. So when in Cape Town in 1915 I took the opportunity of re-examining the specimen in the Museum, and preparing a painting of it; I sent the painting and a description to Mr. Austin Roberts of the Pretoria Museum, and asked him if he could put me right. Mr. Roberts very kindly went into the subject for me, and pointed out that there was no doubt that the Cape Town specimen, and probably my Pondoland specimen also (which unfortunately I had not kept) belonged to *Lophotriorchis lucani* Sharpe, and also drew my attention to the fact that *L. lucani* and *H. spilogaster* had been confused by Erlanger, who, in the J. f. O. 1904, had figured the former as *H. spilogaster* and the latter as *H. fasciatus minor*. On examining these plates I saw at once that the Cape Town bird agreed fairly well with the lower figure in Erlanger's plate of *H. spilogaster*.

I now realized that here was the solution of my difficulties, and, on thinking the matter over, decided to send descriptions of *L. lucani* to the various museums in South Africa with a view to finding out whether there are other specimens. The result was most gratifying, as I found that every one of the following museums, viz. South African Museum in

Cape Town, Port Elizabeth Museum, Albany Museum in Grahamstown, Natal Museum in Pietermaritzburg, and Durban Museum, had specimens of *L. lucani*, and the Directors of these museums were most courteous in sending the details, and in several cases specimens for examination. I give details of these specimens below :—

South African Museum, Cape Town.—One specimen, adult, and presumably a female. Wing 16 inches. Collected at Feira on the Zambezi by Dr. Stoehr, 26. ii. 1904.

Transvaal Museum, Pretoria.—One specimen, adult female. Wing 16 inches. Collected by Mr. C. H. Taylor at Indhlovodwalile in Swaziland, 25. vii. 06. I have examined this specimen, which appears to be abnormal in more ways than one. In colouring it appears to be melanistic, the whole plumage being dark, especially on the underparts, where the black markings predominate to such an extent that the colour appears almost entirely black, varied with white spots. So dark is the bird that it was originally labelled *Lophoaëtus occipitalis*. The dark bars on the tail are somewhat distorted. The centre claw of each foot is deformed, on one foot a mere vestige, on the other turned up the wrong way; it does not look as if this had been caused by a trap.

Albany Museum, Grahamstown.—One specimen, female juv. Wing $16\frac{1}{4}$ inches. Collected in the Grahamstown district. I have examined this specimen.

Port Elizabeth Museum.—One specimen, female juv. Wing 16 inches; plumage somewhat worn. Shot in Port Elizabeth district. I have examined this specimen.

The Director in writing of this specimen notes : “in size it agrees with *H. pennatus*, but the toes are nearly twice as large.”

Natal Museum, Pietermaritzburg.—From descriptions sent me by the Director, there would appear to be about six specimens in the Museum collected in various parts of Natal. Wing-measurements varying from $16\frac{1}{4}$ to 15 inches.

Of two of these I have had photographs sent me ; both are undoubtedly referable to this species. One is a young bird, the other moulting into adult plumage.

Durban Museum, Durban.—One specimen, apparently an adult female. I have not seen this specimen, but the Director, Mr. E. C. Chubb, writes to me as follows : “ We possess a mounted specimen of a *Hieraaëtus* which has long puzzled me, the wing-measurement is $17\frac{3}{4}$ inches. The colour above is brownish black, most of the feathers tipped with white, including the nape, scapulars, coverts, secondaries, and upper tail-coverts. Most of the feathers have indistinct greyish bands about the middle of their length, and are white near the base. Head very dark brown, some of the feathers very slightly tipped with white, a crest about $1\frac{1}{2}$ inches long. Tail $8\frac{1}{2}$ inches. Feathers of tail dark brown with about four pearl-grey bands and tipped with white. Cheeks black ; throat, under surface of body, under tail- and wing-coverts white, densely spotted with black.”

The wing-measurement given above seems very large ; perhaps there is some error, but the colouring, especially of the cheeks and under surface, and the crest leave no doubt in my mind as to the species.

I will now discuss the question as to what name this species must bear in the future. I will first take the generic name. The genus *Lophotriorchis* was proposed by the late Dr. Bowdler Sharpe in the first volume of the Catalogue of Birds for the reception of two species of Crested Hawk-Eagle (*L. isidori* and *L. kieneri*), and when later he described the present species, he referred it to the same genus. I have no knowledge of the two above-mentioned exotic species, but after a careful examination of several examples of the present species, it seems to me that it is congeneric with the species usually referred to the genus *Hieraaëtus*, such as *pennatus*, *fasciatus*, *spilogaster*, etc. Certainly it has a short crest, but so also have *H. morphnoides* of Australia and *H. wahlbergi* of Africa (if the latter can be referred to this

genus, which is doubtful). So that in my opinion this species should be placed in the genus *Hieraaëtus*.

Now as to the specific name. As is well known to most ornithologists who have studied African birds, the Hawk-Eagle described by the late J. H. Gurney (*Ibis*, 1862, p. 149, pl. iv.) as *Spizaëtus ayresii*, has usually been referred to as the young of *H. spilogaster*. Now this description and plate have always puzzled me, until lately, as since I had got to know *spilogaster* in all stages of plumage, I had never seen a specimen quite agreeing with either description or plate, especially as I had never met with a specimen with a crest. As soon as Mr. Roberts put me right regarding *L. lucani*, as above mentioned, it struck me at once that here, very likely, was the solution of my doubts about Gurney's *S. ayresi*, and I became almost sure that *S. ayresi* Gurney would prove to be the young of *L. lucani* Sharpe. I was all the more inclined to this belief when I noticed in the late Mr. Gurney's "List of the Diurnal Birds of Prey, etc." p. 52, a footnote referring to *H. spilogaster*, in which the following occurs: "The immature specimen figured under the incorrect appellation of *Spizaëtus ayresi* in the 'Ibis' for 1862 is one of those in the Norwich Museum. The type-specimen of *Lophotriorchis lucani* of Sharpe and Bouvier, which is preserved in the British Museum, *also seems to me to be a young N. spilogaster*" (the italics are mine), from which it appeared to me that Mr. Gurney had noticed that his *S. ayresi* and Sharpe's *lucani* were identical.

However, my doubts were quite set at rest when I received a young specimen of *L. lucani* from Grahamstown, now in the Albany Museum, which agreed perfectly with both Gurney's description and plate. And therefore, as Gurney's name has considerable priority over that of Sharpe and Bouvier, I have great pleasure in restoring it to this handsome little Eagle, especially as the late Mr. J. H. Gurney, as well as being one of the original members of our Union, was our best authority on the birds of prey, and Mr. Tom Ayres, after whom this Eagle was named, was one of our

oldest and best South African field ornithologists. Therefore this Hawk-Eagle must in future be known as

Hieraaëtus ayresi Gurney. Ayres's Hawk-Eagle.

(Pl. III.)

Description. Adult female. Feira, Zambezi, 26. ii. 1904.

Head, including crest $1\frac{3}{4}$ inches long, and cheeks black, the bases of all the feathers white, a few white streaks on the cheeks next the throat, the black of the head gradually fading into dark sepia-brown on the mantle. The earliest scapulars white, forming a shoulder-patch, as in *H. pennatus*. The rest of the scapulars dark brown, with more or less concealed brownish-grey spots or bars towards the base, the extreme bases white. Primaries black at tips, hoary grey on outer web towards base, inner webs white barred with brownish black. Secondaries greyish brown, barred with brownish black, and with whitish tips; wing-coverts dark brown tipped with whitish, the greater series showing greyish bars. Under surface of wings white, spotted with black. Throat and whole under surface of body white heavily marked with brownish black, more in the form of streaks on the throat and in the shape of spade-shaped markings and bars on the sides of the breast and flanks. The thighs the same but the markings browner. The tarsi streaked. Under tail-coverts white with subterminal bar of dark brown, and a second bar of the same colour about halfway towards base. Upper tail-coverts dark brown, with whitish bars at tips. Tail grey, tipped with white, and with a broad subterminal bar and four narrower bars of brownish black.

Bill blue-grey tipped with black; cere and feet yellow; irides yellow.

Length 22 inches, wing 16, tail 9, culmen 1, tarsus $2\frac{3}{4}$.

Gurney's original description of *S. ayresi* describes a young bird perfectly.

I will now try to point out the characters by which this species can be distinguished from *H. spilogaster*, but before doing so I would like to mention that, although I have only been able so far to examine five specimens of *H. ayresi*,



HIERAAETUS AYRESI

three adults and two young, I have seen numerous specimens of *H. spilogaster* in all stages of plumage, living, dead, and skins.

In the first place, *H. ayresi* has a distinct crest $1\frac{1}{4}$ to $1\frac{3}{4}$ inches in length, but in mounted specimens and skins this is not always apparent unless looked for. *H. spilogaster* never has a crest, although, like many birds of prey, when angry or excited, it sometimes raises the feathers of the nape, giving a slightly crested appearance. Therefore, I venture to say, that all Hawk-Eagles that have so far been identified as *H. spilogaster*, if they have a crest will be found to be referable to *H. ayresi*.

Secondly, the question of size: *H. ayresi* is a smaller bird than *H. spilogaster*, but I am not quite sure whether it is a question of wing-measurement alone, as it has seemed to me that *H. ayresi* has a longer wing, in proportion to its size, but I have been handicapped in this matter by the fact that some of the specimens I have examined have apparently been wrongly sexed, as all have had approximately the same wing-measurement, *i. e.* 16 inches. I think we may safely say that the male of *H. spilogaster* and the female of *H. ayresi* are about the same size. It seems to me, however, that *H. ayresi* is a rather differently proportioned bird to *H. spilogaster*, having a longer tail and shorter legs than the latter, and more like *H. pennatus* in general appearance. Other differences that have struck me I give in the following parallel columns:—

Adults.

H. ayresi.

General colour above dark sepia-brown; head black, feathers of scapulars and greater wing-coverts with more or less concealed spots or bars of brownish grey, only extreme bases white. Many of these feathers tipped with whitish in fresh plumage.

Ear-coverts and cheeks black, very slightly streaked with white next throat.

H. spilogaster.

General colour above black or brownish black. The head the same colour as rest of upper surface, conspicuously varied on scapulars and wing-coverts, with white bars and mottling towards bases of feathers. These feathers never tipped with whitish.

Ear-coverts and cheeks white, streaked with black.

H. ayresi.

General colour of under surface white, heavily marked with black in the form of spade-shaped spots and bars, including thighs; the tarsi streaked.

Under wing-coverts white, spotted with black.

Smallest scapulars white, forming a shoulder-patch as in *H. pennatus*, not always apparent in skins unless looked for.

H. spilogaster.

General colour of the under surface white, streaked on the throat, breast, and flanks with black, the streaks broadest on breast and flanks; abdomen and thighs with only narrow streaks, sometimes immaculate; tarsi immaculate.

Under wing-coverts white, but with a large black patch formed by the broad subterminal bands on the larger coverts.

No white patch on the scapulars.

The differences between the young birds, although very distinct when the two species are compared, are not so easily described, as they are more a question of shade of colouring and shape of markings. The fact that *H. ayresi* at all ages possesses a crest, and also the white shoulder-patch, should be sufficient to distinguish it, though as I have said before, neither of these points are always apparent in skins. I will, however, try to give the differences in colouring as well as I can. *H. ayresi* is generally paler in colour above, though this depends somewhat on whether the feathers of either species are fresh or worn; it has, however, a conspicuous whitish-buff forehead and eyebrow, both of which are absent in *H. spilogaster*. In *H. ayresi* the secondaries are uniform dark brown without bars on the outer web. In *H. spilogaster* these are grey barred with dark brown, the grey fading to pale brown when the feathers become bleached.

In *H. ayresi* the general colour of the under surface is pale buff, darker on the sides of the breast, almost white on the abdomen and thighs, with almost spade-shaped marks of brown on the sides of the breast and narrow shaft-streaks on the centre of the breast and upper abdomen. The flanks with broader streaks and almost bare of dark brown. In *H. spilogaster* the general colour of the under surface is rufous-

buff, almost brownish rufous on the upper breast and fading into buff on the thighs and abdomen, broadly streaked with dark brown on the breast, and more narrowly on the flanks and upper abdomen; all these streaks are spear-shaped, and on the sides of the upper breast only the edges of the feathers are rufous.

How *H. ayresi* originally became confused with *H. spilogaster* I am not sure, but I think perhaps the late Dr. P. L. Selater may have been responsible, as I have found the following in the volume of 'The Ibis' for 1864, where Dr. Selater, in describing a collection of birds made by Dickinson on the Zambezi, makes the following remarks under the head of *S. spilogaster* (p. 304):—"This very interesting series shows that Mr. Gurney's *S. ayresi* is the immature form of *S. spilogaster*. Wolf's plate in the 'Ibis' represents the immature plumage in nearly every respect, except that Dr. Dickinson's specimens show still less signs of a crest than are depicted in the plate of *S. ayresi*, and the still younger bird has the under surface uniform brown, with scarcely a single indication of spots. In the youngest specimens . . . the under surface becomes white densely spotted with black spots, the tail being also strongly barred across. In the perfectly adult the spots wear off, and the bird becomes white beneath, with spots only on the breast and flanks. In this plumage the tail has a broad subterminal black bar."

From the above it seems clear to me that Dr. Selater had before him both adult and young specimens of *H. ayresi* and *spilogaster*. Again, Gurney in his excellent Notes on Sharpe's 'Catalogue of Accipitres in the British Museum,' writes as follows (Ibis, 1877, p. 421):—"There is, however, a variation in the markings of the under surface in specimens of *N. spilogaster*, to which I am desirous of briefly alluding. Two distinct phases of such markings occur in adult specimens, or at least in specimens which are so far adult as to have passed beyond the stage of plumage which characterizes this Eagle in its first year Thus in some individuals the white of the underparts is merely interspersed with sparse and narrow dark shaft-marks whilst in other specimens

the dark markings on the under surface are much more numerous and also very much broader.”

As late as 1904, Erlanger again confused the two species, as I have already mentioned. This was pointed out by Neumann in the Bull. B. O. C. xvi. 1906, p. 112.

I will now give some of the references which I consider applicable to this species, but as my scientific library is somewhat limited, I must be forgiven if my list is far from complete :—

Spizaëtus ayresii J. H. Gurney Sen., Ibis, 1862, p. 149, pl. iv.

Plate and description of young or immature specimen. Collected by T. Ayres in Natal.

Spizaëtus spilogaster P. L. Sclater, Ibis, 1864, p. 303 (part).

Lophotriorchis lucani Sharpe & Bouvier, ‘Bulletin de la Société Zoologique de la France,’ 1877, p. 471.

Description of young or immature from Landana, Portuguese Congo.

Nisaëtus spilogaster Gurney, ‘List of Diurnal Birds of Prey,’ 1884, p. 52, and footnote (part).

Aquila wahlbergi Sharpe, Ibis, 1898, p. 573.

Under this name Sharpe describes a specimen of a Hawk-Eagle, collected by Sowerby in Mashonaland, as follows :—“This is a very curiously coloured individual and is evidently, in my opinion, an immature bird, but it differs from all our specimens in the British Museum in being white underneath with a few arrow-shaped black streaks and bars. The upper surface is also mottled with white tips; the crown is white streaked with dark brown, with a very evident crest of pointed brown feathers.”

I think this specimen is probably referable to *H. ayresi*; it is certainly not *H. wahlbergi*.

Lophotriorchis lucani Shelley, Ibis, 1901, p. 594.

Describing a collection of birds from Nyasaland, Shelley writes as follows :—“This small Eagle somewhat resembles *Aquila wahlbergi* in size and in having a short crest on the hinder part of the crown, but may readily be distinguished

from that bird and from *N. pennatus* by having seven distinct dark bars across the tail and some blackish bars on the inner lining of the wings. *Lophoaëtus occipitalis*, the commonest little Eagle in the Nyasa district, has an extremely long crest, much darker plumage, and the tail crossed by only four dark bands. *L. lucani* in the pattern of the tail and under surface of the wings resembles the immature stage of *N. spilogaster*, but is a very much smaller bird, with the wing not more than 15·5 inches, which is the measurement of the wing of a specimen from Delagoa Bay, while in the type from Landana it is 14·6 inches, and in the present specimen only 13·7 inches."

From the above it would appear that Capt. Shelley had only seen immature specimens, and probably males judging from the wing-measurements, especially of the last.

Lophotriorchis lucani Sharpe, Ibis, 1904, p. 102.

Here Sharpe describes a specimen collected by Bates in the Cameroons as follows:—"♂ ad. Efulen, April 10, 1902, native name 'Ze-yôp.' The adult plumage of this interesting Hawk-Eagle has now been ascertained for the first time, and a brief description of it has been given, Bull. B. O. C. xii. 1902, p. 79. The general colour is black, with broad brown or greyish-brown bands on the scapulars, quills, and tail-feathers; sides of face black; under surface pure white, with a black patch on each side of the breast and black axillaries; thigh-feathers and under tail-coverts with large terminal black spots; under wing-coverts mostly black; quills white below with black tips and more or less remains of narrow black bars. Total length about 20 inches, culmen 1·45, wing 13·2, tail 8·5, tarsus 2·75."

Professor Neumann, in the Bull. B. O. C. xvi. 1906, p. 112, has stated his opinion that this specimen is in reality a small male of *N. spilogaster*. I rather doubt this, and the specimen should be re-examined.

Hieraaëtus spilogaster Erlanger, J. f. O. 1904, p. 184, pl. ix.

As mentioned before, Erlanger has figured this species under the above name from a pair collected in Somaliland.

Eutolmaëtus spilogaster P. L. Selater, Bull. B. O. C. xv. 1905, p. 67.

Dr. Selater exhibited and made some remarks on a Hawk-Eagle collected by Dr. Stoehr on the Zambezi, sent to him for identification by the South African Museum, Cape Town. He identified this specimen as *E. spilogaster*. This specimen is now mounted in the South African Museum, and is the original of my figure.

Lophotriorchis lucani Neumann, Bull. B. O. C. xvi. 1906, p. 112.

Professor Neumann exhibited a specimen from the late Freiherr C. von Erlanger's collection and stated that this was the first adult of this species he had seen, as he considered that the so-called adult specimen described by Sharpe was nothing but a male of *N. spilogaster*.

After pointing out Erlanger's mistake mentioned above, he went on to describe the following characters by which the two species might be separated. The colour of the under wing-coverts showed a large black patch in *spilogaster*, while those of *lucani* were white with numerous black spots. There was also an obsolete white shoulder-patch in *lucani* just as in *H. pennatus*, and it had been suggested by Kleinschmidt that *lucani* might be the African representative of *H. pennatus*. *L. lucani* was now known from Landana, Togoland, Mozambique, and South Somaliland.

Hieraaëtus lucani Zedlitz, J. f. O. 1910, p. 374.

Here Zedlitz quotes Neumann's remarks above, and gives details of some specimens of this species which he had examined.

Lophotriorchis lucani Claude Grant, Ibis, 1915, p. 245.

Grant describes a specimen collected by Capt. Cozens in Uganda as follows:—"Length in flesh $21\frac{1}{4}$ inches, wing 395 mm. In clean, apparently first dress, having light tips to the feathers of the head, back, wings, and rump. Irides yellowish brown, cere greenish, bill blue, tip black, feet pale yellow."

I have been unable to find anything of any interest recorded with regard to habits. Bates mentions that his Cameroon specimen had remains of some sort of squirrel in its stomach. My friend who sent me the specimen from eastern Pondoland, stated that this was one of a pair which had been chasing his tame pigeons. Judging by its proportions and likeness to *H. spilogaster*, I should think that, like that species, it was probably a highly predaceous species, preying on such birds and mammals as partridges, pigeons, hares, etc.

The distribution of this Eagle would appear to extend from Somaliland on the east and Togoland on the west, southwards probably as far as the Cunene River, on the west, then along the Zambezi, and through the eastern districts of South Africa as far as Port Elizabeth.

In concluding these notes I must ask to be forgiven if there is a lack of concise ideas, as I am no writer. I trust, however, that my words, and the accompanying plate, will lead to a better knowledge of this Eagle.

XI.—*Note on certain recently described Subspecies of Woodpeckers.* By H. C. ROBINSON, M.B.O.U., C.M.Z.S.

IN a recent number of this Journal (1918, pp. 107-109) Mr. C. Boden Kloss has described four additional subspecies of the Bay Woodpecker (*Micropternus brachyurus*) for which, however, in three cases no types have been designated, which is contrary to all modern practice.

As I have recently had access to the entire material on which these races are based and many additional skins, as well as to the important papers of Hesse* which were not available in the Malay Peninsula at the time Mr. Kloss wrote his paper, the following remarks may tend to elucidate matters.

* Berlin Mitt. Zool. Mus. vi. 1912, pp. 131-261.

† *Micropternus brachyurus williamsoni* Kloss.

This race was founded on a single male which I have examined, and appears fairly distinct when compared with *M. b. brachyurus*. It must, however, if distinct, have an extremely limited range, as specimens from Mergui are almost typical *M. b. phaiiceps*, while others from Bangkok are very much nearer to *M. b. burmanicus* Godwin-Austen. In any event very much larger series are required before, in so variable and difficult a group as these Woodpeckers, the race can be regarded as in any way established, and its description is a courageous act which it is devoutly hoped will not be largely imitated.

Micropternus brachyurus lanka Kloss.

The type and only specimen examined is a much deteriorated specimen so damaged in the region of the head that the sex cannot be stated with certainty. It was collected in Ceylon, probably in the southern districts, by E. L. Layard about 1845, and is No. 278 D. A.S.B. in the collection of the Zoological Survey of India (late Indian Museum, Calcutta). From the material it is impossible to express any opinion on the validity or otherwise of the race.

† *Micropternus brachyurus brachyurus* Blyth.

The actual types of this form are a male and female collected by E. Blyth in 1844 in the neighbourhood of Calcutta. Wing 115–121 mm.

Micropternus rufinotus Bp. described as from central Asia, but more probably from north-west India, is a synonym not of *M. b. phaiiceps* but of *M. b. blythii*, being a large-winged form.

Micropternus brachyurus humei Kloss.

This race, founded merely on Hume's remarks without the inspection of any specimens with presumably a type-locality of Rohilkund, which is coterminous with south-west Nepal, is almost certainly a pure synonym of the large-winged *M. b. blythii* (*vide* Hesse, Ornith. Monatsb. xix. 1911, p. 183).

***Micropternus brachyurus mesos* Kloss.**

The type of this form, which I tentatively suggest may be a natural hybrid between *M. b. phaiiceps* and *M. b. gularis*, is a female from Kuttak, No. 277 F. A.S.B., in the collection of the Zoological Survey of India (Indian Museum, Calcutta). The tail bands are broad and distinct, the shafts of the inner primaries dark, and the centres of the throat-feathers dark. Wing 110 mm.

+ *Chrysocolaptes strictus chersonesus* Kloss.

This form, on account of its extremely small size and isolated habitat, can be regarded as quite a good subspecies, but of *Ch. guttacristatus*, not of *Ch. strictus* from Java. Birds in which the females have the head spotted black and white in the one case, and in the other golden-yellow as in *Ch. strictus*, can hardly be maintained as races of the same species.

Though Singapore Island is mentioned first in the description, in view of the subspecific title, it is I think permissible to designate the other specimen examined as the type; this is a male from Si Karang, southern Johore, collected on the 1st of August, 1908, by H. C. Robinson and E. Seimund. Wing 148 mm. measured flat. Federated Malay States Museum No. 1940/08.

XII.—*Some Notes on Oriental Woodpeckers and Barbets.*

By E. C. STUART BAKER, M.B.O.U.

WHILST working out the Woodpeckers and Barbets in the collection of bird-skins collected by Mr. E. G. Herbert in Siam, I have taken the opportunity of going into the question of subspecies of the forms represented therein, and the following notes are the result of my investigations.

PICUS OCCIPITALIS.

I have been able to examine in the British Museum a series of seventy males and nearly as many females, which show that though there are certain differences between the birds

of different geographical areas, undue weight has sometimes been attached to alleged points of variation which are purely individual, and in some cases, perhaps, do not even exist. As regards size, the following table gives the wing-measurements of the Indian and Burmese birds examined:—

N.W. India	....	155 to 165 mm.	Average	158·8.
Nepal	.....	146 to 149 mm.	„	147·5 (3 birds only).
Sikkim	.....	130 to 149 mm.	„	142·0.
Assam	.....	136 to 148 mm.	„	142·0.
North Burma	....	144 to 151 mm.	„	148·5.
Central Burma	..	143 to 157 mm.	„	150·2.
South Burma	....	140 to 150 mm.	„	144·5.

Judging from measurements, therefore, it would seem that we have a large form from extreme north-western India, a smaller form from north-eastern India, and a bird intermediate in size from Nepal. From north and central Burma we have another intermediate-sized form, whilst from south Burma and northern peninsular Siam and Burma the form is again somewhat smaller.

In coloration there appear to be three quite distinct races in the above areas, which agree well with the three main divisions in size above referred to.

The north-west Indian and Nepal birds are green above with the rump tinged with yellow, sometimes fairly strongly so, and this is most noticeable in the Nepal birds, although these are so much smaller. The average wing-measurements of 20 birds is 158 mm.

Birds from Sikkim, Buxa Dooars, Assam, north and south of the Brahmapootra river, as far east as Sadiya and as far south as Tippera, are distinguished by being much suffused with golden bronze on the upper parts, most conspicuously so on the wing-coverts and inner secondaries; the rump and upper tail-coverts are much more yellow in some cases, being practically wholly of this colour, and below also the plumage is conspicuously tinged with bronze-yellow.

The average wing-measurement of 46 males is 142 mm.

The third geographical race, as shown by coloration, seems to extend over the whole of Burma, Siam, and northern

Malay Peninsula. In appearance this bird is very similar to those from north-west India, but it is duller, both above and below, and has no yellow-bronze tint like the Assam group, and very seldom any yellow on the rump and upper tail-coverts.

As regards names for this group, we have the following:—

(1) *Gecinus occipitalis* Vigors, P. Z. S. 1830, p. 8 : Mussoorie.

(2) *Gecinus hessei* Gyldenstolpe, Orn. Monatsb. xxiv. 1916, p. 28 : Siam.

Admittedly, all of these are nothing but geographical races of *Picus canus canus*, and will therefore bear that specific name.

Picus occipitalis was described together with *Picus squamicollis* in the P. Z. S. for 1830 as new species "from the Himalaya Mountains," but from what part of the Himalaya they came there is nothing to show, though the presumption is that *occipitalis* came with *squamicollis* from somewhere in the north-west. We may therefore consider Mussoorie the type locality for it.

We have, then, the following races in India and Burma:—

(1) *Picus canus occipitalis*.

Picus occipitalis Vigors, P. Z. S. 1830, p. 8.

Type locality. Mussoorie.

The largest of all the Indian forms, with a wing averaging 158 and varying between 146 and 165 mm. Above, the plumage is green with only a trace, sometimes rather pronounced, of yellow on the rump and upper tail-coverts. No bronze-yellow suffusion on the wings and upper plumage. The Nepal birds are small, as I have already shown, but there are only three very old, very worn skins, and for the present I prefer to keep them with this subspecies. They are not in the least like the next bird in colour.

Habitat. Western Himalaya, from Nainital, Mussoorie and Garhwal to east Nepal, north into south Kashmir, Simla States, and Kumaon.

(2) *Picus canus gyldenstolpei*.

Stuart Baker, Bull. B. O. C. vol. xxxix. 1918, p. 19.

Type locality. Sadiya, Assam.

Type No. 87.8.10.1023. ♂ ex Hume Coll. British Museum.

A medium-sized bird, with a wing of an average of 142 mm. and varying between 130 and 149 mm.

Distinguishable at a glance from every other subspecies by the strong bronze-yellow sheen on the upper plumage, especially on the wings. A bird from the area inhabited by this form can be picked out without hesitation from any number of allied skins.

Habitat. Sikkim, Bhutan, the whole of Assam, north and south of the Brahmapootra to the extreme east, and running south through Cachar, Sylhet, Manipur, Looshai Hills, Tippera, and Chittagong, being replaced in Arrakan by the next subspecies.

I can find no name applicable to this bird, and name it in honour of Count Nils Gyldenstolpe, who has done so much good ornithological work in the east with the Swedish Mission.

+ (3) *Picus canus hessei*.

Gecinus canus hessei Gyldenstolpe, Orn. Monatsb. xxiv. 1916, p. 28.

Type locality. Pak Koh and Denchai, northern Siam.

A rather larger bird, the wings of the specimens examined by me (60 birds) varying between 140 and 157 mm., and averaging 148 mm. Gyldenstolpe's, Herbert's, and Kloss's birds vary between 140 and 155 mm., and average the same as the Museum birds, 148 mm.

Differs from *P. c. gyldenstolpei* in being greener and in having no bronze-yellow reflections on the upper plumage and wings. It differs from *G. c. occipitalis* in being rather smaller, more green and duller both above and below. There is also decidedly more yellow on the rump and upper tail-coverts.

Count Gyldenstolpe named his birds from northern Siam specimens, of which I have now seen a fair series, and I cannot see any difference between these and normal Burmese specimens. Average measurements of this Woodpecker do not seem to decrease as one works south until practically the latitude of Rangoon is reached, but from this point there is a decided diminution which steadily becomes more pronounced down peninsular Burma and Siam. It does not appear desirable at present to make any further division between peninsular and southern Burmese birds, and I retain them all under Count Gyldenstolpe's name.

Habitat. Chin and Kachin Hills, and the whole of north and central Burma, north and central Siam, and peninsular Burma and Siam, as far south as Moulmein. Northern Shan birds approach the Yunnan form, whilst southern Shan specimens cannot be distinguished from those of Siam.

The Chinese form of *canus* also appears to be divisible into several subspecies, partly by measurement and partly by coloration.

The measurements of the fine Museum series of over 100 specimens are as follows :—

1. Foochow	Wing 139-151 mm.	Average, 142.5.	19 specs.
2. Fokien	„ 135-150 mm.	„ 143.5.	18 „
3. Chinkiang	„ 138-149 mm.	„ 142.0.	9 „
4. Ningpo	„ 140-151 mm.	„ 145.0.	13 „
5. Shensi, Ichang, { Hupeh, etc. }	„ 135-149 mm.	„ 144.0.	31 „
6. Setchuan	„ 141-152 mm.	„ 145.5.	5 „
7. Yunnan	„ 151-167 mm.	„ 157.0.	9 „
8. Formosa	„ 136-139 mm.	„ 137.1.	7 „
9. Hainan	„ 129-135 mm.	„ 132.0.	2 „

Colour differences are as follows :—

Birds from Foochow and Fokien, and presumably the rest of south China, are much darker than those from the north of the Yangtse river, thus forming a well-marked division between (1 & 2) and (3 to 5); birds from Setchuan

are darker than either of the first two groups, and somewhat browner in general tint. Those from Yunnan are much darker and duller than either of the other three groups, and the green is of a very sombre brownish tint, though the skins available are so bad that they may possibly look duller and browner than they should.

Formosan and Hainan birds are both darker green above than the adjacent Chinese birds, and are much browner and duller below, but I can find little difference in this respect between the birds of these two islands.

The following are the names available for the Chinese forms:—

- (1) *Gecinus guerini* Malh. Rev. et Mag. Zool. 1849, p. 539 : China.
- (2) „ *tancolo* Gould, P. Z. S. 1862, p. 283 : Formosa.
- (3) „ *hainanus* O.-Grant, Ibis, 1899, p. 584 : Hainan.
- (4) „ *sordidior* Rippon, Bull. B. O. C. xix. 1908, p. 32 : Yunnan.
- (5) *Picus canus setschuanensis* Hesse, Orn. Monatsber. 1911, p. 193 : Setchuan.

Taking into consideration colour and size combined, we seem to have the following well-marked eastern races in addition to those already enumerated for India and Burma:—

(4) ***Picus canus sordidior*.**

Gecinus sordidior Rippon, Bull. B. O. C. xix. 1906, p. 32.

Type locality. Yunnan.

A large bird with a wing averaging about 157 mm., and with very dull dead-green plumage, this being especially so on the lower parts. It cannot be confused with any other subspecies, but the specimens at present available for examination are very poor. Birds from north and north-east Shan States should be placed under this subspecies, though their colouring is not so definitely dull and dark as that of Yunnan birds.

Habitat. Yunnan and northern Shan States.

(5) *Picus canus guerini*.

Picus guerini Malh. Rev. et Mag. Zool. 1849, p. 539.

Type locality. China (apud Malherbe's Monograph).

This is a pale form, intermediate between typical *P. canus canus* inhabiting the extreme north of China etc., and the darker form inhabiting China south of the Yangtse Kiang river. In size the two appear to be much the same, 37 specimens of this subspecies averaging 143 mm. as against just under 144 mm. for 53 specimens of the southern bird.

Bill about 28 mm. and ranging from 26 to 30 mm.

Habitat. The provinces of Ningpo, Chinkiang, Hupeh, Ichang, and Shensi, north of the Yangtse river.

(6) *Picus canus setschuanensis*.

Hesse, Orn. Monatsber, 1911, p. 194.

Type locality. Setchuan.

A darker, duller bird than that found north or south of the Yangtse, nearly as dark, but not so dull as *sordidior*, from which it also differs in being decidedly smaller.

Wing average 145.5 mm.; bill about 29 mm., and varying between 26 and 32 mm.

Habitat. Setchuan only, so far as is known at present.

†(7) *Picus canus ricketti*, subsp. nov.

Types. ♂ 1914.4.8.261. F. W. Styan Coll. Brit. Mus.

♀ 1914.4.8.262. " " "

Type locality. Fokien, China.

Considerably darker than *guerini*, but, as shown above, not differing from it in size.

Wing about 144 mm., and varying between 135 and 151 mm. Bill about 28 mm.

Habitat. There are large series from Foochow and Fokien in the British Museum collection, and about half a dozen birds from localities farther west and south.

I can find no name for this bird, which has generally been considered to be the same as *tancole* from Formosa, and I have therefore the pleasure of naming it after Mr. C. B.

Rickett, well known for his work in China on ornithological subjects.

(8) *Picus canus tancolo*.

Gecinus tancolo Gould, P. Z. S. 1862, p. 283.

Type locality. Formosa.

Differs from south Chinese birds in being smaller; wing average 137·1, and bill about 26 mm., varying from 24·5 to 28, and in one case 30 mm. It is also a darker bird, and the under plumage is very distinctly duller and also browner.

(9) *Picus canus hainanus*.

Gecinus hainanus O.-Grant, Ibis, 1899, p. 584.

Type locality. Five-finger Mts., Hainan.

There are only two specimens of Hainan birds in the British Museum, but these are smaller than Formosan birds, with smaller bills, and are possibly also rather darker above and less brown below.

It is with some doubt that I keep them separate, but Dr. Hartert, who formerly considered the two subspecies identical (*Novitates Zool.* xvii. p. 222), informs me that a series of 12 birds in the Tring Museum bears out the above characters differentiating the two races, and that he considers they should be kept distinct.

Wing about 132 mm.; bill about 25 mm.

Habitat. Hainan.

PICUS VITTATUS.

Gyldenstolpe has recently described a new form of *P. vittatus* from northern Siam as *P. v. eisenhoferi*. The differences enumerated by him are as follows:—Size, larger than in *vittatus*, colour of upper parts bright grass-green instead of olive-yellow, rump-feathers tipped yellow, black cap on head larger. He also refers to the colour of the wings and the spotting of the quills. The wing he gives as 142 mm.

All these variations in plumage are purely individual, and even the difference in size between northern and southern

birds is much less marked than is generally the case, as may be seen from the following measurements:—

Java	.....	5 ♂♂.	Wings	129-137 mm.	Average	132 mm.
"	.....	7 ♀♀.	"	123-131 mm.	"	126.5 mm.
Malay States	..	4 ♂♂.	"	127-132 mm.	"	127 mm.
"	"	5 ♀♀.	"	127-130 mm.	"	128 mm.
Cochin China.	..	2 ♂♂.	"	128-130 mm.	"	129 mm.
"	"	3 ♀♀.	"	133-136 mm.	"	134 mm.
Siam	.....	3 ♂♂.	"	136-143 mm.	"	139.5 mm.
"	.....	9 ♀♀.	"	128-149 mm.	"	136 mm.

The largest bird in this series is a female with a wing of 149 mm. from as far south as Pakjan in peninsular Siam, whereas there is another female from as far north as Bangkok with a wing of 128 mm., smaller than any of the Javan males.

I can only distinguish two races of this Woodpecker:—

†(1) *Picus vittatus vittatus*.

Picus vittatus Vieill. Nouv. Dict. d'Hist. Nat. xxvi. 1818, p. 91: no locality.

Picus vittatus eisenhoferi Gyldenstolpe, Orn. Monatsb. xxiv. 1916, p. 28: Pa Hing, N. Siam.

Type locality. Malacca.

Habitat. Java, Malay States, western and eastern peninsular Siam and Burma, and thence into south-eastern Siam as far as Bangkok, and thence again, if Gyldenstolpe is correct as referring his birds as nearest *vittatus*, and not *viridanus*, well up into north-central Siam, also Cochin China. The exact range of *vittatus* and *viridanus* evidently wants more careful working out unless *eisenhoferi* is *viridanus*.

†(2) *Picus vittatus viridanus*.

Picus viridanus Blyth, J. A. S. B. xii. 1843, p. 1000.

Gecinus weberi Müller, Journ. f. Orn. 1882, p. 421: Salanga.

Type locality. Arrakan.

Differs from *P. vittatus vittatus* in having the whole of the underparts streaked from vent to upper breast.

Specimens of this Woodpecker vary to a very great degree *inter se* from all parts of the range. Thus three birds from Tounghoo are so different from one another that they might well be taken for three geographical races, if not for distinct species. One bird has the back bright grass-green, a second has it dull dark green, whilst the third has the whole of these parts covered with a bright bronze-yellow sheen.

In size they do not vary greatly, though, as usual, northern birds average a trifle larger than southern. But even in this respect the individual variation is so great throughout the range, that it does not seem advisable to attempt any division into geographical races on the ground of variation in measurements.

The birds obtained by Mr. Herbert appear to be the first actual record of its appearance in Siam, as all the birds from this country labelled *viridanus* in the British Museum are true *vittatus*.

Habitat. Burma, Chin Hills, Kachin Hills, southern Shan States, north and central Siam, and possibly the extreme west of peninsular Siam and Burma. *P. v. vittatus* appears to work up the eastern side of the peninsula into Siam and Cochin China.

The form found in the island of Salanga (*S. weberi*) is also nothing but *viridanus*.

† PICUS ERYTHROPYGIUS.

As at present accepted, there are two races of this Woodpecker, *P. e. erythropygius* from Cochin China, and *P. e. nigrigenis* from Burma, etc.

The only two birds of the former race which I have been able to examine are the type, a female in the British Museum collection, and a male in Lord Rothschild's Tring Museum. Mr. Kloss has, however, recently ascribed to this subspecies certain specimens obtained in Siam, and three specimens obtained by Mr. E. G. Herbert from the same country on the whole support his view. Mr. Kloss is not, however, quite accurate in referring to *nigrigenis* as "a very distinct subspecies and a far handsomer bird," for the difference

between the two forms is very slight, and, indeed, I can trace no difference beyond the fact that *erythropygius* has a white or whitish bill, and *nigrigenis* has a dark horny-coloured bill.

The alleged differences are (1) position and extent of red cap, (2) depth of yellow colouring below, (3) whitish or dark colour of bill.

The red of the head in the type of *erythropygius* is exactly matched by many specimens of *nigrigenis* from Burma, and this feature varies very greatly: thus in two birds from the same area we have two adult males; in one the red crown commences about 6 mm. from the bill, and extends back for about 25 mm.; in the second it commences a full 10 mm. back, and only extends for about 15 mm. In comparative size the red cap of the first is treble that of the second.

As regards the brightness of the yellow underparts, this character is equally variable and valueless, whilst some *nigrigenis* are much brighter, many are duller than the type of *erythropygius*.

The third and best distinction, the colour of the bill, is as follows:—In the type, which is a dismantled bird, the bill has been painted pure ivory-white, but under the paint it is a pale dull yellow, slaty on the gonys and also on the base of the lower mandible and on the upper mandible just beyond the nostril. The bill of the male in the Tring Museum is ivory-white.

Mr. Herbert's birds and one collected by Hume at Meklong, Siam, are nearer *erythropygius* than *nigrigenis*, if the two forms are divisible. The male has the bill slaty horny, the lower mandible nearly all yellowish white, and the upper mandible splashed with the same. The females have the bill very pale; in one it is all a dirty horny white with dark base and a dark streak running through the nostril exactly as it does in the type.

The bills of *nigrigenis* are generally horny black, or dark horny, but in many cases they are more or less marked with yellowish white, and this occurs in specimens from areas as far apart as Pakjan, Kolidoo, and Thoungyeen.

As regards size, the two races seem much the same. The wing of the type of *erythropygus* is 160 mm., of the Siamese birds from 152 to 165 mm., whilst Mr. Kloss's birds run from 140 to 161 mm. measured on the curve.

Of the 48 skins of *nigrigenis* in the British Museum the extremes in length of wing are 147 and 165 mm.

LYNGIPICUS CANICAPILLUS.

I have not yet had time to work out all the subspecies of the genus *Lyngipicus*, but there appear to be two species admitted in the British Museum Catalogue which cannot be maintained, viz., *pumilus* and *auranteiventris*.

Blanford has already pointed out (Fauna Brit. Ind., Birds, iii. p. 46) that *pumilus* cannot possibly be separated from *canicapillus*. Of the series of so-called *pumilus* in the British Museum the wings vary from 70 to 81 mm., and those of *canicapillus* from 74 to 87 mm., but both so-called subspecies occur in the same area, and it would really seem as if Hargitt had picked out the smallest birds with wholly black rectrices and given them the same name, and then picked out some larger ones with spotted rectrices and called them *canicapillus* (according to Blyth). The remaining birds seem to have been almost indiscriminately assigned to either.

Amongst the so-called *pumilus* many have more or less white on the tail, and again among Hargitt's *canicapillus* there is a bird with a wing of 86 mm. with the central rectrices quite black.

Exactly parallel to the above two forms are those of *aureiventris* and Hargitt's *picatus*. In the Museum there is a specimen of each shot on the same date at the same place, and it is probable that the latter is nothing but an extra worn specimen of the former.

CHRY SOPHLE GMA FLAVINU CHA LYLEI.

Chrysophlegma flavinucha lylei, Kloss, Ibis, 1918, p. 110.

This race, which Kloss describes from a single specimen, appears to me to be only *C. f. pierrei*. His bird was obtained

from Koh Lak, south-west Siam, and two specimens, a male and a female, have now been sent home by Mr. Herbert from Chan Tuek and Pakchan, from the same part of Siam. These two latter are undoubtedly nothing but *pierrei*. The male has a wing of 152 mm., and the female 148 mm., whilst the type of *pierrei*, a female, has a wing of 156 mm. Mr. Herbert's birds also have the pale upper and under plumage of *pierrei*, contrasting well with *wrayi* in this respect.

The other differences noted by Dr. Kloss, *i. e.*, the paler bill, nearly black centres to the forehead and dark sides of head and neck, are not present in Mr. Herbert's specimens, which agree perfectly with *pierrei* in these details.

The wings of *C. f. wrayi* in the British Museum collection vary between, ♂ ♂ 140–141 mm., ♀ ♀ 140–148 mm., and it is possible that with more material *wrayi* and *pierrei* may prove to be one and the same. *C. f. flavinucha* varies considerably in the depth of colouring on the lower plumage, some individuals being much darker than others, and though *wrayi* from the south would also appear to be much smaller on an average than *pierrei* from the north, yet one female, *wrayi*, from Salanga, is the same size as Mr. Herbert's bird from Chan Tuek, a very long way farther north.

CALLOLOPHUS MINIATUS PERLATUS.

Callolophus miniatus perlatus Kloss, Ibis, 1918, p. 110.

Mr. Kloss, who creates this new subspecies on a single unsexed specimen from Koh Lak, south-west Siam, diagnoses it as bigger than *C. m. malaccensis*, having a wing of 137 mm., and says that it differs in having the breast and abdomen paler, the ground-colour being less tinged with brown, and the dark bands narrower and farther apart; the nuchal crest is without spots and bars.

There are other specimens from Siam in the British Museum collection, and these do not bear out Mr. Kloss's diagnosis, but show, as do the other birds in this big series, that all these so-called subspecific variations are merely individual, occurring in some specimens throughout the

whole area. Nor is Mr. Kloss's bird any larger than many typical *malaccensis* from the extreme south.

This subspecies cannot be maintained.

+CHRYSOCOLAPTES GUTTACRISTATUS.

Chrysocolaptes guttacristatus has sometimes been held to be a mere subspecies of *Chrysocolaptes strictus* of Java. This seems to me to be quite unnecessary, for we have the broad dividing line between the two in the fact that the females possess, the one a black crown, the other a yellow one. Nor is this difference anywhere bridged over by intermediate forms, and though both birds probably came from the same stock comparatively recently, nature has now eliminated the useless intermediate forms and created a definite species.

Chrysocolaptes guttacristatus must, however, be divided into certain geographical races, a matter of even greater difficulty, however, than is usual with such divisions. I have had some 300 specimens for the purpose of examination, and throughout the whole of its vast range, from southern India to the south Malay Peninsula, I can find no variation in plumage which in any way helps me to define the subspecies. I am therefore thrown back upon the size of the bird and comparative size of bill as the sole features of distinction.

Eliminating young and moulting birds, the measurements have been taken of 193 specimens, divided as follows, females and males being considered together, as there appears to be no sexual difference in size :—

North-west India	9 birds.	Wings 177-190 mm.	Average 184.
		Bills 50- 63·5 mm.	
Nepal	10 „	Wings 172-182 mm.	„ 177·8.
		Bills 50- 63·5 mm.	
Sikkim and Dooars . .	24 „	Wings 164-177 mm.	„ 170·8.
		Bills 43- 50 mm.	
Assam, N. and S. . . .	18 „	Wings 164-177 mm.	„ 171·5.
		Bills 43- 50 mm.	
Chin to Shan States . .	6 „	Wings 163-178 mm.	„ 169·0.
		Bills 50- 57 mm.	

South Siam	6 birds.	Wings 157-171 mm.	Average 166.0.
		Bills 40-45 mm.	
Burma, S. to Rangoon . 23	„	Wings 160-177 mm.	„ 166.2.
		Bills 55-60 mm.	
S. Burma and Malay . 59	„	Wings 150-172 mm.	„ 159.9.
		Bills 38-45 mm.	
South & Central India . 35	„	Wings 145-159 mm.	„ 152.0.
		Bills 38-45 mm.	

It appears, therefore, that there is a very large race with an enormous bill found in the northern Himalayas, Mussoorie, and Nepal.

A second, rather smaller bird in Sikkim and Assam, with a relatively smaller bill.

A third, which is about the same size, but with a larger bill, in the Chin and Shan States.

A fourth, in Burma, very similar to that in the Chin and Shan States.

A fifth, exactly the same as the southern Indian bird, in peninsular Burma and Siam and the Malay States.

A sixth, small form with very small bill in southern and south-central India.

Of these there do not appear to be sufficient grounds for dividing the second, third, and fourth from one another.

The first stands out on account of its great size and very large bill, but few birds having this latter under 60 mm.

The fifth and sixth are indivisible in colour or size of bill.

The following are the names available :—

Picus guttacristatus Tickell, J. A. S. B. ii. 1833, p. 578 :

Borabhum, *i. e.* Manbhum, south-west Bengal.

Picus strenuus Gould, P. Z. S. 1839, p. 165 : Assam.

Picus sultaneus Hodgson, J. A. S. B. vi. 1837, p. 105 : Nepal.

Indopicus delesserti Malherbe, Mém. Acad. Metz, 1848, p. 343 : Malabar.

Chrysocolaptes g. indomalayicus Hesse, Orn. Monatsb. xix. 1911, p. 182 : Salanga.

Chrysocolaptes strictus chersonesus Kloss, Ibis, 1918, p. 113 : Southern Johore, *vide antea*, p. 181.

? *Chrysocolaptes bacha* Reichenb. Scans. Picinæ, 1854, p. 399 : Central Asia.

The type of *P. guttacristatus* was obtained in Borabhum in Manbhūm, Bengal, and is a bird with a wing of 166 mm. and a small bill. It is certainly not the same as the big Nepal bird, which Hodgson later on called *sultaneus*, but is much the same as many Assam and Burmese birds, and all these latter seem referable to the same name.

I admit the following three forms:—

(1) *Chrysocolaptes guttacristatus guttacristatus*.

Picus guttacristatus Tickell, J. A. S. B. ii. 1833, p. 578 : Borabhum.

Picus strenuus Gould, P. Z. S. 1839, p. 165 : Assam.

A medium-sized bird with wing varying between 157 and 178, average 168·4 mm., and with bill between 43 and 60 mm. ; in Bengal and Assam birds the bill is never over 50 mm , but in Burmese birds always 50 or over.

Habitat. Bengal, from Chota Nagpore and Behar east to Assam, north and south of Brahmapootra river, Cachar, Tippera, Manipur, Looshai, Chin and Kachin Hills, Shan States, northern and central Siam, and the whole of Burma, north of Rangoon and the latitude of that place.

If it be considered desirable to divide the Burmese from the Assam and typical birds on account of their rather smaller size and larger bill, they would have to be given a new name, as there is none at present applicable.

(2) *Chrysocolaptes guttacristatus sultaneus*.

Picus sultaneus Hodgson, J. A. S. B. vi. 1837, p. 105 : Nepal.

? *Chrysocolaptes bacha* Reichenb. Scans. Picinæ, 1854, p. 399 : Central Asia.

This is a very large form with wing between 172 and 190 mm., average 180·5 mm., and a bill between 50 and 63·5 mm., very rarely under 60 mm.

Habitat. N.W. India, Mussoorie to Nepal. Nepal birds average rather smaller than the N.W. Indian ones, but they all have the same enormous bill.

(3) *Chrysocolaptes guttacristatus delesserti*.

Indopicus delesserti Malh. Mém. Acad. Metz, 1848, p. 343 : Malabar.

Chrysocolaptes guttacristatus indomalayicus Hesse, Orn. Monatsb. xix. 1911, p. 182 : Salanga I.

Chrysocolaptes strictus chersonesus Kloss, Ibis, 1918, p. 113 : S. Johore.

Habitat. Southern India, south of Bombay in the west and Orissa in the east, peninsular Burma, Siam, and the Malay peninsula.

A small bird with wing between 145 and 172 mm. and average 157 mm., and bill between 38 and 45 mm.

It seems to me to be inadvisable to separate the south Indian from the south Burmese birds, the same results in each case having presumably been arrived at by parallel evolution. Those who refuse to accept under the same name the same bird from two widely different areas would have to use the name *indomalayicus* for the Burmese-Malayan form, but the only difference between the two is the slightly larger average size of the latter.

Robinson (*vide* page 181) gives the length of wing of Kloss's *chersonesus* as 148 mm.; this is a trifle under the size of any specimen from the British Museum series, but is not sufficient reason alone for naming it as a separate subspecies. There are specimens from Johore in this collection with wings exceeding 170 mm.

MICROPTERNUS BRACHYURUS.

Mr. Boden Kloss has recently (Ibis, 1918, pp. 107 *et seq.*) created many new subspecies of this Woodpecker, in some cases it would seem with hardly sufficient material, although the net results are very accurate. Six races are comparatively well defined by colour-differences, these being *M. b. brachyurus*, *M. b. gularis*, *M. b. phaiiceps*, *M. b. fokiensis*, *M. b. badius*, and *M. b. holroydi*. The Indian and Burmese birds Mr. Kloss splits up into further subspecies—*lanka* from Ceylon, *blythii* from the eastern Himalayas, *mesos* from ? Cuttack, Calcutta and Bengal, *burmanicus* from

Burma, *humei* from the north-west Himalayas, and *williamsoni* from Siam.

Mr. Kloss divides all forms of *Micropternus* from India, Burma, Malay, and Siam into two groups: (1) *brachyurus* group, with the shafts of the wing-quills more or less blackened; and (2) *phaiiceps* group, in which the shafts are perfectly unsullied red.

I have examined roughly some 400 specimens of this Woodpecker, and my examination shows that this division into two groups is not very good, as it breaks down when a large number of skins are considered. On the whole, however, we do find that the *brachyurus* group has more black on the wing-shafts than has the *phaiiceps*. The following figures show this:—

<i>brachyurus</i> from:	Dark shafts.	Red shafts.	
Klang	12	0	
Tenasserim	42	18	
Malacca	26	6	
S. Malay, various places ..	13	2	
Sumatra	8	1	
Singapore	2	0	103 and 27 respectively.

phaiiceps from:

N.W. India	0	8	
Nepal and Sikkim	12	23	
Bengal and Behar	7	0	Black, varying in extent.
Assam and Cachar	9	22	
N. and Central Burma	9	9	
S. Burma	19	10	
S. Shan States	2	1	58 and 73 respectively.

This suffices to show that we cannot rely on this feature to distinguish between the two groups, neither is it necessary to do so, as the character usually accepted, that of the marking on the chin, is a good one, differentiating plainly between *brachyurus*, *phaiiceps*, and *gularis*. In the first, *brachyurus*, and the second, *phaiiceps*, the feathers of the chin and upper throat have dark longitudinal centres with pale edges, the general appearance being streaky; *gularis*, on the other hand, has these feathers dark with narrow

terminal pale markings almost white, which make this part of the bird look squamated. Between typical specimens of *brachyurus* and *phaiiceps* it is also easy to distinguish, as the former has the feathers of the throat with the centres of a darker colour than the breast, whilst the latter has them concolorous with it. In the portion of the two birds' habitat where they overlap, both dark- and light-coloured throats are met with, and this obtains over practically the whole of southern Burma, south-western Siam, and the north of peninsular Siam and Burma.

A very careful examination of the long series which I have had the advantage of consulting, shows that there is no other stable difference of colour in any of the various proposed races which would suffice to distinguish them from any other. At first I was inclined to think that Kloss was right in separating the Ceylon bird (*lanka*) on the ground of its being a brighter bay in colour than those from continental India. Of the sixteen birds from Ceylon in the British Museum collection, three are a very bright bay, but a hunt amongst skins from elsewhere has produced similar brightly-coloured individuals of *gularis* from Travancore, Ootacamund, and Madras, and of *phaiiceps* from Nepal and Assam. This characteristic seems, therefore, to be valueless.

As regards the barring on the under parts, beyond the fact that as a whole *brachyurus* is far more heavily marked than *phaiiceps*, nothing more can be said. There are specimens from Sikkim of the latter form far more heavily marked than are many individuals of *brachyurus* from Malacca, and throughout the range of *Micropternus* this character is one which varies to an extraordinary degree.

Micropternus b. williamsoni is said to differ from other races in having more narrow shaft-streaks on the chin and throat-feathers, no pale shaft-stripes on those feathers, darker breast, dark bars on the tail narrower, and narrower bars on the back and wings. Now all these characters are purely individual and obtain in odd specimens in birds from Sikkim, Assam, Chin Hills, north, south, and central Burma, and Siam itself. But there is one feature of the Siam birds which,

if constant, would entitle it to subspecific rank, and that is the immaculate upper back and scapulars. Of the five Siamese specimens I have examined, four have these parts quite immaculate, and the fifth almost so. Mr. Kloss does not mention this feature, so presumably his specimen—a single one again—was barred on the upper back. Of course, specimens with the back and scapulars immaculate are found everywhere, and there are such specimens in the British Museum collection from Kumaon, Nepal, Behar, and Tenasserim. Such are, however, quite exceptional, and it is curious that the only five examples of the Siam bird which I have been able to examine should be all alike in this respect.

As regards colour-variation, nothing further need be said except that I cannot find the slightest difference between the races named *mesos*, *blythii*, *burmanicus*, and *humei*, so that eventually we are thrown back upon variation in size alone if we wish to divide *phaiiceps*, *brachyurus*, or *gularis* into further local races.

Micropternus brachyurus brachyurus group.

The following table gives the measurements of adult non-moulting birds in the Museum collection. The places cited are those marked on the labels, but some birds with non-authentic data have been omitted:—

Sumatra	Wing 101–114 mm.	Average 106·5.	8 specimens.
South Malay,			
various places..	„ 106–115 mm.	„ 110·2.	15 „
Malacca	„ 99–115 mm.	„ 107·5.	26 „
Singapore	„ 113–117 mm.	„ 114·5.	3 „
*Tenasserim	„ 107–132 mm.	„ 121·5.	56 „
Klang	„ 109–116 mm.	„ 110·0.	12 „

Measurements would thus seem to show that we have two races of *brachyurus*, one from Sumatra and the southern Malay Peninsula, with a wing averaging under 110 mm., and never exceeding 117 mm., and a second race from the northern Malay, Siamese and Burmese peninsular areas, with a wing averaging over 121 and seldom under 115 mm.

* This includes birds as far north as the north of peninsular Siam and Burma, but the largest bird, a female, with wing of 132 mm., comes from Amherst.

I can see nothing in coloration to support this decision, and over much of the northern area both *phaiiceps* and *brachyurus*, together with many intermediate individuals, occur in great numbers.

Micropternus brachyurus phaiiceps group.

This subspecies varies little more in size than does *M. b. brachyurus*, as the following shows :—

N.W. India	Wing 126-142 mm.	Average 132.	8 birds.
Nepal and Sikkim	„ 117-130 mm.	„ 123.	35 „
Bengal and Behar	„ 112-123 mm.	„ 116.	7 „
Assam to Tippera	„ 111-129 mm.	„ 118·7.	27 „
N. and Central Burma . .	„ 120-133 mm.	„ 126·9.	18 „
S. Burma	„ 117-131 mm.	„ 125.	29 „
S. Shan States	„ 123-129 mm.	„ 125·5.	3 „

The above table therefore shows that we have a very large form in north-western India, an isolated small form in Bengal and Assam (practically all these latter are from south of the Brahmapootra), and a third stretching from Nepal and Sikkim right away to the extreme south of Burma, where it meets true *brachyurus*.

Micropternus brachyurus gularis group.

Ceylon	Wing 112-119 mm.	Average 115·5.	16 birds.
Travancore	„ 110-120 mm.	„ 116·4.	9 „
Neilgherries and South Madras	„ 117-126 mm.	„ 122·0.	13 „
N. of Neilgherries	„ 113-129 mm.	„ 122·0.	16 „

Of *gularis*, therefore, we have two possible races, one from Ceylon and Travancore, with a wing of about 116 mm., and a second from the rest of southern India, with a wing of about 122·0 mm., a difference of 6 mm. only, not supported by any colour-differences.

To summarize results by measurements, we have the following :—

Micropternus brachyurus brachyurus group.

- (1) Southern Malay Peninsula
and Sumatra Wing about 108·8 mm. 64 specimens.
- (2) Northern Peninsula, Burma
and Siam „ „ 121·5 mm. 56 „

Micropternus brachyurus phaiiceps group.

- (1) N.W. India Wing about 132.0 mm. 8 specimens.
 (2) Bengal, Behar and Assam,
 S. of the Brahmapootra. ,, ,, 118.1 mm. 34 ,,
 (3) Nepal, Sikkim, Assam, N.
 of the Brahmapootra,
 Burma and Shan States. ,, ,, 124.4 mm. 85 ,,

Micropternus brachyurus gularis group.

- (1) Ceylon and Travancore .. Wing about 115.8 mm. 25 specimens.
 (2) Remaining South India to
 Orissa ,, ,, 122.0 mm. 29 ,,

The names and range for these subspecies will be as follows :—

(1) *Micropternus brachyurus brachyurus*.

Picus brachyurus Vieill. Nouv. Dict. d'Hist. Nat. xxvi. 1818, p. 103 : Java.

Habitat. Malay Peninsula, Sumatra and Java.

Chin and throat streaked with brown, darker than the colour of the breast. Smaller ; wing about 109 mm.

(2) *Micropternus brachyurus williamsoni*.

Micropternus brachyurus williamsoni Kloss, Ibis, 1918, p. 107 : Koh Lak, S.W. Siam.

Habitat. Peninsular Siam and Burma.

Larger ; wing about 121 mm.

Even if Kloss's description of his new subspecies does not hold good, this is the only name applicable to birds from this region, and will therefore stand ; if, however, the Siamese bird proves different in the colour of the back to other north peninsular forms, the latter will then require a new name.

(3) *Micropternus brachyurus phaiiceps*.

Micropternus phaiiceps Blyth, Journ. As. Soc. Beng. xiv. 1845, p. 195 : Arrakan.

Habitat. The type of *phaiiceps* comes from Arrakan ; this name will therefore apply to the birds found throughout

the eastern Himalayas from Nepal, Assam, north of the Brahmapootra, and the whole of Burma north of the Peninsula, Shan States and north and west Siam.

Streaks on throat of the same colour as the breast. Size medium; wing about 124 mm.

The name *rufinotus* is a synonym of *gularis*. The specimen said to be the type is marked as having been taken by McClelland in Assam; in the B.M. Catalogue it is said to come from Bengal, but the bird itself is a typical *gularis* from southern India.

(4) *Micropternus brachyurus humei*.

Kloss, Ibis, 1918, p. 109: Rohilkund (*vide supra*, p. 180).

Habitat. North-western Himalayas. There are specimens from Kumaon, Dehra Doon, Nainital, and Buxa in the Natural History Museum.

A very large bird, with a wing averaging 132.0 mm.

(5) *Micropternus brachyurus mesos*.

Kloss, Ibis, 1918, p. 109: Kuttak, Orissa (*vide supra*, p. 181).

Habitat. Bengal, Behar and Assam, south of the Brahmapootra river to Tippera, but not to Arrakan.

A small bird, with a wing of 118 mm.

Here again Kloss's name must stand, though his diagnosis cannot be fully confirmed. Also it is unfortunate that he should first give a new name to a bird from Bengal and then state on the same page that the type locality for typical *phaiiceps* is also Bengal. I have already shown, however, how this very pardonable mistake arose.

(6) *Micropternus brachyurus gularis*.

Picus (micropternus) gularis Jerdon, Madr. Journ. xiii. 1844, p. 139: Southern India.

Habitat. South India, from Orissa on the east and Bombay on the west, but excluding southern Travancore.

Chin- and throat-feathers squamated, not streaked. Larger; wing about 122 mm.

(7) *Micropternus brachyurus lanka*.

Kloss, Ibis, 1918, p. 108 : Ceylon.

Habitat. South Travancore and Ceylon.

Smaller ; wing about 115·8 mm.

(8) *Micropternus brachyurus fokiensis*.

Brachypternus fokiensis Swinh. P. Z. S. 1863, p. 87 : Fokhien.

Habitat. Southern China from Fokhien to N.E. Cochin China.

Head paler than back, and more buff than rufous ; chin and throat pale buff with broad black centres ; underparts deep smoky brown, with no traces of bars except on flanks. Larger. Wing 124–135 mm. ; average 11 specimens, 129·4 mm.

(9) *Micropternus brachyurus holroydi*.

Micropternus holroydi Swinh. Ibis, 1870, p. 95 : Central Hainan.

Habitat. Hainan (? S.E. Cochin China and east Siam).

Similar to *fokiensis*, but with darker head, and the feathers of the throat and chin with larger dark centres and more narrow pale margins. Smaller. Wing 111–122 mm. ; average 8 specimens, 115·9 mm.

(10) *Micropternus brachyurus badiosus*.

Meiglyptes badiosus Bonaparte, Consp. Av. i. 1850, p. 113 : Borneo.

Habitat. Bornco.

A very rich, deep red bird, back and scapulars generally immaculate, centre of throat-feathers unicolorous with the breast, and only narrowly margined with white ; red under eye, often extending to above it also ; terminal half of tail unbarred black.

In one specimen from Labuan the feathers of the nape and sinciput are tipped with crimson.

Wing 107–118 mm. ; average 12 specimens, 113·5 mm.

✧ TIGA JAVANENSIS AND TIGA SHOREI.

Although recently *T. shorei* has generally been held to be only a subspecies of *T. javanensis*, this does not appear to me to be correct, for over a considerable portion of its range it is found occupying the same country as forms of that bird. This is especially the case over north and north-east Burma and down the hill-ranges as far as Tenasserim. *Tiga shorei* is separable from all the races of *T. javanensis*, in having the chin and throat with two central streaks of black instead of one. In a few individuals the streak is single on the chin, but in every instance it bifurcates and becomes two distinct streaks on the throat. Again, *T. shorei* has the feathers of the crest with pale, almost white bases instead of dark, almost blackish ones. This gives the crest a brighter, more scarlet tinge, in addition to which the crest itself is longer, and there is practically no visible black patch on the nape posterior to the scarlet.

We have therefore two distinct species :—

(1) *Tiga shorei*.

Picus shorii Vigors, P. Z. S. 1831, p. 175 : Himalaya Mts.

Throat, and generally chin, with a double median stripe ; feathers of crest with pale bases, more scarlet and longer than in *javanensis*.

A large bird. Wing from 146 to 162 mm. ; average of 31 birds, 153·3 mm.

Habitat. Himalayas, from Nepal through Sikkim, northern Assam, Chin and Kachin Hills, northern Arrakan Hills and down the Burmese hill-ranges as far south as Thyetmyo.

(2) *Tiga javanensis*.

A smaller bird with shorter crest, the feathers of which have dark bases, and a single streak of black dots down the centre of the chin and throat. In very rare cases this line becomes double on the throat, but in such the intermediate space is white, not dull buff as in *shorei*.

This species seems to be divisible into certain geographical races.

In coloration there is a decided difference between southern

Indian and southern Burmese birds. The latter have, as a general rule, the black nuchal patch decidedly larger and extending well on to the interscapulars. In general tint also they are darker and duller, the backs a deeper olive with a more pronounced tint of bronze, and the crests and rumps a distinctly deeper, more crimson red.

As regards measurement, the following are the dimensions of birds in the British Museum, together with a few others which I have been able to examine :—

Travancore	Wing	131-142 mm.	Average	136.6.	13 specs.
Burma above lat. 20° . . .	„	141-165 mm.	„	154.0.	8 „
„ „ „ 19° . . .	„	139-151 mm.	„	145.0.	26 „
„ „ „ 18° . . .	„	142-157 mm.	„	147.2.	12 „
„ „ „ 17° . . .	„	139-155 mm.	„	144.5.	12 „
„ „ „ 16° . . .	„	136-151 mm.	„	143.0.	44 „
„ „ „ 14° . . .	„	137-150 mm.	„	142.5.	29 „
„ „ „ 12° . . .	„	132-144 mm.	„	140.5.	15 „
„ „ „ 10° . . .	„	136-152 mm.	„	144.0.	12 „
Malay, south of lat. 10° . .	„	122-136 mm.	„	129.5.	31 „
Sumatra	„	118-139 mm.	„	128.3.	8 „
Java	„	124-138 mm.	„	130.3.	23 „
Borneo	„	118-130 mm.	„	123.9.	31 „

On the above material it is not very easy to define what subspecies should be made. The bird from Borneo is very different from all others in colour, and needs no consideration. Birds from Java, Sumatra, and below lat. 10° in the Malay Peninsula show a big drop in size when compared with those from farther north, and Kloss seems to be well advised in fixing latitude 10° as a division between two of the races, but the difficulty lies in separating the northern and central Burmese forms, and it seems to me that it is therefore perhaps not desirable to attempt any such division. In coloration there is no difference between them, and though there is a fairly steady average decrease in size as one works south from lat. 20° to lat. 12°, yet we find the birds between lat. 10° and 12° averaging more than those between 17° and 18°, and we obtain individuals from Malween, lat. 10°·3, with a wing of 152 mm., against some individuals from northern Arrakan, of 143 mm.

The three birds from the upper Chindwin are huge, having wings of 157, 159, and 165 mm., and if these three were eliminated, we should not have any very great difference in size between the most northern birds and any other areas north of 10°. I therefore leave them for the present all under one name. If eventually the extreme northern birds have to be separated from the central and southern Burmese and Siam birds, the latter will have to be given a new name, as the northern form will bear the name *intermedia*, which was originally bestowed upon a northern Arrakan bird.

I retain the following species and subspecies :—

(1) *Tiga shorei*.

Vide above.

(2) *Tiga javanensis javanensis*.

Picus javanensis Ljungh, K. Vet.-Ac. Nya Handl. xviii. 1797, p. 137 : Batavia, Java.

Chrysonotus tridactylus Swains. Class. Birds, ii. 1837, p. 309 : Java.

Picus tiga Horsf. Trans. Linn. Soc. xiii. 1822, p. 177 : Java.

A very small bird, with wing averaging rather under 130 mm., and varying between 118 and 139 mm.

Habitat. Java, Sumatra, and Malay Peninsula, south of lat. 10°.

(3) *Tiga javanensis borneensis*.

Tiga javanensis borneensis Dubois, Ornith., xiv. 1907, pp. 371, 522 : Borneo.

This is a tiny bird, the wing averaging under 124 mm., and only varying between 118 and 130 mm. It also differs, however, very distinctly in coloration, having the back and wings much lighter with practically no red or bronze tint. Thus, if two series of birds are laid out on a table, the one from Borneo and the other, say, from Malacca, the former appears to be yellow-green above, and the latter red-gold.

Habitat. Borneo only.

(4) *Tiga javanensis exsul*.

Tiga javanensis exsul Hartert, Nov. Zool. viii. 1901, p. 50: Bali.

Hartert divides this bird from other races on two characters: (1) the excessive cross-barring below, and (2) the red patch on the nape of the female. The only female in the British Museum has no red nape, and the male does not seem to be distinguishable from other Javan birds. On the other hand, the specimens in the Tring Museum certainly seem distinct, and all three females in this collection have the red patch quite apparent.

Habitat. Bali, ? Java.

(5) *Tiga javanensis intermedia*.

Picus intermedius Blyth, J. A. S. B. 1845, p. 193: Arrakan.

Like typical *T. j. javanensis*, but larger. The average wing-measurement of 159 birds from the whole area is 144.4 mm., and from the table given above it will be seen that this is practically the same as that for birds between 10° and 12° in the extreme south of the range.

Habitat. Cachar and hills south of the Brahmapootra, Manipur, and the whole of Burma north of 10°, Siam, Shan States, and Yunnan. Blyth's type was from north Arrakan.

(6) *Tiga javanensis rubropygialis*.

Picus rubropygialis Malh. Rev. Zool. 1845, p. 400: Bengal.

Chrysnotus erythropygius Cab. & Heine, Mus. Hein. iv. pt. ii. 1863, p. 173: South India.

Malherbe describes his type as coming from Bengal, and Jerdon misquotes him as describing it from Bangalore. This Woodpecker is, however, very rare in Bengal proper, and the specimen in question may possibly have come from southern Orissa, often mistermmed Bengal in olden days, when indeed it formed part of that Presidency. The southern portion of Bengal as represented by Orissa has an entirely southern Indian avifauna, and this form of Woodpecker is found there more frequently than in the north.

T. j. rubropygialis has a wing varying between 127 and 142 mm., and averaging for 13 specimens 137·5 mm. The so-called type-specimen is a tiny bird with a wing of only 127 mm.

Habitat. South India northwards to southern Orissa and Bombay.

(7) *Tiga everetti*.

Tiga everetti Tweedd. P. Z. S. 1878, p. 612, pl. xxxvii., ♂ et ♀ : Puerto Princessa, Palawan I.

This form seems to constitute a quite separate species. The males have no black collar below the nape; the fore-neck and upper breast are dull olive-brown; the chin and throat are speckled with black, but have no definite medial line or lines; there is also a red moustachial patch, and the lower plumage, as in *T. j. exsul*, is barred, not edged with black.

The female has the posterior crest crimson.

Habitat. Palawan.

GAUROPICOIDES RAFFLESI.

I can find no colour distinctions between the various geographical races of this Woodpecker which are in any way constant. The type locality is Sumatra, and Hesse has made three subspecies—*i. e.*, one from Sumatra, a second smaller one from Borneo, and a third alleged larger one from the Malay Peninsula.

Hesse also claims that the Malayan bird differs from the Sumatran in that the male in the former has the upper tail-coverts tinged with red, whilst the Sumatran one has none of this tint. Of the 21 fully adult males from the Malay Peninsula in the British Museum collection, I find 10 have this red tinge and 11 have not; on the other hand, of the five Sumatran males, one has it slightly and four are without it. This, therefore, would seem to be rather an individual variation than a racial one.

As regards size, this is so variable that it does not seem a very safe characteristic to trust to; but of the Museum

series of Sumatran birds several have data which are not reliable, being merely on dealers' tickets with additional information furnished by the purchaser on now unknown grounds. If we accept average size as sufficing to distinguish races, we have the following:—

(1) *Gauropicoides rafflesi rafflesi*.

Picus rafflesii Vigors, Memoir Life Raffles, 1831, App. p. 669 : Sumatra.

Habitat. Sumatra.

Average wing-measurement of 9 birds, 138 mm. (126 to 153 mm.)

Of this small series the largest bears a dealer's ticket and one in Lord Tweeddale's handwriting, but it appears to be an obvious Malaccan trade-skin, and the second largest (with a wing of 148 mm.) is also a very doubtful one. Excluding these two, the other seven have wings of an average of only 134 mm.

(2) *Gauropicoides rafflesi peninsularis*.

Hesse, Orn. Monatsb. xix. 1911, p. 192 : Malacca.

Habitat. Malacca, south of Malay Peninsula to Tenasserim and S.E. Siam.

Average wing-measurement of 39 birds, 143.5 mm. (138–153 mm.)

(3) *Gauropicoides rafflesi borneonensis*.

Hesse, *loc. cit.* : Borneo.

Habitat. Borneo.

A small bird with an average wing-measurement (16 birds) of 127.5 mm (121–134 mm.)

SASIA.

There are two quite good species of this little Piculet:—

† (1) *Sasia ochracea*.

With white eyebrow, and ochre or rufous back.

† (2) *Sasia abnormis*.

With no white eyebrow, and olive-green back.

And these seem to be again divisible into the following geographical races :—

(1) *Sasia ochracea ochracea*.

Sasia ochracea Hodgs. Journ. As. Soc. Beng. v. 1836, p. 777 : Nepal.

White eyebrow ; back strongly suffused with rusty-red or ferruginous ; underparts deep ferruginous ; cap olive-green.

Wing 52–59 mm. Average of 50 birds, 54·3 mm.

Habitat. Nepal, Sikkim, Assam, Cachar, Manipur, and the extreme-northern Chin and Kachin Hills.

(2) *Sasia ochracea reichenowi*.

Sasia ochracea reichenowi Hesse, Orn. Monatsb. xix. 1911, p. 181 : Burma.

White eyebrow ; back much paler, ochraceous rather than ferruginous ; below rusty ochraceous instead of deep ferruginous ; cap olive, contrasting more strongly with the back than it does in true *ochracea*.

Wing 50–56 mm. Average of 14 birds, 52·1 mm.

Habitat. The whole of western and central Burma, from Arrakan and Tenasserim and down the Peninsula as far as Mergui on the west.

The birds in the British Museum collection from the Khasia Hills are, strange to say, all typically of this form, though surrounded on every side by *ochracea*. At present I have only three specimens to examine as skins, but I knew the bird well in life in this district and never noticed any difference between it and the adjoining Cachar bird, so under these circumstances merely note the fact for further enquiry.

Sasia abnormis abnormis.

Picumnus abnormis Temm. Pl. Col. iv. 1825, pl. 371. fig. 3 : Java.

Sasia everetti Hargitt, Cat. Birds B.M. xviii. 1890, p. 559 : Borneo.

No white eyebrow. Back dusky olive-green, concolorous

with head ; below deep ferruginous, but with a golden sheen on some of the feathers of the lower breast and abdomen, never found in *ochracea*.

Wing 50–56 mm. Average 22 specimens, 53 mm.

I can trace no difference in colour or size between specimens from Borneo, Sumatra, Malay Peninsula, and Siam and those from Java ; but there are very few specimens from the latter locality, and it may be, as Hartert says, that a series will show them to be smaller and with a smaller bill than those from elsewhere.

Habitat. Borneo, Sumatra, Java, the Malay Peninsula, as far north as Kossum and thence east up the Peninsula into south-west Siam, as far north and east at all events as Maprit, whence birds were obtained by Mr. E. G. Herbert.

Hargitt's *everetti* is merely the young bird of *abnormis* with the underparts olive-green. There are, however, here and there young feathers of the adult rufous colour, showing distinctly what the bird really is.

Sasia abnormis magnirostris.

Sasia abnormis magnirostris Hartert, Nov. Zool. viii. 1901, p. 51 : Nias.

Differs from *S. a. abnormis* in having a bigger bill, with a depth at base of 6 mm. as against 4–5 in that bird.

There are no specimens of this subspecies in the British Museum.

✦ THEREICERYX LINEATUS.

I cannot discriminate between more than two additional geographical races of this Barbet—*i.e.*, a larger northern and a smaller southern form. There appear to be no constant differences in colour which can be considered sub-specific ; depth and shade of green, comparative darkness of head, and extent of striation appear to be purely individual,

The measurements of a very large series, working down from north to south, are as follows :—

N.W. India to Nepal ..	Wing 133-142 mm.	Average 137.6.	7 birds.
Nepal.....	„ 124-136 mm.	„ 130.8.	13 „
Sikkim and Bhutan ..	„ 117-137 mm.	„ 129.9.	20 „
Assam	„ 122-137 mm.	„ 130.5.	30 „
N. Burma ..	„ 124-137 mm.	„ 130.8.	17 „
S. Shan States	„ 128-135 mm.	„ 130.7.	3 „
Annam	„ 122-124 mm.	„ 123.0.	2 „
Siam, N. of Peninsula..	„ 124-131 mm.	„ 129.4.	11 „
Central Burma, S. of Chin and Kachin Hills.	„ 107-132 mm.	„ 122.1.	25 „
Peninsular Siam	„ 122-127 mm.	„ 124.3.	3 „
Tenasserim and Penin- sular Burma	„ 111-134 mm.	„ 125.3.	43 „
Java	„ 112-124 mm.	„ 117.3.	13 „

It is manifest that the north-western Indian bird is not the same as the Javan, and indeed the former bird appears to run much larger than any other form. There are, however, only seven specimens upon which to base an opinion, though of these no fewer than four have wings of 139 mm. and upwards. Should a larger series confirm these measurements, this race would certainly require a new name, as there is none now applicable.

Leaving the north-western form, we have a second with a wing roughly averaging about 130 mm., extending from Nepal through Sikkim, Bhutan, Assam north and south of the Brahmapootra, the Chin, Kachin, and Shan Hills, down into Siam north of the Peninsula. North Arrakan and south Chin Hill birds, with wings averaging 133 mm. (a larger series might decrease this average), also appear to belong to this form. The birds from south Arrakan and the whole of west and central Burma belong to a smaller form with a wing averaging 124 mm., and to this race belong those from peninsular Siam and Burma with wings averaging about 1 mm. longer.

In Java itself we have a very small bird with a wing only 117 mm. in average length, although we have a fair series (13 skins) for examination. At the same time, it is very

noticeable that the smallest bird in the whole series of skins of this species is a fully adult male in perfect plumage from Kaukaryit with a wing of only 109 mm.

The following subspecies seem to be maintainable :—

(1) *Thereiceryx lineatus lineatus*.

Capito lineatus Vieill. Nouv. Dict. d'Hist. Nat. iv. 1816, p. 500: Java.

Very small; wing average 117·3 mm. (13 birds).

Habitat. Java and Bali.

(2) *Thereiceryx lineatus hodgsoni*.

Megalaema hodgsoni Bonap. Consp. Av. i. 1850, p. 144: Nepal.

Megalaema maclellandi Moore & Horsf. Cat. ii. p. 637.

The type of *M. maclellandi* is said to have come from north-east Bengal, and the ticket on the type itself is marked as from Assam; as Assam at one time formed the north-east corner of Bengal both are correct, but the name is merely a synonym for *T. l. hodgsoni*.

A very large bird; wing about 130·6 mm. (103 birds).

Habitat. Nepal, through the Himalaya and eastern Burmese Hills to Siam north of the Peninsula.

(3) *Thereiceryx lineatus intermedius*.

Stuart-Baker, Bull. B. O. C. xxxix, 1918, p. 9: Pahpoon, Burma.

Type. No. 88.11.30.449, ♀, ex Hume Coll., Brit. Mus.

Intermediate in size between *T. l. hodgsoni* and *T. l. lineatus*, with a wing of about 124 mm. (71 birds).

Habitat. Central and south Burma and peninsular Burma and Siam.

? (4) *Thereiceryx*, ? subsp. nov.

From N.W. India.

A very large bird, with an average length of wing over 137 mm.

If a sufficient series of specimens from the north-west of India west of Nepal shows that the great size is consistent, this will suffice to constitute a fourth geographical race.

† THEREICERYX FAIOSTRICTA.

There seems to be great confusion in respect to the proper name which this Barbet should bear.

Temminck originally described it as *Bucco faiostricta* (Pl. Col. iii. 1831, pl. 527) and gave its habitat as Cochin China. In the B.M. Catalogue Temminck is misquoted as *Bucco flavostrictus* (Cat. B.M. xix. 1891, p. 76), and Gray (Genera B. ii. 1846, p. 429) calls it *Megalema faiostrictus* but is again misquoted in the Catalogue as *M. flavostriata*.

Then Neumann (Bull. B. O. C. xxiii. 1909, p. 31) misquotes Shelley as *Cyanops phæostricta* instead of *Cyanops phæostriata*, and here refers to its having been found in south China, and on the strength of this makes a bird from Saigon, Cochin China, a new subspecies under the name *saigonensis*, the grounds for its separation being its small size, *i. e.* a wing of only 102 mm. as against his south Chinese birds with wings from 112 to 118 mm.

As Kloss correctly shows, however, the original type came from Cochin China, so *saigonensis* is only a synonym of *faiostricta*. Kloss then names the south Chinese birds *prætermisus*, on account of their comparatively large size rendering it necessary to divide them from the Cochin China bird. This distinction does not, however, seem to hold good, though Kloss's name must probably be retained on other grounds.

We have now a fair amount of material available for comparison. In the British Museum there are eight specimens of this Barbet—3 from Ok-Yam, Franco-Siamese boundary, wings 108–112 mm.; 2 from Nhatrang, Annam, with wings of 109 mm.; and one, Neumann's type, from Saigon, with a wing of 102 mm. In Mr. Herbert's collection are two from Hoop Boon, Sriracha, with wings of 112 and 114 mm. respectively. Count Gyldenstolpe has a fine series of 13 birds with wings varying between 110 and 115 mm.; and, finally, Kloss records one from Lat Bua Kao with a wing of 108 mm. Robinson's four birds from Ok-Yam are said to have wings over 112 mm.

Neumann's six birds, which are now in the Tring Museum, have wings, as Kloss states, between 112 and 118 mm. From this it is evident that we cannot separate *prætermissa* on account of size alone, especially when it appears that *saigonensis* is named from an abnormally small-sized bird.

There is, all the same, one quite good difference between the south Chinese birds and those from Cochin China, Annam, etc., and that is, so far as we know now, all true *faiostricta* have a red patch or spot on either side of the lower throat, whilst those from south China have none.

The two forms will therefore stand as follows :—

(1) ***Thereiceryx faiostricta faiostricta*.**

Bucco faiostricta Temm. Pl. Col. iii. 1831, pl. 527 : Cochin China.

Cyanops phæostricta saigonensis Neumann, Bull. B. O. C. xxiii. 1909, p. 31.

Neumann's type is No. 88.11.25.278, Tweeddale Collection, British Museum ; no sex, locality Cochin China (*vide* Bull. B. O. C. xxiii. p. 31). The wing is 102 mm.

Rather smaller : wing 108–115 mm. (one 102 mm.) ; a red spot well developed on either side of the lower throat.

Habitat. Cochin China, Annam, and Siam.

(2) ***Thereiceryx faiostricta prætermissa*.**

Thereiceryx flavostrictus prætermissus Kloss, Ibis, 1918, p. 101 : Nanchan Island, Kwangtung, South China. Now in Tring Museum.

A larger bird ; wing 112–118 mm. ; no red spot on either side of the throat.

Habitat. As above, so far as is now known.

It may eventually prove that the south-eastern Cochin China form is always very small, in which case we should have three subspecies and Neumann's name would stand.

† CYANOPS DUVAUCELI.

There are at present the following races of this Barbet described :—

(1) *Cyanops duvauceli duvauceli*.

Bucco duvauceli Less. *Traité*, 1831, p. 164 :
Sumatra.

(2) *Cyanops d. borneensis*.

Parrot, München. *Abh. Ak. Wiss., Math.-Phys.*
Kl. xxiv. 1907, pp. 149, 288 : Borneo.

(3) *Cyanops d. cyanotis*.

Bucco cyanotis Blyth, J. A. S. B. xvi. 1847, p. 485 :
Bengal.

(4) *Cyanops d. orientalis*.

Robinson, Ibis, 1915, p. 738 : Ok-Yam, Franco-
Siamese boundary.

Cyanops duvauceli is easily divisible into two races—*duvauceli duvauceli*, a small bird with black ear-coverts and a large black patch on upper breast ; and a larger form with blue ear-coverts and no black patch on upper breast, *duvauceli cyanotis*.

The difficulty is in dealing with the intermediate forms, which, in coloration, grade into one another very gradually without having any area in which a stable form has been evolved.

In size we have, on the other hand, a somewhat more definite dividing line than usual ; but the series available for examination is not large, and it is possible that with a larger one, the sudden dividing line may become less distinct.

Sikkim	Wing 80-87 mm.	Average 83·2.	5 birds.
Assam	„ 78-88 mm.	„ 82·0.	13 „
N. Burma	„ 77-88 mm.	„ 81·9.	9 „
Siam	„ 82-87 mm.	„ 83·5.	8 „
Peninsular Burma and Siam	„ 72-79 mm.	„ 76·4.	15 „
Malacca and South Malay Peninsula....	„ 68-79 mm.	„ 75·2.	24 „
Sumatra	„ 69-77 mm.	„ 73·9.	12 „
Borneo	„ 73-80 mm.	„ 76·5.	11 „

From the above table we see that this species falls into two well-divided races—one with a wing averaging well over 80 mm., the other well under 80 mm.

As regards the larger race, I can find no colour variation by which it can be split up. At first sight Robinson's skins do seem to be separable, because of their bright clean green appearance, and the amount of yellow in the spot under the eye. A careful examination, however, seems to show that this is due only to the beautiful way in which the skins are made. I find that skins made by one of my men in Cachar are facsimiles in colour and size of Robinson's *C. d. orientalis*, and this race cannot be maintained. The amount of yellow in the spot under the eye varies to the same degree in birds from Sikkim to south Burma and peninsular Siam.

In the smaller race a further division seems desirable. Birds from Borneo and Sumatra are not separable from one another, unless one considers a difference of 2·5 mm. on an average wing-measurement sufficient for this purpose. In coloration both birds are identical, with black ear-coverts, and a big black breast-patch. Parrot divides his *borneensis* from typical *duvauceli* as being a brighter, paler green, but the alleged difference is certainly not visible in the two series in the British Museum.

When, however, we come to the Malay Peninsula bird, we find that the ear-coverts are neither pure blue nor all black, but are dull bluish with the basal half black, the proportion of the two colours varying considerably. The black spot on the breast seems to be nearly always present, but is much smaller than in the Sumatran and Bornean birds.

Accordingly there are, I consider, the following three forms of this Barbet, with a possible fourth from Batu Island:—

(1) *Cyanops duvauceli duvauceli*.

Bucco duvauceli Less. *Traité*, 1831, p. 164 : Sumatra.

Cyanops duvauceli borneensis Parrot, *München. Abh. Ak. Wiss., Math.-Phys. Kl.* xxiv. 1907, pp. 149, 286 : Borneo.

Black ear-coverts ; black patch on breast well developed.
Wing average 75.2 mm. (23 birds).

Habitat. Borneo and Sumatra.

(2) *Cyanops duvauceli robinsoni*.

Stuart-Baker, Bull. B. O. C. xxxix. 1918, p. 20 : Klang, Malay Peninsula.

Type. No. 88.11.30.338, ♂, ex Hume Coll. British Museum.

Ear-coverts mixed blue and black ; black spot on breast small. Wing average 75.6 mm. (39 birds).

Habitat. Malay Peninsula and peninsular Siam and Burma.

(3) *Cyanops duvauceli cyanotis*.

Bucco cyanotis Blyth, J. A. S. B. xvi. 1847, p. 487 : Bengal.

Cyanops duvauceli orientalis Robinson, Ibis, 1915, p. 738 : Ok-Yam, Franco-Siamese Boundary.

Ear-coverts blue ; no black spot on breast. Wing average 82.3 mm. (35 birds).

Habitat. Sikkim, Bhutan, Assam, Chin and Kachin Hills, Shan States, and Siam, north of the Peninsula.

(4) *Cyanops duvauceli gigantorhinus*.

Mesobucco duvauceli gigantorhinus Oberholser, Smiths. Inst. Misc. Coll. lx. no. 7, 1912, p. 6 : Batu Is.

This is merely described by Oberholser as "Like *M. d. duvauceli* but with a much larger bill : Lafau, Nias II."

No measurements are given, and I have no birds for examination.

Habitat. Apparently Batu and Nias Islands.

† XANTHOLÆMA HÆMACEPHALA.

This little Barbet, which according to the British Museum Catalogue rejoices in no fewer than fourteen names, is, as a matter of fact, very consistent in size throughout its great range, and its colour varies no more than its dimensions

The latter are as follows :—

		Average.	Extremes.	No. of specimens.
Khorasan, Persia	Wing	80.0 mm.	—	1
Punjab	"	83.2 "	80-89 mm.	9
North-west India	"	79.6 "	77-82 "	12
Nepal and Bhutan	"	81.8 "	80-84 "	6
Assam	"	84.0 "	81-87 "	7
Rajputana	"	81.5 "	78-83 "	4
Central Provinces	"	81.3 "	79-84 "	7
Bengal	"	80.6 "	78-84 "	4
Bombay	"	80.3 "	74-89 "	27
Madras	"	80.5 "	77-87 "	10
Travancore and Mysore . .	"	79.4 "	73-83 "	13
Ceylon	"	78.0 "	75-81 "	4
Burma	"	82.5 "	77-87 "	51
Malay Peninsula	"	81.7 "	78-83 "	5
Siam	"	83.1 "	80-87 "	12
Annam	"	80.0 "		
Sumatra	"	80.8 "	79-83 "	5
Philippines	"	82.0 "	80-88 "	22

We thus have these differences at the greatest extremes of its range: a bird in the Punjab with a wing of 83.2 and another in Ceylon with one of 78.0, *i. e.* a difference of only 5.2 mm., but from the north-west 12 birds average only 79.6 mm., which is exactly the same as those from Travancore. Under these circumstances it is impossible to make any geographical races on the ground of size. There is, however, one race which is easily distinguishable on account of the much bigger bill, which, measured from nostril to tip, averages over 17 mm. as against well under 14 mm. for the rest.

We have, therefore :—

(1) *Xantholæma hæmacephala hæmacephala*.

? *Bucco philippensis* Brisson, Orn. iv. 1760, p. 99, pl. vii. fig. 2 : Philippines.

Bucco hæmacephalus Müller, Syst. Nat. Anhang, 1776, p. 88 : Philippines.

Bucco flavigula Bodd. Tabl. Pl. Enl. 1783, p. 20 : Philippines.

Bucco philippinensis Gmel. Syst. Nat. i. 1788, p. 407 : Philippines.

Capito flavicollis Bonn. et Vieill. Enc. Méth. 1823, p. 1424 : Philippines.

Xantholæma hæmatocephala Shelley, Cat. Birds B.M. xix. 1891, p. 89 (part).

Birds from the Philippines are the darkest of all these little Barbets, and are very heavily striated below. The edges to the wing-quills are dark and very blue, less green, especially when compared with Assam or still more western specimens.

The difference in the size of the bill is very noticeable : birds from the Philippines have the bill from 16 to 18 mm., measured as described, whilst those from Sumatra, Malay Peninsula, Burma, and India have it between 12 and 15 mm., whilst the average for the two forms is under 14 mm. and over 17 mm. respectively.

Brisson's *Bucco philippensis* would appear to be this bird, but his names are not accepted as binomial ; the plate is very poor and the description meagre, and under these circumstances it is safer to retain Müller's name.

Habitat. Philippines.

(2) *Xantholæma hæmatocephala indica.*

Bucco indicus Lath. Ind. Orn. i. 1790, p. 205 : India.

Bucco rubricollis Cuv. Règne Anim. i. 1829, p. 428 : "The greater part of India."

Bucco luteus Less. Traité, 1831, p. 163 : Pondicherry.

Megalæma rubrifrons Gray, List Capit. Brit. Mus. 1868, p. 11 : India.

Xantholæma hæmatocephala Shelley, Cat. Birds B.M. xix. 1891, p. 89 (part).

The differences between *X. h. indica* and *X. h. hæmatocephala* are those already pointed out above.

Habitat. Practically the whole of India, from the foothills of the Himalayas to Ceylon, the plains of Burma, Yunnan, Siam, the Malay Peninsula, and Sumatra.

There are three names which have hitherto been given as

synonyms of *X. hæmacephala* :—(1) *Bucco parvus* Gmelin, Syst. Nat. i. p. 407, of which the type locality is said to be Senegal; but the description shows that it is probably a small *Barbatula*, and anyway it has nothing to do with this Barbet. (2) *Bucco lathamii* Gmel. Syst. Nat. i. p. 408. This is founded on the plate in Lath. Syn. i. and p. 504, which is not in the least like *Xantholæma hæmacephala*. The plate is of a bird called "the Buff-faced Barbet," and no locality is given. (3) *Bucco nanus* Bodd. Tabl. Pl. Enl. p. 47 : Cayenne. This is founded upon Latham's Black-spotted Barbet (i. p. 496), which probably represents *Capito niger*.

Shelley misquotes Marshall as giving this bird the name (amended) of *hæmatocephala* in his Monogr. Capit. p. 101, pl. 42 (1871), but as a matter of fact Marshall calls it *hæmacephala*.

It should be noted that the bird from Khorasan has a very small bill (12 mm.), and is very yellowish-green with an intense sheen on the upper plumage equalled by very few specimens elsewhere. This may well be an individual character, but it will be interesting to examine further specimens.

XIII.—Notes on Birds observed in Palestine.

By Major A. G. L. SLADEN, M.C., R.E., M.B.O.U.

(Plate IV.)

FROM July to the end of October 1917, I found myself in that curious semi-desert of southern Palestine which was then occupied by the Egyptian Expeditionary Force to the south and south-east of Gaza. The country here, though extremely fertile after the rains of winter and producing heavy crops of grain in the spring, becomes during summer and autumn a vast tract of dry and sandy land, swept by dust-storms and scorched by the sun. There are few trees

except along the coastal strip which includes Deir el Belah, Khan Yunus, and Rafa. Most of my observations were made in the neighbourhood of Shellal, a point some twelve miles from the mouth of the Wadi Ghuzze. This wadi, like most large wadis in Palestine and Sinai, was at this time of the year a huge dry river-bed with here and there a few shallow pools which, excepting a large brackish freshwater lake at Deir el Belah, provided the only surface-water in that part of the country. At Shellal there were several of these pools, and their presence no doubt was responsible for many of the migrants which came under notice.

After the advance of the British force in November and December 1917 the type of country became very different as we went northward, and some species which had appeared only on migration at Shellal were found to be resident farther north. On the other hand, I never found Tristram's Desert-Lark (*Ammomanes deserti fraterculus*) in any other place than at one particular spot on the Wadi Ghuzze.

Before the northward migration commenced there were very few birds to be seen in the area around Shellal, and one could almost count the common species on one's fingers, but once migration began there was a constant stream of newcomers. Doubtless a very much larger number of migrants passed south along the seashore and through the coastal strip of vegetation and did not penetrate even a few miles inland. The Quail, for instance, was a scarce occurrence at Shellal whilst thousands were passing along the coast.

I had no opportunities for careful observation during November and most of December 1917, but after that I increased my list very considerably, as might have been expected with the entire change in the nature of the country. The orange groves of Jaffa, the cultivation of the plain of Sharon, the marshy ground near Ramleh and Yebna, and the hills of Judea from Latron to the Jordan, provided such a variety of country that for some time I was daily recording fresh species.

I am very much indebted to Lieut.-Col. Meinertzhagen and

to Mr. M. J. Nicoll for their assistance in the identification of specimens. In reading the following notes it should be borne in mind that the period from July to October, inclusive, was spent in the Deir el Belah-Shellal area, and all subsequent dates, with the exception of a few days in May 1918, refer to the country on the Jaffa-Jerusalem line.

It has been a matter for regret that no opportunity has occurred for continued observation in the Jordan Valley and country to the eastward, as I imagine much of it must be regarded as of particular interest to the ornithologist. A number of species breed along the Jordan Valley, which in some places, owing to its peculiar climatic conditions, is almost tropical in its aspect.

All the skins enumerated have been presented to the British Museum.

I have prepared a map (Pl. IV.) on which are marked all the localities mentioned in my notes.

Corvus umbrinus. Brown-necked Raven.

Very common, in fact about the only species of Corvidæ seen near Shellal and Tel el Fara during August-October 1917. Round about Ramleh and Jaffa I only saw one during the following winter, but I observed several in the Judean Hills during this period.

Corvus corone. Carrion-Crow.

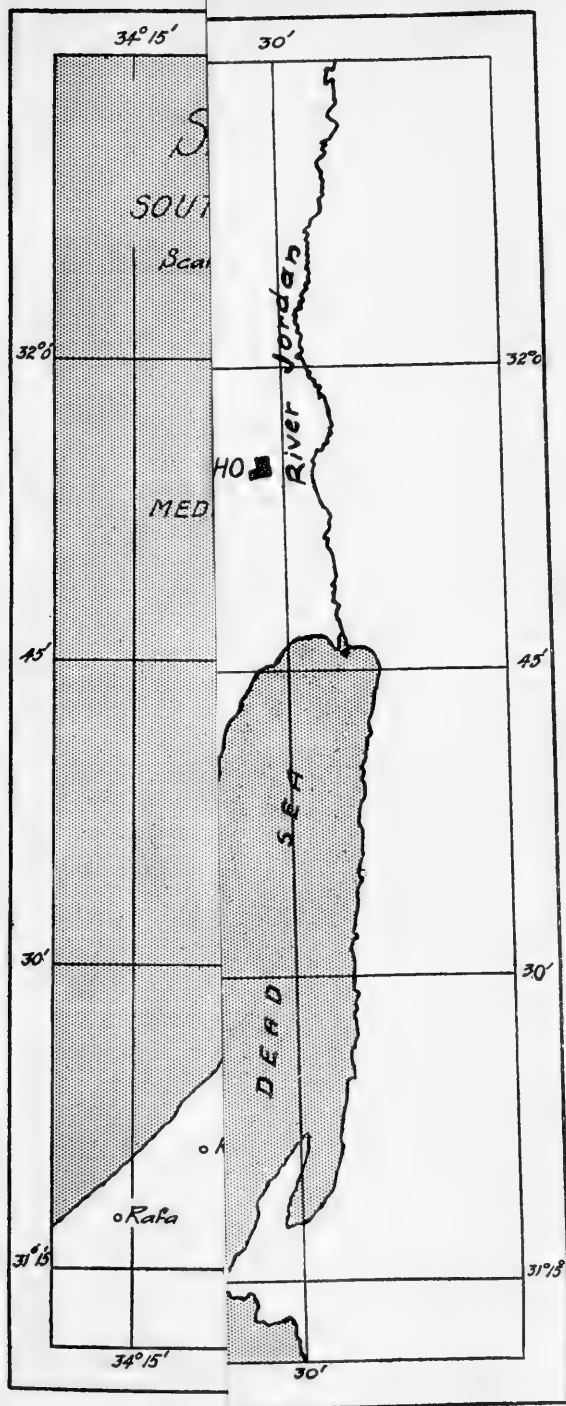
I secured one out of a flock of about twenty that I saw in Yebna marshes on 24 February, 1918. I had not previously found this species in Palestine.

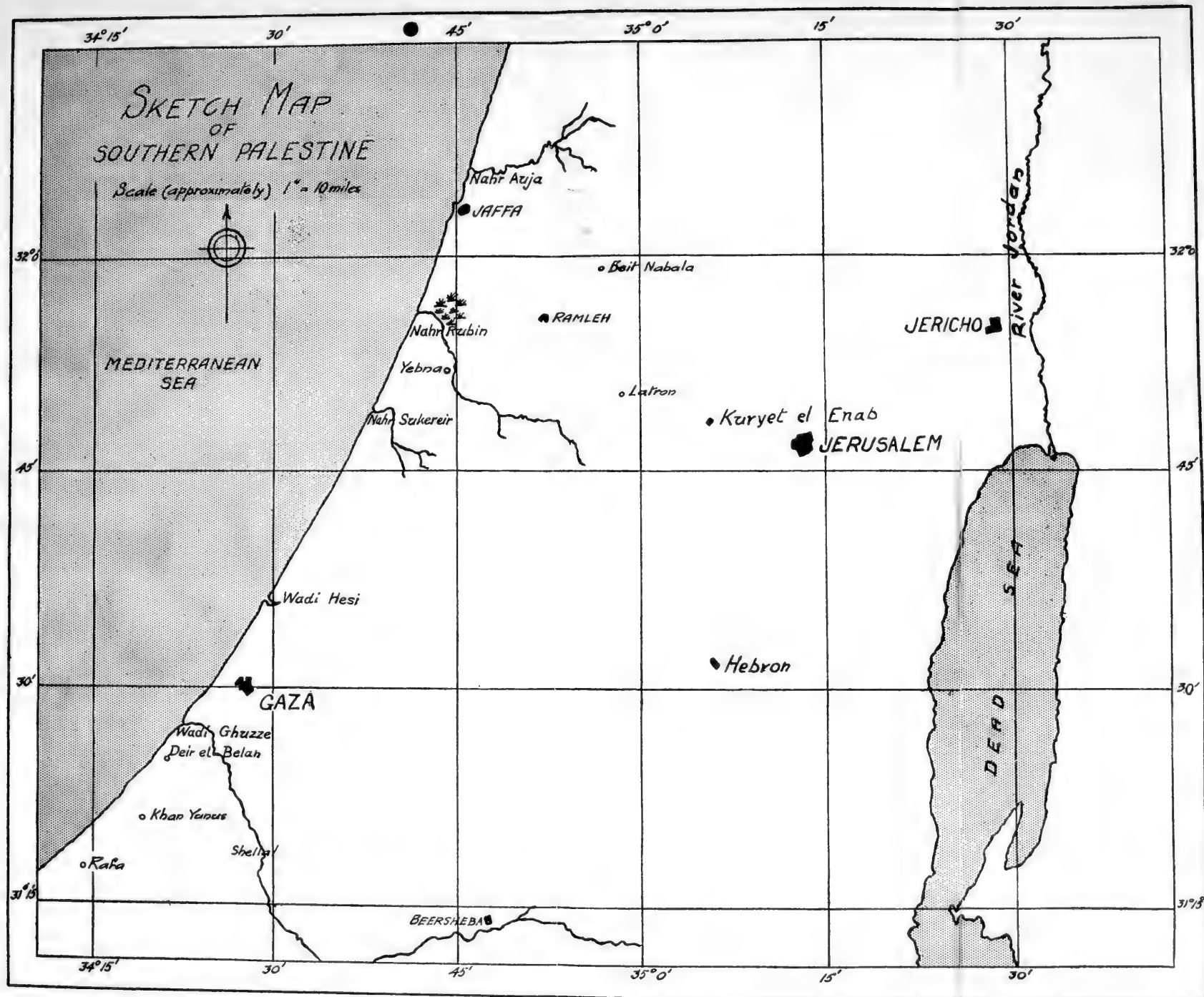
Corvus cornix. Hooded Crow.

I only saw two near Shellal and Gaza between August and October 1917. They became more common as we went farther north later. A few are to be seen about Jaffa and Ramleh at all seasons of the year.

Corvus frugilegus. Rook.

I first noticed a large flock near Ramleh, 4 December, 1917, and now and again a few small flocks during the





winter, but they were never common and appeared to be only passing.

Garrulus? species. Jay.

On 23 June I saw one of these birds at Kuryet el Enab, near Jerusalem (about 2000 ft. above sea-level). It appeared slightly larger than the British Jay. Its note was identical with the latter. Up to the time of writing I have been unable to secure a specimen.

Sturnus vulgaris. Starling.

None seen near Shellal during August to October 1917, with the exception of one which I saw at a pool near the Wadi Mirtaba, south of Beersheba, about 10 October. Large flocks were seen near Jaffa during the winter of 1917-18, and these roosted in the reed-beds of Yebna marsh. All these birds disappeared in March.

Pastor roseus. Rose-coloured Pastor.

One was secured near Rafa at the beginning of October 1917.

Oriolus oriolus. Golden Oriole.

1 ♀, near Gaza, ix. 17.

Several seen on migration near Gaza, September 1917. Seen again on northward migration 7 and 8 May, 1918.

Chloris chloris chlorotica. Palestine Greenfinch.

20, Jaffa, 20. xi. 18. 1 ♂, Jaffa, 27. i. 18.

Common in olive groves and orange plantations during winter months, and breeds commonly in suitable places. I found a nest containing five eggs on 14 March, 1918. The eggs of this bird are much smaller than those of the English form. The bird taken 27 January, 1918, is very much lighter in colour, and others which appeared to be similar were noticed during the winter months near Jaffa and Ramleh up to the middle of February. I strongly suspect this to be a distinct form, but there appears to be no other record.

Carduelis carduelis carduelis. Continental Goldfinch.

1 ♀, Jaffa, 28. i. 18.

Flocks were common in and about Ramleh and Jaffa during the winter. A considerable number remained during the spring and summer and nested commonly in the orange groves. On 16 April I found nests with young birds several days old. This species was found nesting as far south as Khan Yunus and Deir el Belah.

Passer domesticus biblicus. Palestine Sparrow.

1 ♂, Jaffa, 7. iii. 18. 1 ♂, Jaffa, 20. ii. 18.

Common wherever there is human habitation. This species nested also in caves and holes in rocky cliffs far from houses and villages.

Passer hispaniolensis transcaspicus. Spanish Sparrow.

1 ♂, Jaffa, 21. iii. 18. 1 ♀, Jaffa, 7. iii. 18.

I did not notice any of this species during the winter 1917-18 until 7 March, when I saw two males in company with *P. d. biblicus* near Jaffa. Later, however, they equalled the latter in numbers and nested commonly all over the country. To me the note of this bird was quite distinguishable from that of other sparrows, and its "chirrup" had a distinct trill which is peculiar to the species.

Fringilla cœlebs. Chaffinch.

1 ♀, Jaffa, 4. ii. 18.

Very common near Ramleh and Jaffa during the winter months, but not seen after March.

Acanthis cannabina fringillirostris. Linnet.

1 ♀, Kuryet el Enab, 23. vi. 18.

I obtained at Kuryet el Enab, near Jerusalem, on 23 June, an immature bird. There were a number of young birds of the year and a few adults. Some of the young birds were not very strong on the wing and appeared as if they had been bred locally. I had suspected *A. cannabina* in March when I thought I saw some at Jaffa. It certainly did not breed or remain during the spring in the plains.

This specimen has been compared with skins at the British Museum and agrees with birds taken at Nazareth and Tyre.

? *Erythrospiza githaginea* Desert Bullfinch.

I secured a bird which I took to be of this species at Belah on 3 May, 1918. Mr. M. J. Nicoll suggested that it was perhaps the Persian Bullfinch (*Rhodospiza obsoleta*), but unfortunately a rat took this skin from my dugout before I could submit it to Mr. Nicoll for examination.

Emberiza calandra calandra. Corn-Bunting.

1 ♀, Jaffa, 10. iii. 18.

Very common in Yebna Marsh during winter, also in suitable country to the north of Jaffa. They remained to breed, but their breeding-quarters were confined to marshy ground, probably on account of there being no suitable scrubby growth elsewhere.

Emberiza cæsia. Cretzschmar's Bunting.

1 ♂, Gaza, 4. ix. 17. 1 ♂, Gaza, 4. ix. 17. 1 ♂, Gaza, 20. viii. 17.

This species is very common during migration, which lasted throughout August and September at Shellal. They were seen again on spring migration, the earliest appearance being 21 March near Jaffa. Tristram says that he found them nesting commonly in the hills north of Jerusalem, but I found no trace of them breeding in the flat country around Jaffa.

Emberiza cia. Meadow-Bunting.

These were quite common near Jaffa during April 1918, and at Shellal I secured a female with incubation spots on 2 May. As far as I could see a few birds appeared to remain throughout the spring and summer.

Emberiza melanocephala. Black-headed Bunting.

2 ♂, Jaffa, 22. iv. 18. 1 ♂, Jaffa, 13. vi. 18. 1 ♀, Jaffa, 18. vi. 18.

This species was first observed near Jaffa about 20 April. The males appeared to precede the females by two or three days. Later on they nested commonly in the orange groves.

Emberiza hortulana. Ortolan Bunting.

1 ♂, Jaffa, 20. iii. 18.

A few seen on the northward migration, the first being near Jaffa, 20 March, 1918.

Alauda arvensis. Sky-Lark.

I saw none until we got north of Beersheba in November 1917. There I found large flocks and picked up many injured birds under telegraph-wires. This would be 10 November. They were common throughout the winter months near Jaffa and Ramleh. Possibly this is the eastern form *A. arvensis cinerascens*.

Calandrella brachydactyla brachydactyla. Short-toed Lark.

Common near the Wadi Ghuzze, July to October 1917. They also bred in the hilly country near Jaffa in the following spring, though only in comparatively small numbers.

Galerida cristata cinnamomea. Crested Lark.

1 ♂, Wadi Ghuzze, 7. x. 17. 1 ♂, Wadi Ghuzze, 1. ix. 17.

2 ♂ ♀, Jaffa, 1. iii. 18.

One of the commonest birds in all parts of Palestine which I visited and breeding freely everywhere.

Melanocorypha calandra calandra. Calandra Lark.

20, Wadi Ghuzze, 7. ix. 17. 1 ♂, Jaffa, 3. iii. 18.

Large flocks used to come to drink in the Wadi Ghuzze both morning and evening during August, September, and October, 1917. They always came in from the north, and during other times of the day none were to be found. I never saw one in the country south of the Wadi. During our advance north through Beersheba I came across them plentifully throughout the country up to Jaffa. During the following spring I found them breeding.

The apparently definite line of demarcation formed by the Wadi Ghuzze was very curious in view of the fact that Crested and Short-toed Larks were very common and breeding in the area south and south-east of the Wadi.

Lullula arborea. Wood-Lark.

These birds were common in small flocks near Ramleh in December 1917, but they appeared to be somewhat local, and I saw none after January 1918.

Ammomanes deserti fraterculus. Desert-Lark.

1 ♂, Wadi Ghuzze, 7. x. 17. 1 ♂, Wadi Ghuzze, 18. viii. 17.

I found this species in one spot only on the Wadi Ghuzze at Shellal during August, September, and October, 1917. They were fairly common within an area of about half a mile, but I saw them nowhere else, although doubtless they are not uncommon in similar localities.

Motacilla alba. White Wagtail.

1 ♂, Wadi Ghuzze, 20. x. 17.

These birds began to appear about 6 October, near Belah, and were all over the country south of Gaza by the 20th. They were very common and, in fact, the only Wagtail which I noticed during the winter 1917-18 around Jaffa, Ramleh, and Jerusalem.

Motacilla feldeggii. Black-headed Wagtail.

1 ♀, Jaffa, 17. iii. 18.

A specimen taken 17 March, near Jaffa, was identified as belonging to this species. There is not a doubt that both this and *M. flava flava* pass on migration in considerable numbers.

Motacilla flava flava. Blue-headed Wagtail.

1 ♂, Jaffa, 20. iv. 18. 1 ♀, Jaffa, 7. iv. 18.

As far as I was able to identify them a large number appeared near Gaza on migration 1 September to 15 October. Others were seen on spring migration near Jaffa during the first week in March.

Motacilla flava beema. Sykes's Wagtail.

1 ♂, Shellal, 13. ix. 17. 1 ♂, Jaffa, 20. iv. 18. 1 ♀, Jaffa, 7. iv. 18.

The first skin sent to the British Museum of a specimen

which I took at Shellal 13.ix.17. was referred to by Mr. Ogilvie-Grant as follows:—"This is an immature Grey-headed Wagtail which should, I think, be referred to *Motacilla flava beema*. I have sent it to a friend to ask him if he agrees in this identification."

These skins have been compared with those in the British Museum collection from India, with which they agree.

I first noticed them on 1 September at Shellal. By 25 September there were hundreds of similar birds all over the country, but they had all disappeared by October 1917, when *M. alba* began to be common, having put in their first appearance a few days later.

Cinnyris osea. Palestine Sunbird.

This was one of the most interesting species which I have come across. It is now apparently a regular winter visitor to the orange groves of Jaffa, though only in small numbers. I saw no trace of it after February. From inquiries I have come to the conclusion that it has only visited Jaffa during the last twenty-five years, that is to say since the orange groves have developed sufficiently to give it shelter in the winter, although it has been known to exist in the Jordan Valley. The blossom of the orange and lemon groves during January and February is doubtless the attraction. The skin of a male taken at Jaffa in February 1918 was submitted to Mr. M. J. Nicoll, and is now in the collection of the Giza Museum.

Anthus trivialis. Tree-Pipit.

1 ♂, Jaffa, 3.iii.18.

Birds were noticed September 1917 near Rafa, and again near Ramleh and Jaffa 25 February and subsequently until April.

Anthus cervinus. Red-throated Pipit.

2 ♂, Wadi Ghuzze, 20. x. 17. 1 ♂, Wadi Ghuzze, 20. x. 17.

Common on migration about Shellal, October 1917; also in spring, farther north, I noticed a few birds on 14 and 21 April.

Anthus campestris. Tawny Pipit.

1 ♂, Jaffa, 29. iii. 18. 1 ♂, Shellal, 6. ix. 17.

Occurred commonly on migration near Gaza in the autumn, and was first observed there 13 September, 1917. Observed again 17 April, 1918, near Ramleh.

Anthoscopus pendulinus pendulinus. Penduline Titmouse.

1 ♂, Jaffa, 31. i. 18.

The above is the only one which I saw. It was secured in Yebna Marsh 31 January, and appears to be the first record of this species in Palestine. This individual varies in its wing measurement from that given by Hartert "55-58 mm.," being only 51 mm. In plumage and general character it agrees with males in winter in the British Museum collection.

Parus major blanfordi. Blanford's Great Titmouse.

1 ♂, Ramleh, 27. i. 18.

A comparatively common and resident species.

Lanius collurio. Red-backed Shrike.

2 ♂ ♀, Wadi Ghuzze, 26. viii. 17.

Common on southward migration in August and September about Deir el Belah and Shellal, but I did not notice it during spring migration in the Jaffa-Ramleh district.

Lanius minor. Lesser Grey Shrike.

1 ♂, Shellal, 28. viii. 18. 1 ♂, Shellal, 24. viii. 17.

Common on southward migration in August, September, and October, near Shellal; not noticed during spring migration in the Jaffa-Ramleh district.

Lanius elegans. Pallid Shrike.

1 ♂, Shellal, 8. viii. 17.

There were many about Deir el Belah and Shellal during August, September, and October, and the species is probably resident in extreme southern Palestine and Sinai, but I have not found it anywhere north of Gaza subsequent to these dates.

Lanius nubicus. Masked Shrike.

1 ♂, Shellal, 25. viii. 17. 1 ♂, Jaffa, 16. iv. 18. 1 ♂, Jaffa, 15. vi. 18.

A few passed south in August and September at Shellal, and it was the commonest of the Shrikes going north throughout the Jaffa-Ramleh area in the spring; a few birds remain throughout spring and summer. I did not find them nesting, but it is possible that some of these birds bred there.

Lanius senator. Woodchat.

1 ♂, Jaffa, 20. iii. 18.

Noticed on both migrations at Gaza and Jaffa.

Sylvia communis. Whitethroat.

1 ♂, Shellal, 26. viii. 17.

Plentiful on migration at Shellal during August, September, and October; also seen again in the spring of 1918 near Jaffa, where it nested commonly during April and May.

Sylvia curruca. Lesser Whitethroat.

A summer visitor about Jaffa and Ramleh, breeding commonly in the orange groves. The earliest arrivals made their appearance about 1 March.

Motacilla atricapilla. Blackcap.

1 ♀, Shellal, 7. x. 17.

Seen at Shellal on migration during the first week in October.

Sylvia melanocephala. Sardinian Warbler.

1 ♀, Jaffa, 2. iii. 18.

I first noticed spring arrivals about 1 March, and soon after they became very common and nested in the orange groves about Jaffa.

Sylvia ruppeli. Rüppell's Warbler.

A summer visitor to the orange groves about Jaffa, where it nested.

***Sylvia orphea*. Orphean Warbler.**

I obtained a specimen at Shellal, 29 August, 1917. A specimen taken near Jaffa, 21 July, 1918, was of the thick-billed eastern type, *S. o. crassirostris*. It has only been noticed on migration. This bird was identified by Mr. M. J. Nicoll and presented to the Giza Museum.

***Phylloscopus trochilus*. Willow-Warbler.**

1 ♀, Shellal, 24. viii. 17. 1 ♂, Shellal, 15. ix. 17.

This bird appears to winter to a large extent in Palestine, and was common at Shellal from about 23 August, 1917. During the following winter I noticed it everywhere, but it entirely disappeared in the spring.

***Agrobates galactodes*. Rufous Warbler.**

1 ♀, Jaffa, 5. vi. 18. 1 ♂, Jaffa, 16. iv. 18.

A summer visitor breeding commonly in the orange groves and along the banks of wadis. This bird invariably includes in the lining of its nest portions of the cast skins of lizards and snakes.

***Acrocephalus schœnobæus*. Sedge-Warbler.**

1 ♂, Shellal, 5. ix. 17.

Occurred commonly at Shellal during the autumn, and was again noticed in the spring near Jaffa.

***Cisticola cisticola*. Fantail Warbler.**

1 ♂, Ramleh, 12. v. 18. 1 ♂, Jaffa, 25. ii. 18.

Very common and resident in the cultivated and marshy districts. I found it breeding plentifully in Yebna Marsh, where I took unincubated eggs on 20 June.

***Prinia gracilis*. Graceful Wren-Warbler.**

Common and resident round about Jaffa and Ramleh. There appears to be some slight difference between this and the species which inhabits the Nile Delta.

***Hippolais pallida*. Olivaceous Warbler.**

1 ♂, Shellal, 26. viii. 17. 1 ♀, Jaffa, 26. v. 18.

A common summer visitor nesting in the orange groves of Jaffa and Ramleh.

Turdus musicus. Continental Song-Thrush.

1 ♂, 14. i. 18.

Although common in Yebna Marsh during winter it mostly disappeared in the spring. I saw one bird, however, on 13 May, 1918.

Turdus merula. Blackbird.

Fairly common around Jaffa and Ramleh, also in Yebna Marsh, December to February, but none appeared to remain during spring and summer.

Turdus pilaris. Fieldfare.

Small flocks were seen in Yebna Marsh during January and February, 1918.

Monticola cyanus. Blue Rock-Thrush.

One was secured near Rafa about 20 September, 1917.

Phoenicurus phoenicurus. Redstart.

1 ♂, Shellal, 27. ix. 17.

First seen at Shellal about 25 September, 1917; always in small numbers until about 25 October. It reappeared at Jaffa towards the end of January, and birds were last seen as late as 28 April.

Phoenicurus titys. Black Redstart.

Two examples seen at Shellal, 3 August and 23 October.

Luscinia luscinia. Eastern Nightingale or Sprosser.

1 ♀, Shellal, 4. ix. 17.

Common on autumn migration at Shellal, though not noticed during the following spring.

Cyanosylvia suecica suecica. Red-spotted Bluethroat.

1 ♂, Jaffa, 28. i. 18. 1 ♂, Jaffa, 28. iii. 18.

Very common in Yebna Marsh during winter months, but none seen after the middle of April.

Cyanosylvia suecica cyanecula. White-spotted Bluethroat.

A much less common species than the last, and I only saw two examples, the first being on 12 April, 1918, and the other a few days later.

Saxicola rubicola. Stonéchat.

1 ♂, Jaffa, 10. xii. 17. 1 ♂, Jaffa, 3. iii. 18.

The first I saw was in the Wadi Ghuzze near Shellal, 28 October. Later on, after the advance, I found this bird was very common all over the country. The birds had all gone by 1 April.

Saxicola rubetra. Whinchat.

1 ♂, Shellal, 27. ix. 17. 1 ♂, Dier el Belah, 2. v. 18.

A fairly common bird on migration. First noticed on 27 September near Shellal. I took a specimen at Shellal on 2 May, 1918. This bird was a female and had incubation spots. I saw none during spring and summer near Jaffa or Ramleh.

Ænanthe ænanthe. Common Wheatear.

1 ♂, Shellal, 21. ix. 17. 1 ♂, Jaffa, 28. iii. 18.

Comparatively common on both migrations along the coastal area.

Ænanthe isabellina. Isabelline Wheatear.

1 ♂, Shellal, 1. ix. 17. 1 ♂, Jaffa, 3. iii. 18.

Quite the commonest of the Wheatears seen in the flat country near Gaza, where it appears to be resident. I noticed it on spring migration at Jaffa.

Ænanthe deserti. Desert Wheatear.

1 ♂, Shellal, 19. x. 17.

A few were noticed near Shellal October 1917, and a considerable number on and after 29 March near Jaffa.

Ænanthe leucomela. Pied Wheatear.

1 ♂, Wadi Ghuzze, 28. ix. 17.

I only saw one of these at Shellal, namely, on 28 September. A few were noticed on spring migration at Jaffa.

Ænanthe hispanica xanthomelæna. Eastern Black-throated and Black-eared Wheatear.

1 ♂, Jaffa, 25. iii. 18. 1 ♂, Jaffa, 28. iii. 18. 1 ♂, Jaffa 22. iv. 18. 1 ♀, Jaffa, 4. vi. 18.

A resident species in all rocky and hilly country. I found both Black-throated and Black-eared birds generally distributed. Both forms nested in the cliffs of a small wadi near my tent in close proximity to each other, and I watched four pairs very carefully in order to identify the eggs positively. The specimens listed do not represent the number examined, but they were all that I had time to skin. The females of both forms were indistinguishable from one another, as were also the eggs. Nests were placed in small niches or holes in the wadi cliff and in rocky country under a stone or boulder. Of the eggs which I found in the wadi referred to fully two-thirds were addled, and one clutch of six were all addled. I never found nests with more than three young, and two was the usual number. This condition of the eggs may have been due to the intense heat. All my observations went to show that black-eared and black-throated birds were only forms of the same species, and there seems no sufficient reason for separating them.

***Pycnonotus xanthopygius*. Palestine Bulbul.**

10, Jaffa, 12. xii. 17.

Extremely common all over the country where there is any tree-growth, except in the hills. Resident and breeds in the orange groves. Tristram remarks upon the beautiful song of this bird, comparing it to that of the Nightingale; but, although I lived in localities with these birds all around me from December to August, I never heard them utter anything but the shortest of songs seldom repeated. The note was very rich and full, but so uniform and unvaried—consisting of about five notes—that it almost became monotonous. I took several nests of three and four eggs each.

***Muscicapa grisola*. Spotted Flycatcher.**

10, Wadi Ghuzze, 25. viii. 17.

Common on migration at Shellal in autumn of 1917; it also appeared about 1 May north of Jaffa. I found it breeding in the orange groves at Jaffa, 23 May.

Hirundo rustica transitiva. Palestine Swallow.

1 ♂, Jaffa, 22. i. 18.

A common resident whose numbers are considerably supplemented in the summer.

Hirundo rufula. Red-rumped Swallow.

In the coastal area this bird was only noticed on one occasion in March, but it was common in and about Jerusalem and Jericho, where it nested.

Delichon urbica. House-Martin.

A few noticed on migration in August and September at Shellal and Gaza.

Riparia riparia. Sand-Martin.

1 ♂, Ramleh, 22. v. 18.

A few noticed in August and September on migration near Gaza, also in spring near Jaffa. Large flocks noticed on 22 May.

Dryobates syriacus. Syrian Pied Woodpecker.

1 ♂, Beit Nabala, 9. v. 18.

I secured one at Beit Nabala, north of Ramleh, 9 May, 1918. Though not common, this species from all accounts of natives is resident and fairly plentiful in suitable localities. I found it nesting in the Judean Hills, near Jerusalem, at 2000 ft., on 27 May.

Iynx torquilla. Wryneck.

1 ♀, 27. ix. 17.

Several seen at the end of September near Shellal and Gaza on migration. I saw them again on northward migration 24 March and onwards. I never heard this bird utter its very familiar cry.

Cuculus canorus. Cuckoo.

I took a specimen 5 April, 1918, which appeared to be on migration, and saw others. On only one occasion did I hear the familiar call-note.

Clamator glandarius. Great Spotted Cuckoo.

1 ♀, Jaffa, 25. iii. 18.

First seen near Jaffa 25 March, 1917. None later.

Micropus apus. Swift.

1 ♀, Jaffa, 16. iii. 18.

First seen at Jaffa 25 February, 1918, later on in increasing numbers; they remained throughout the summer. They could be seen every evening before dusk flying towards Jaffa to roost. They undoubtedly nested there, though I had no opportunity of actually finding eggs.

Micropus melba. Alpine Swift.

1 ♂, Ramleh, 2. vi. 18.

A few of these birds appeared on the Wadi Ghuzze on 25 September, 1917, and I secured two. I never saw them again that autumn, but I saw several flying northward over Yebna Marsh 12 May, 1918. On 2 June, 1918, I visited Yebna Marsh and found literally hundreds flying about in the neighbourhood. Of specimens which I secured, two were immature birds of the year. These birds appeared to have no particular direction of flight beyond that they were flying with or against the wind, which was north-east at the time. Up to this date I have never seen any along the coast north of Jaffa, though I have seen isolated birds in the Judean Hills a little west of Jerusalem during May.

Caprimulgus ægyptius. Egyptian Nightjar.

1 ♂, Jaffa, 20. iv. 18.

A specimen was secured, the only one seen, 20 April, near Jaffa. This bird has the most wonderful protective colouring, and it took another officer and myself several minutes before we could see it at a distance of ten yards in open ground.

Merops apiaster. Bee-eater.

1 ♀, Jaffa, 10. iv. 18.

I saw a large number passing south when at Shellal between the 1st and 12th of September. I am told that they used to breed in holes in the wadi cliffs earlier in the

year. At Jaffa I first saw birds on northward migration on 2 April. By 20 April there were hundreds, but nearly all passed on, and at the beginning of June they were quite common, but only a remnant of the earlier numbers.

Upupa epops. Hoopoe.

The earliest appearance was at Jaffa 21 February. At no time did I see them at all commonly. None remained during summer. I noticed migrants again on 28 July.

Alcedo ispida pallida. Kingfisher.

1 ♂, Wadi Ghuzze, 15. viii. 17.

I found this species on the Wadi Ghuzze in September near Shellal. At the mouth of the wadi, south of Gaza, hundreds were seen during migration. I also found them during the winter at Jaffa, where they would sit on the rocks in the sea and fish in the pools around.

Ceryle rudis. Pied or Black-and-White Kingfisher.

A few were to be seen at Jaffa and in Yebna Marsh during the winter of 1917-18, and one pair nested at Nahr Auja.

Halcyon smyrnensis. Smyrna Kingfisher.

1 ♂, Jaffa, 13. v. 18.

Two males were secured close to Jaffa on the river Auja, 13 and 14 May, 1918. Several pairs bred later.

Coracias garrulus. Roller.

1 ♂, Ramleh, 9. v. 18.

A large number passed through the country near Gaza from 7 September to about 14th. They reappeared on 1 May near Gaza, and almost simultaneously near Jaffa. Common in Yebna Marsh 12 May.

Flammea flammea. Barn-Owl.

Up to the time of writing I have only heard of one specimen being taken. This was near Khan Yunus, Gaza, September 1917. I saw the skin. I also saw a bird at night in moonlight about the same date and locality. It appears to be an uncommon species in southern Palestine, and perhaps only occurs on migration.

Athene noctua glaux. Little Owl.

1 ♂, Wadi Ghuzze, 16. viii. 17.

Common everywhere. Breeds.

Asio accipitrinus. Short-eared Owl.

1 ♀, Yebna Marsh, 10. i. 18.

Secured one specimen in Yebna Marsh 10 January, 1918.

This is rather lighter generally than others in the British Museum collection.

Neophron percnopterus. Egyptian Vulture.

Fairly common August, September, October, near Gaza.

I saw none after October, though some were reported in the Judean Hills at Christmas. They began to reappear in March.

Gyps fulvus. Griffon Vulture.

This Vulture was not uncommon near Gaza in July and onward. All I saw were flying very high, with the exception of twenty which I noticed on 14 November, 1917, feeding on a dead camel at Imara, north-west of Beersheba. After our advance towards Jerusalem, which began on 31 October, the whole country was strewn with dead animals which it was impossible to bury, but there were very few vultures anywhere and the carcasses were largely eaten by jackals and foxes.

Circus æruginosus. Marsh-Harrier.

1 ♀, Yebna Marsh, 25. ii. 18.

Very common in Yebna Marsh, and breeds there.

Circus cyaneus. Hen Harrier.

1 ♂, Yebna Marsh, 17. iii. 18. 2 ♂, Yebna Marsh, 28. xii. 17.

Common at intervals during December, January, February, and March in Yebna Marsh.

Buteo ferox. Long-legged Buzzard.

1 ♂, Yebna Marsh, 2. ii. 18.

Fairly common at Shellal September and October 1917. Also during winter around Jaffa and Ramleh.

Buteo rufiventer (:= *B. desertorum* auct.)*. Steppe Buzzard.

1 ♂, Yebna Marsh, 14. i. 18.

Common during winter in the plains, but rare in summer.

Accipiter nisus. Sparrow-Hawk.

1 ♀, Ramleh, 24. xii. 17.

I secured a female which was in pursuit of some small birds 23 December, near Ramleh. Fairly common during winter, but not seen after March until July.

Milvus ægyptius. Yellow-billed Kite.

I am inclined to think that all of the Kites I have seen belong to this species. They were common around Gaza and Shellal in August and September 1917, and on 20 October there were literally hundreds sitting all over the sandy, sun-dried country for twenty-four hours during migration. They were very tame, and I rode to within fifteen yards of several. I found them breeding in April in the Judean Hills in some tall pine-trees near Beit Mahsir. These trees grow on the top of a high hill which stands out prominently in the landscape as one travels from Ramleh to Latroun. This point is about 1800 ft. high, and is one of the very few places in this district where these trees grow.

Falco peregrinus, subsp.? Peregrine Falcon.

I shot one which came regularly to attack a pigeon-loft in February 1918. It is not uncommon on both migrations.

Falco subbuteo. Hobby.

A few were observed during migration in September at Shellal, and others were seen during winter near Ramleh.

Falco barbarus. Barbary Falcon.

Up to 1 March, 1918, I saw four examples which appeared to belong to this species since 9 December, all in the vicinity of Jaffa and Ramleh. Also north of Jaffa 12 April, but I did not secure a specimen.

Falco cherrug. Saker Falcon.

One was secured near Rafa August 1917. I saw two examples sitting on telegraph-poles near Shellal at the beginning of the same month.

* See pp. 253-254.

Falco æsalon. Merlin.

1 ♂, Yebna Marsh, 3. ii. 18.

A male secured 3 February, 1918, in Yebna Marsh, near Jaffa. Other examples were reported at Khan Yunus September 1917.

Falco tinnunculus. Kestrel.

1 ♂, Shellal, 18. ix. 17. 1 ♀, Shellal, 6. x. 17. 1 ♂, Shellal, 6. x. 17.

Common and resident in Palestine. Amongst the hundreds which I saw at Gaza in the autumn I only noticed one adult male. In the spring at Jaffa, Ramleh, Jerusalem, etc., they bred freely in suitable places, and I found nests in the walls of unused wells 20 ft. below ground-level.

Tadorna tadorna. Common Sheld-Duck.

Two of four seen, were secured in Yebna Marsh, 2 February, 1918.

Tadorna casarca. Ruddy Sheld-Duck.

Saw one in Yebna Marsh, 14 January, 1918.

Anas boscas. Mallard.

A few seen during winter in Yebna Marsh and others flying high. They were never common.

Querquedula crecca. Common Teal.

One seen in Wadi Ghuzze 10 September, 1917, and many more in Yebna Marsh December, January, and February.

Querquedula querquedula. Garganey.

1 ♂, Yebna Marsh, 21. ii. 18.

One secured in Yebna Marsh out of a small flock 21 February, 1918.

Mareca penelope. Widgeon.

A few seen in Yebna Marsh from time to time during winter months, but most during December.

Spatula clypeata. Shoveler.

A few pairs frequented Yebna Marsh during the winter months.

Dafla acuta. Pintail.

One of the commonest of the ducks during winter, but as there was little suitable inland water I saw mostly large flocks flying along the sea-coast on migration in February.

Nyroca ferina. Pochard.

I saw a few odd birds in Yebna Marsh during the winter 1917-18.

Nyroca nyroca. White-eyed Pochard.

I killed one in Yebna Marsh in February. This is one of the commonest ducks in Egypt during winter, but it was not common in southern Palestine.

Glaucion clangula. Golden-eye.

1 ♀, Yebna Marsh, 20. i. 18.

A single specimen was taken near Jaffa, 20 January, 1918.

Ardea cinerea. Heron.

One seen on the lake at Belah, near Gaza, 3 May, 1918; also one frequented Nahr Auja, near Jaffa, during spring.

Ardea purpurea. Purple Heron.

Saw two on 2 and 3 May, 1918, at Belah Lake, near Gaza.

Ardeola ralloides. Squacco Heron.

1 ♂, Dier el Belah, 3. v. 18.

Saw two pairs on Belah Lake, near Gaza.

Ardeola ibis. Buff-backed Heron.

Saw one on Belah Lake, near Gaza, 3 May, 1918.

Nycticorax nycticorax. Night-Heron.

I secured a specimen of an adult male in Wadi Ghuzze, 19 September, 1917. I never saw another there, though I often heard them passing over at night during migration. A pair frequented the trees by Nahr Auja, north of Jaffa, in April and May. I saw them up to 8 May.

Botaurus stellaris. Bittern.

1 ♀, Yebna Marsh, 31. xii. 17.

I do not think I ever visited Yebna Marsh without seeing one or more between December and February. I saw birds 19 May, 1918, and on several subsequent occasions up to July. Found an old nest with egg-shells 15 July.

Ixobrychus minutus. Little Bittern.

1 ♀, Ramleh, 12. v. 18.

Common in suitable localities for about ten days from 7 May.

Ciconia ciconia. White Stork.

A pair seen at Bir el Esani, south of Beersheba, 4 September 1917, and two on 13 November in open dry country near Sheria, north-west of Beersheba. I also noticed a flock of about ten in Yebna Marsh 4 February, and on 8 March I saw several flocks of some hundreds each, circling and making their way northwards along the coast just inland. At Wadi Ghuzze, 3 May, 1918, I found many scores of birds lying by the pools, apparently dead from exhaustion. During April and May there were thousands scattered over the Judean Hills but few in the plains near Jaffa. On 2 June I saw two flights of several hundred birds each near Ramleh. It is a little surprising to me that I have seen no signs of them breeding anywhere in or south of the Jaffa-Jerusalem line, although there are many suitable sites.

Ciconia nigra. Black Stork.

Major Austin, R.A.M.C., reported having seen one amongst a flock of white storks in the vicinity of Jericho in June.

Plegadis falcinellus. Glossy Ibis.

A few were seen near Ramleh during spring migration.

Grus grus. Crane.

I saw four of these birds in the open sandy country, nowhere near water or vegetation, north-west of Beersheba, near Sheria, 14 November, 1917.

Chlamydotis macqueenii? Macqueen's Bustard.

A flock of eight Bustards was first noticed in the flat country near Ramleh about 5 July. I watched these myself through glasses for some hours, but was unable to obtain a specimen. An officer, however, shot a bird which when plucked and cleaned was said to weigh 4lb. They all disappeared on 28 July.

Some tail-feathers were sent to Mr. M. J. Nicoll, who gave it as his opinion that they belonged to either *C. undulata macqueenii* or *C. undulata undulata*, very probably the former.

Edicnemus edicnemus. Stone-Curlew.

1 ♀, Jaffa, 19. iv. 18.

A few in Yebna Marsh in December 1917, but none in January and February. They frequented the hilly ground in the vicinity. Several birds, about twenty pairs, frequented the stony hills north of Jaffa during April 1918, and I found one egg 18 April.

Cursorius gallicus. Cream-coloured Courser.

1 ♂, Shellal, 21. ix. 17.

Very common round Shellal from August to November. Noticed near Ramleh the following June and July. A nest containing two eggs was found as late as 25 July, and unfledged young 30 July.

Glareola pratincola. Collared Pratincole.

Two pairs seen at Belah Lake 3 May, 1918, and many about Yebna Marsh 12 May. One or two pairs bred near the mouth of Nahr Rubin, and I saw young on 30 June.

Glareola nordmanni. Black-winged Pratincole.

1 ♂, Wadi Ghuzze, 4. x. 17.

I secured one of a few I noticed on the sandy desert near Wadi Ghuzze.

Scolopax rusticola. Woodcock.

I shot one on the sand dunes south of Jaffa, near Wadi Rubin, 8 January, 1918, and others were reported as having been seen in Yebna Marsh in December.

Gallinago gallinago. Common Snipe.

I saw one or two on the wing in September at the Wadi Ghuzze, and later they were plentiful in Yebna Marsh during winter.

Limnocryptes gallinula. Jack Snipe.

Fairly common in Yebna Marsh during winter.

Tringa minuta. Little Stint.

Many seen September and October on pools in Wadi Ghuzze.

Tringa alpina. Dunlin.

1 ♂, Wadi Ghuzze, 23. ix. 17.

Frequented pools in the Wadi Ghuzze in September. One secured on 25 September had almost completely changed to winter plumage. Common on the coast near Jaffa January and February.

Tringa ferruginea. Curlew Sandpiper.

I saw a small flock and secured one at Belah Lake 3 May, 1918.

Calidris arenaria. Sanderling.

1 ♂, Jaffa, 4. i. 18.

Common on the sea-coast during winter.

Machetes pugnax. Ruff.

2 ♂, Jaffa, 15. iii. 18.

These birds were common in flocks on flood-water near Jaffa during the winter, and when the two birds were secured some of the males were beginning to show white on the neck. On 3 May I shot a female at Dier el Belah, and noticed a small flock in Yebna Marsh as late as 2 June.

Totanus totanus. Common Redshank.

1 ♀, Yebna Marsh, 12. v. 18.

A few seen on the freshwater lake at Belah 2 May, and I secured a specimen in Yebna Marsh 12 May, 1918.

Totanus nebularius. Greenshank.

One secured at Shellal, 6 September, 1917. Some were seen in the spring of 1918 at the mouth of Wadi Ghuzze in breeding-plumage. I saw a pair in Yebna Marsh, near Jaffa, 5 February. Common at the mouth of Wadi Ghuzze on 3 May.

Totanus hypoleucus. Common Sandpiper.

A few noticed in Yebna Marsh during the two visits paid in March. The specimen from which identification was made was taken on the Wadi Ghuzze at Shellal on 3 May, 1918, and is now in the Giza Museum.

Totanus glareola. Wood-Sandpiper.

1 ♂, Yebna Marsh, 28. i. 18.

A few birds frequented Yebna Marsh in winter.

Limosa limosa. Black-tailed Godwit.

1 ♂, Diel el Belah, 3. v. 18.

A few were frequenting the lake at Belah in May. The species had been noted in the autumn of 1917 at the mouth of Wadi Ghuzze.

Numenius tenuirostris. Slender-billed Curlew.

1 ♀, Shellal, 4. x. 17.

I secured one of two which I noticed searching for food on the dry, sandy country near Tel el Fara, Shellal.

Himantopus himantopus. Black-winged Stilt.

Saw a few on Belah Lake, 3 May, 1918.

Charadrius apricarius. Golden Plover.

Small flocks were seen in Yebna Marsh during January and February, 1918.

Ægialitis hiaticula. Ringed Plover.

1 ♂, Shellal.

Fairly common on the Wadi Ghuzze at the end of August and beginning of September. Also a few seen on the shore near Jaffa on 18 January and a number at Belah Lake 3 May.

Ægialitis alexandrina. Kentish Plover.

1 ♀, Jaffa, 25.vi.18. 1 ♂, Jaffa, 14.i.18.

Common all along the coast during winter months and seen in fair numbers on Belah Lake 3 May, where they probably breed. They were common along the sea-shore near Jaffa, but I had no opportunity of ascertaining if they were breeding until 20 June, when I found several pairs with young.

Ægialitis geoffroyi. Geoffroy's Plover.

1 ♀, Jaffa, 21.vi.18. 1 ♂, Jaffa, 30.vi.18.

I noticed a flock of these birds (about thirty) on the sea-shore at the mouth of the river Auja, near Jaffa, in June. Of the three I secured on this occasion all were females, which on dissection showed no sign of breeding. Took an adult male in summer plumage, 30 June. I could not find it breeding, but on the latter date I found it singly and in pairs at the mouth of Nahr Rubin.

Hoplopterus spinosus. Spur-winged Plover.

One secured in Wadi Ghuzze 13 September, 1917, and another seen 30 September. Common round Belah Lake 3 May.

Vanellus vanellus. Lapwing.

I came across flocks near the coast during our advance northward in November 1917, and they were common in suitable localities during the winter months but all disappeared in the spring.

Larus ridibundus. Black-headed Gull.

Very common in flocks during the winter.

Larus cachinnans. Herring-Gull (probably Yellow-legged). Several seen on the coast during winter.

Hydrochelidon nigra. Black Tern.

One immature bird on Wadi Ghuzze, 30 September, 1917.

Hydrochelidon hybrida. Whiskered Tern.

One on Wadi Ghuzze, 30 September, 1917.

Puffinus puffinus yelkouan. Levantine Shearwater.

1 ♂, Jaffa, 14. i. 18.

One picked up dead on sea-shore near Jaffa.

Porzana porzana. Spotted Crake.

1 ♂, Jaffa, 9. iv. 18. 1 ♂, Jaffa, 23. iv. 18.

Several specimens were picked up about 29 September, 1917, near Shellal, Rafa, etc., having been killed on telegraph-wires. I heard of some having been seen alive. They appeared to pass at night and not to rest in these parts. I picked up others under a telegraph-route a little north of Jaffa on the 9th and 23rd of April.

Crex crex. Corn-Crake.

1 ♀, Jaffa, 10. v. 18.

Shot one near Wadi Ghuzze on 30 September, 1917. Others were reported in the same neighbourhood about the same time. Picked one up injured by telegraph-wires, 10 May, 1918. Natives report it as common during summer and nesting, but I did not notice it.

Gallinula chloropus. Moorhen.

I saw one on the banks of the river Auja, near Jaffa, 13 April, and others later. Unlike those usually seen in England this bird was very shy.

Fulica atra. Coot.

One noticed in Yebna Marsh in December 1917, but though the locality seems very suitable I have seen no others.

Columba oenas. Stock-Dove.

Small flocks of these were noticed on the Wadi Ghuzze, near Shellal, October 1917. As there were no villages or towns nearer than Gaza (twelve miles), it is probable that these were pure wild birds.

Streptopelia turtur. Turtle-Dove.

I secured a specimen near Jaffa, 27 March, 1918. Other Turtle-Doves have not been actually identified.

Pterocles alchata. Pintailed Sand-Grouse.

2, ♂ ♀, Wadi Ghuzze, 20. viii. 17.

Seen at Shellal, near Gaza, August and September, 1917.

Pterocles senegallus. Senegal Sand-Grouse.

2, ♂ ♀, Wadi Ghuzze, 14. viii. 17.

The most common of these species found on Wadi Ghuzze.

Pterocles arenarius. Black-bellied Sand-Grouse.

I found this species in company of other Sand-Grouse at Shellal, near Gaza, where it was the least common of the three I noticed. Like others of its kind it came to drink in the Wadi Ghuzze about $1\frac{1}{2}$ hours after sunrise and after feeding. At this point, probably owing to the number of troops who were camped in the wadi, Sand-Grouse only came to drink in the morning and never at night. The crops of the birds contained barley, wheat, and other small seeds during August and September, 1917. Unlike the two preceding species they seldom uttered any cry whilst flying, and were therefore often close by or past when first seen.

Caccabis chukar. Chukar Partridge.

1 ♂, near Jerusalem, 9. vi. 18.

A nest containing eleven eggs was found on 7 May. This bird is common in the hills, and I have met with it at an altitude of 2800 ft.

Coturnix coturnix. Common Quail.

1 ♂, Yebna Marsh, 22. ii. 18.

The southward migration near Gaza began about 28 August and lasted until 10 September. They confined themselves almost entirely to the sea-coast, where large numbers were caught in wire-netting by the troops. The spring migration did not seem to cover so definite a period, and birds were common from the middle of January to the end of February. Some remained all the year in suitable localities.

XIV.—*A note on the Buzzards of the Ethiopian Region.*

By W. L. SCLATER, M.A., M.B.O.U.

(Plate V.)

RECENTLY while cataloguing the Accipitres of the British Museum I came across a remarkable new form of Buzzard from Somaliland, which I described at the meeting of the British Ornithologists' Club in November last year. This has now been figured (Pl. V.) by Mr. Grönvold, and I have thought it might be useful to workers to give a short synopsis of the African species of *Buteo*, especially as some points have arisen which do not appear to have been previously noticed.

The following is a list of the species:—

Buteo ferox ferox.

Accipiter ferox S. G. Gmelin, Nov. Comm. Acad. Petrop. xv. 1771, p. 442, pl. x.: Astrachan.

[For the synonyms of this form, see Hartert, Vög. pal. Faun. p. 1115.]

Distr. S.E. Russia and the steppes of central Asia east to Irkutsk, south to the Himalaya, Asia Minor, and Egypt. Farther south in winter to the plains of northern India and the Anglo-Egyptian Sudan.

Buteo jakal jakal.

Falco jakal Daudin, Traité, ii. 1800, p. 161: Cape of Good Hope.

Distr. South Africa, including the Cape, Orange Free State, Natal, and Transvaal Provinces, but not north of the Limpopo so far as is known.

Buteo jakal augur.

Falco (Buteo) augur Rüppell, N. Wirbelt. 1836, p. 38, pl. 16: Abyssinia.

Falco (Buteo) hydrophilus Rüppell, ibid. p. 39, pl. 17: Abyssinia.

Distr. The mountains of Abyssinia from Senafé southwards through the high plateau of central Africa to southern Rhodesia, where the Museum has a young example collected by Swynnerton at Chirinda.

That there are two distinct phases of this species admits now of no doubt; the series in the Museum is a very fine one, and there are both young and adults of either phase. Rüppell's pl. 16, fig. 1 is an adult in the black phase, fig. 2 a not quite adult in the white-bellied phase; pl. 17, fig. 1 is a young bird in the white-bellied phase, fig. 2 a young bird in the black phase.

***Buteo jakal archeri* (Pl. V.).**

Buteo jakal archeri W. L. Slater, Bull. B. O. C. xxxix. 1918, p. 17: Waghar, Somaliland.

The original description is as follows:—

“Resembling *Buteo jakal augur*, but the white on the scapulars and back replaced by reddish; below from the lower breast posteriorly to the under tail-coverts, including the thighs, rich rufous instead of white; a few splashes of the same rufous on the under wing-coverts; chin, throat, and upper breast white, with a few spots of black and a slight trace of rusty stain on some of the feathers. ‘Iris dark brown, bill dark slate, cere and legs orange, claws blue slate’ (*Bury*).

“*Measurements.* Wing 400 mm.; tail 195; tarsus 85; bill, without cere, measured with callipers, 28.

“*Type*, a male from Waghar, Somaliland, collected by Mr. G. W. Bury, 6 Oct., 1905. B.M. reg. no. 1908/12/12a/5.

“There is another example in the Museum marked ‘30 miles inland from Berbera,’ obtained by Mr. E. Lort Phillips and identified by Shelley (*‘Ibis,’* 1885, p. 391) as *B. augur*.

“Two other examples collected by Mr. G. F. Archer, C.M.G., H.M.’s Commissioner for the Somaliland Protectorate, at Bihendula and Lower Sheikh in Somaliland are in the collection of Col. Stephenson Clarke, through whose courtesy I have been able to exhibit them to you here to-night.



BUTEO JAKAL ARCHERI.

"The bird is named after Mr. Archer, who has recently been making a very fine collection of Somaliland birds.

"I regard the Jackal and Augur Buzzards, together with the new Somaliland form, as constituting a group of three subspecific forms under the specific name of *Buteo jakal*."

***Buteo auguralis*.**

Buteo auguralis Salvadori, Atti Soc. Ital. Milan. viii. 1865, p. 377: Abyssinia and Gebel Aidun in the Lybian Desert.

Distr. North-eastern and western Africa from southern Abyssinia and the Anglo-Egyptian Sudan westwards to the Gold Coast Colony and south to Gaboon and Angola.

There are examples in the British Museum from Sennar, the Baro river, the Bahr el Ghazal, Sierra Leone, Gold Coast, and Gaboon.

This species can always be distinguished by the characteristic chestnut-reddish patch on the side of the neck and in the adult by its rich rufous tail, which has only one sub-terminal black band; below it is white, often with a patch of blackish brown on the chest and a few spots of the same colour on the rest of the underparts, the feathers of the shoulders and back have very dark chestnut-brown edgings; wing averages 330 mm.

***Buteo buteo rufiventer*.**

Buteo rufiventer Jerdon, Madras Journ. xiii. 1844, p. 165: Nilgiri hills; id. Illustr. Ind. Orn. pl. 27.

Buteo vulpinus Lichtenstein, Nomencl. Av. Mus. Berol. 1854, p. 3: Kaffirland [nom. nud.].

Buteo anceps A. E. Brehm, Naumannia, 1855, p. 6: Upper Blue Nile.

Buteo minor Heuglin, S.B. Akad. Wien, xix. 1856, p. 257: Nubia, etc.

Buteo delalandi des Murs, Rev. Mag. Zool. 1862, p. 52 [in part]: South Africa.

Buteo desertorum auct. nec Daudin.

Distr. Breeding in south-east Russia and perhaps Asia

Minor and Persia, east to western Siberia and Turkestan, south in winter to Africa from the Sudan to the Cape Province, also to the hills of southern India and Ceylon. Once in England.

This species has up till recently been known as *Buteo desertorum*, but as Hartert (Vög. pal. Faun. ii. p. 1126) has clearly shown, Daudin's name is inapplicable, as neither the plate nor the figure given by Levaillant, on which Daudin's name is based, can be identified with the Steppe Buzzard as it has been generally called. Hartert proposed to adopt Brehm's *Buteo anceps*, a name founded on an example from the upper Blue Nile. Recently, however, when cataloguing the Steppe Buzzards in the British Museum I came across an old dismounted specimen which I unhesitatingly believe to be the original of Jerdon's plate in the 'Illustrations of Indian Ornithology,' and must be regarded as the type of *Buteo rufiventer*. It is undoubtedly an example of the bird which has been hitherto known as *B. desertorum*. Moreover, there are in the Museum several additional examples from the Nilgiri hills obtained subsequently by Hume's collector, Davison (see 'Stray Feathers,' x. pp. 159, 338).

Under these circumstances I see no reason why the Steppe Buzzard should not in future be known as *Buteo buteo rufiventer*.

***Buteo oreophilus*.**

Buteo oreophilus Hartert & Neumann, Orn. Monatsber. xxii. 1914, p. 31: Koritscha, Djam Djam, S. Abyssinia.

Distr. Mountains of central and north-eastern Africa. There are examples in the British Museum from Ruwenzori, Kenia, and Kilimanjaro.

This species, recently described by Hartert and Neumann, appears to be a quite distinct form characterized by the absence of rufous from the plumage, which is dusky brown slightly varied with white on the bases and edges of some of the feathers; below white, spotted and streaked with brown. The tail is brown with six to eight narrow bands of paler.

The wing of a male from Ruwenzori measures 330, of a female about 340 mm.

The examples from Ruwenzori were identified as the immature stages of *B. auguralis*, but there seems to be little doubt that they are a distinct species confined to the mountains.

With this form I am now inclined to identify some Buzzards from South Africa collected by Claude Grant. These I myself named *Buteo desertorum* (Ibis, 1912, p. 12), but I felt uncertain about the identification at the time, and I am now convinced that they are not *Buteo buteo rufiventer* (i. e. *desertorum*).

They differ from the Ruwenzori birds in being slightly lighter above, while below they are not nearly so heavily spotted, and there is a tinge of rufous on the tail.

It seems probable from Mr. C. Grant's field-notes that they were breeding, and the date when the Transvaal birds were collected (May) shows that they were not birds wintering in South Africa. The wings of the males measure 315-330, and of the females 335-358 mm.

I should be inclined to regard *Buteo oreophilus* as a resident race of *B. b. rufiventer* which has recently become established in the mountains of Africa.

***Buteo menetriesi*.**

Buteo menetriesi Bogdanow, Ois. Caucasus, 1879, p. 5 : Caucasus [in Russian] ; vide J. f. O. 1880, p. 260, for translation, also Seebohm, Ibis, 1883, p. 5.

Distr. Caucasus region, apparently ranging into Africa. There are examples in the British Museum from Abyssinia, Nyasaland, and the Cape Province.

This species, which Hartert (Vög. pal. Faun. p. 1126) regards as identical with *B. b. anceps* (= *B. b. rufiventer*), is represented in the Museum by two specimens from Lenkoran on the Caspian Sea from the Seebohm collection. These differ, however, from the true *B. b. rufiventer* in having the plain-coloured unbanded red tail ; they are also much more rufous above and below than the typical Steppe

Buzzard, and in many respects are like a small edition of *B. ferox*.

In the collection of the British Museum I found some very similar specimens from Africa, viz.: 1 ♂, Managasha Mt., 10,000 feet, nr. Addis Ababa, May (Zaphiro); 1, Zomba, July; 1 ♂, Mt. Malosa, 5500 feet, November, Nyasaland (Whyte); 1, East London, Cape Prov., September (Rickard); and 1 from South Africa with no history.

Here again we have a May and a July bird which should be breeding in Russia during the months in which they were taken in Africa.

As it does not seem possible to identify these Buzzards with *B. b. rufirenter* (*desertorum* auct.), I have provisionally assigned them to this Caucasian race in the hope that what I have done may draw the attention of others to the difficulties which surround the identification of African Buzzards and encourage further observation and collecting.

XV.—*Notes on Collections of Birds in the British Museum, from Ecuador, Peru, Bolivia, and Argentina.* Part II. PODICIPEDIFORMES — ACCIPITRIFORMES. By CHARLES CHUBB, F.Z.S., M.B.O.U.*

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Family PODICIPEDIDÆ.

Podiceps brachyrhynchus.

Podiceps brachyrhynchus Chapman, Bull. Amer. Mus. Nat. Hist. xiii. 1899, p. 255: Matto Grosso.

No. 1252. ♀ imm. Eten, N.W. Peru, 15 metres, 21 Sept. 1899.

Podiceps americanus.

Podiceps americanus Garnot, Voy. 'Coquille,' Zool. i. 1829 p. 599: Chile.

* Continued from p. 55.

Podiceps americanus Ogilvie-Grant, Cat. B. Brit. Mus. xxvi. 1898, p. 524.

No. 3178. ♂ adult. Pampa Aullagas, Bolivia, 3680 metres, 19 Oct. 1901. "Patito."

Podiceps juninensis.

Podiceps juninensis Berl. & Stolz. Ibis, 1894, p. 112: Lake Junin.

Podiceps juninensis Ogilvie-Grant, Cat. B. Brit. Mus. xxvi. 1898, p. 538: Lake Tungasuca.

No. 3134. ♂ adult. Potosi, Bolivia, 4500 metres, 30 Sept. 1901. "Patito." "Iris red; bill black; feet bronze" (*P. O. Simons*).

This appears to be the first record of this bird from Bolivia.

Podiceps major.

Colymbus major Bodd. Tabl. Pl. Enl. 1783, p. 24: Cayenne.

Aechmophorus major Ogilvie-Grant, Cat. B. Brit. Mus. xxvi. 1898, p. 549.

No. 1386. ♂ imm. Eten, N.W. Peru, 15 metres, 14 Oct. 1899.

Podilymbus podiceps.

Colymbus podiceps Linn. Syst. Nat. i. 1758, p. 136: "Habitat in America septentrionali."

Podilymbus antarcticus Hartl.; Tacz. Orn. Pér. iii. 1886, p. 498.

Podilymbus podiceps Brabourne & Chubb, B. S. Amer. i. 1912, p. 28, no. 276.

No. 186. ♂. Trujillo, N.W. Peru, 5 Jan. 1913.

"Iris brown; feet dull green; bill bluish white, dark above" (*Brabourne*).

This specimen is an adult male in non-breeding plumage.

Family LARIDÆ.

Sterna hirundo.

Sterna hirundo Linn. Syst. Nat. 10th ed. 1758, p. 137: Sweden.

Sterna fluvialis Naum. ; Saunders, Cat. B. Brit. Mus. xxv. 1896, p. 54.

a. ♀ imm. Lima, Peru, 22 June, 1913. "Iris brown; bill and feet dark red" (*Brabourne*).

***Sterna lorata*.**

Sterna lorata Phil. & Landb. Arch. für Naturg. 1863, i. p. 124: Chile; Saunders, Cat. B. Brit. Mus. xxv. 1896, p. 126.

Eleven males and one female, adult et imm. Eten, Northwest Peru, 10-15 metres, Sept. 1899. "San Josicita."

I have compared these specimens with others from Chile and Peru in the British Museum and find them to be very similar.

***Rhynchops cinerascens*.**

Rhynchops cinerascens Spix, Av. Bras. ii. 1825, p. 80, pl. 102: "in locis ripariis flum. Amazonum."

Rhynchops melanura Swains. ; Tacz. Orn. Pér. iii. 1886, p. 437.

No. 4. ♂. Trujillo, N.W. Peru, 11 Aug. 1912. "Iris brown; feet vermilion; bill vermilion at base, remainder black" (*Brabourne*).

This example is in the fully adult summer plumage.

***Larus serranus*.**

Larus serranus Tschudi, Archiv für Naturg. 1844, i. p. 314: Peru; Tacz. Orn. Pér. iii. 1886, p. 452: Lake Junin; Callao.

No. 1478. ♀. Baños, Cajamarca, Peru, 2800 metres, 16 Nov. 1898.

No. 1846. ♀. Galera, Junin, Peru, 4800 metres, 24 Feb. 1899.

No. 2841. ♂. Cochabamba, Bolivia, 2500 metres, 20 April, 1901. "Gaviata."

All three specimens mentioned above are in fully adult plumage with black heads, entire white tails, and conspicuous white semicircular eyelids.

Larus franklini.

Larus franklini Richardson, Faun. Bor.-Amer. 1831, p. 424, pl. 71: Saskatchewan; Tacz. Orn. Pér. iii. 1886, p. 451: Lima; Chorillos; Payta.

Nos. 1613, 1614. ♀ imm. Callao, Peru, 10 metres, 10 Jan. 1900. "Gaviata."

These two birds, which are in immature plumage, have the head and sides of the face black intermixed with white—the white much more extensive on the forehead, lores, and fore part of the cheeks; the tails are grey with a brown subterminal band.

Larus cirrhocephalus.

Larus cirrhocephalus Vieill. N. Dict. d' Hist. Nat. xxi. 1818, p. 502: Brésil; Tacz. Orn. Pér. iii. 1886, p. 455: Payta; Lima.

No. 1203. ♂. Eten, N.W. Peru, 15 metres, 16 Sept. 1899. "Gaviata."

Larus maculipennis.

Larus maculipennis Licht. Verz. Doubl. 1823, p. 83: Monte Video; Selater & Hudson, Argent. Orn. ii. 1889, p. 198.

a. ♂ imm. Papin, Bonifacio, Argentina, 18 April, 1916.

This bird, which is slightly immature, was collected by Mr. Robin Kemp.

Larus modestus.

Larus modestus Tschudi, Arch. für Naturg. 1843, i. p. 389: coast of Peru; Tacz. Orn. Pér. iii. 1886, p. 449.

No. 3. ♂. Trujillo, N.W. Peru, 13 March, 1912. "Iris brown, bill and feet black" (*Brabourne*).

This specimen, which is in immature plumage, was collected by the late Lord Brabourne and presented by him to the British Museum.

***Larus dominicanus*.**

Larus dominicanus Licht. Verz. Doubl. 1823, p. 82 : coast of Brazil ; Sclater & Hudson, Argent. Orn. ii. 1889, p. 197.

a. ♀. Estancia La Maria Luisa, Argentina, 20 May, 1916. This bird was collected by Mr. Robin Kemp.

Family THINOCORYTHIDÆ.

***Attagis gayi latreillei*.**

Attagis latreillei Less. Bull. Sci. Nat. (Férussac) 25, 1831, p. 243 : Ecuador ; Brabourne & Chubb, B. S. Amer. i. 1912, p. 36, no. 357.

Attagis chimborazensis Schl. P. Z. S. 1860, pp. 73, 82 : Mount Chimborazo, 14,000 ft.

No. 588. ♀ imm. Chimborazo, Ecuador, 5600 metres, 22 March, 1899. "Chimborazo Aerial Perdice" (*P. O. Simons*).

This bird is very similar to the type-specimen of *A. chimborazensis* in the British Museum.

a, b. ♂ ♀. Antisana, E. Ecuador, 12,000 to 15,000 ft., Nov. 1914. ♂. "Iris brown ; feet light burnt sienna ; bill black. ♀. Iris reddish brown ; feet dull yellow ; bill brown" (*W. Goodfellow*).

These two specimens are in the fully adult plumage and were presented to the British Museum by Mr. E. J. Brook.

***Attagis gayi simonsi*.**

Attagis gayi simonsi Chubb, Bull. Brit. Orn. Club, xxxviii. 1918, p. 41.

Nos. 2112 ♀, 2113 ♂ adult. Crucero, Lake Titicaca Basin, 5000 metres, 30 June, 1900. "Kuli Kuli."

No. 2113, which is an adult male, differs from *Attagis gayi latreillei* in being minutely and profusely mottled with grey, instead of buff, the marginal and submarginal lines on the feathers of the fore-neck paler and not so pronounced ; the breast, abdomen, and under tail-coverts vinaceous cinnamon, not pale chestnut, the under wing-coverts paler, and the wing and tail measurements rather larger. "Iris brown ; bill dark ; feet bronze" (*P. O. Simons*).

Total length 268 mm., exposed culmen 17, wing 189, tail 80, tarsus 25.

The adult female is similar to the adult male but rather larger. Wing 192 mm.

The type, which is in the British Museum, was collected by P. O. Simons at Crucero in Peru, on the western side of Lake Titicaca, at an elevation of 5000 metres, on the 30th of June, 1900.

FAMILY CHARADRIIDÆ.

Arenaria interpres.

Tringa interpres Linn. Syst. Nat. i. 1758, p. 148 : "America Septentrionali."

Streptilas interpres Tacz. Orn. Pér. iii. 1886, p. 349 : Chorillos : Paraca Bay.

Arenaria interpres Salvad. & Festa, Boll. Mus. Torino, xv. 1900, No. 368, p. 42 : Ecuador.

No. 72. Puna Island, Ecuador, 10 Nov. 1898.

Nos. 1610, 1611. Chancey, W. Peru, 30 Dec. 1899. "Iris brown ; feet red ; bill black" (*P. O. Simons*).

These three specimens are in the adult winter plumage.

Hæmatopus palliatus.

Hæmatopus palliatus Temm. Man. d'Orn. ii. 1820, p. 532 : Venezuela ; Tacz. Orn. Pér. iii. 1886, p. 350.

No. 1637. ♀. San Lorenzo Isl., Peru, 16 Jan. 1900. "Glieglic." "Iris yellow ; feet flesh-colour ; bill red" (*P. O. Simons*).

This specimen is in the fully adult plumage.

Oreophilus ruficollis ruficollis.

A nestling in down of this species from the Chuput Valley, Patagonia, collected by J. Koslowsky, is cream-white dotted with black, smoke-brown, and silvery-white on the back, wings, and top of head, and much more sparsely on the hind-neck and sides of the face. Under surface uniform cream-colour.

In addition to the four specimens collected by Simons in Bolivia, there is, in the British Museum, a male from Islay, south-western Peru, collected by H. Whitely in

September 1867 and a bird from Tarapaca; these are paler on the mantle than those from farther south, the rufous chestnut on the throat is deeper in colour, and the abdomen, flanks, and under tail-coverts buff instead of white. I propose, therefore, that this form be separated as a subspecies under the following title:—

***Oreophilus ruficollis simonsi*, subsp. nov.**

Adult male. Differs from *O. ruficollis ruficollis* (Wagl.) from Patagonia, in being olive-grey on the mantle instead of olive, the rufous chestnut on throat deeper in colour, and the sides of the body, lower flanks, abdomen, and under tail-coverts buff instead of being for the most part white. “Iris brown; bill black; tarsi pink” (*P. O. Simons*).

Total length 270 mm., exposed culmen 31, wing 179, tail 86, tarsus 50, middle toe and claw 25.

Adult female. Similar to the adult male but slightly smaller.

Total length 265 mm., exposed culmen 28, wing 175, tail 71, tarsus 50, middle toe and claw 25.

Habitat. Bolivia, S.W. Peru, and Tarapaca.

The description of the male is based on No. 3145, and that of the female on No. 3197; both of which are in the British Museum.

No. 3145. ♂. Challapata, Bolivia, 3750 metres, 10 Oct. 1901.

According to Simons this bird was—“running about on the gravel pampa, eating ants.”

Nos. 3139, 3192 ♂, 3197 ♀. Uyuni, Bolivia, 3660 metres, Nov. 1901. “Tio-tan-cara.”

***Ptiloscelys resplendens*.**

Charadrius resplendens Tschudi, Arch. fur Naturg. 1843, i. p. 388: “Antium incola,” *i.e.* Peru.

Vanellus resplendens Tacz. Orn. Pér. iii. 1886, p. 336.

Ptiloscelys resplendens Brabourne & Chubb, B. S. Amer. i. 1912, p. 38, no. 370.

Nos. 1435 ♀, 1438 ♂, 1438 a ♂. Paramo, Cajamarca, Peru, 4600 metres, 9 Nov. 1899.

These specimens are in fully adult plumage.

Squatarola squatarola.

Tringa squatarola Linn. Syst. Nat. i. 1758, p. 149 : Sweden.

Squatarola helvetica (Linn.); Tacz. Orn. Pér. iii. 1886, p. 338 : Chimbote, Tumbes.

Squatarola squatarola Brabourne & Chubb, tom. cit. p. 38, no. 374.

Nos. 1615, 1616. ♂. Callao, Peru, 10 metres, 10 Jan. 1900.

These examples are in the fully adult winter plumage.

Charadrius vociferus.

Charadrius vociferus Linn. Syst. Nat. i. 1758, p. 150 : "Habitat in America septentrionali."

Ægialitis vocifera Tacz. Orn. Pér. iii. 1886, p. 342.

No. 144. ♂. Trujillo, N.W. Peru, 17 Nov. 1912. "Iris brown, ring round eye orange ; feet flesh-colour ; bill black" (*Brabourne*).

This specimen, which is in immature plumage, was collected by the late Lord Brabourne and presented by him to the British Museum.

Charadrius semipalmatus.

Charadrius semipalmatus Bonap. Journ. Acad. Nat. Sci. Philad. v. 1825, p. 98 : coast of New Jersey.

Ægialitis semipalmata Tacz. Orn. Pér. iii. 1886, p. 345 : Chorillos ; Paracas Bay.

No. 48. ♀. Trujillo, N.W. Peru, 18 Sept. 1912. "Iris brown, ring round the eye yellow ; feet yellow ; bill yellow, tip black" (*Brabourne*).

No. 180. ♂. Trujillo, N.W. Peru, 29 Dec. 1912. "Iris brown, ring round the eye pale yellow ; feet yellow ; bill black, base pale yellow" (*Brabourne*).

These specimens, which are moulting into winter plumage, were also collected by the late Lord Brabourne and presented by him to the British Museum.

Charadrius nivosus.

Ægialitis nivosus Cassin in Baird's B. N. Amer. 1858, p. 696 : Presidio (near San Francisco), California ; Tacz. Orn. Pér. iii. 1886, p. 346 : Chorillos.

No. 459. ♂. Lurin, N.W. Peru, 29 July, 1913. "Iris brown ; feet blue-grey ; bill black" (*Brabourne*).

This example, which is in full summer plumage, was collected by the late Lord Brabourne and presented by him to the British Museum.

Charadrius occidentalis.

Ægialitis occidentalis Cabanis, J. f. O. 1872, p. 158 : Tarapaca, N. Chile ; Sharpe, Cat. B. Brit. Mus. xxiv. 1896, p. 295 : Tarapaca.

Nos. 3156 ♂, 3157 ♀, 3182 ♂. Adult. Challapata, Bolivia, 3700 metres, Oct. 1901. "Tio Tio." The two males are in full summer plumage, but the female appears to be immature. This appears to be the first record of this bird from Bolivia.

Numenius hudsonicus.

Numenius hudsonicus Lath. Ind. Orn. ii. 1790, p. 712 : "Habitat in sinu Hudsonis" ; Tacz. Orn. Pér. iii. 1886, p. 380.

No. 5. ♀. Trujillo, N.W. Peru, 18 March, 1912. "Iris brown ; feet blue-grey ; bill horn-colour" (*Brabourne*).

No. 26. ♀. Trujillo, 18 March, 1912. "Bill flesh-colour at the base, tip black" (*Brabourne*).

These two individuals, which are in full adult plumage, were collected by the late Lord Brabourne and presented by him to the British Museum.

Micropalama himantopus.

Tringa himantopus Bonap. Ann. Lyc. N.Y. ii. 1826, p. 157 : Long Branch, New Jersey.

Micropalama himantopus Tacz. Orn. Pér. iii. 1886, p. 363 : Nauta ; Chorillos.

No. 21. ♀. Trujillo, N.W. Peru, 18 Aug. 1912. "Iris brown ; bill and feet greenish" (*Brabourne*).

Nos. 55 ♂, 56 ♀, 57 ♂. Trujillo, 8 Sept. 1912. "Iris brown; feet greenish yellow; bill black" (*Brabourne*).

These birds, which were collected and presented by the late Lord Brabourne to the British Museum, show remains of the breeding plumage.

Totanus flavipes.

Scolopax flavipes Gmel. Syst. Nat. i. 1789, p. 659: "Habitat auctumno in Noveboraco."

Totanus flavipes Tacz. Orn. Pér. iii. 1886, p. 367: Chorillos; Junin; Chamicuros.

No. 1247. ♀. Eten, Peru, 15 metres, 21 Sept. 1899. "Til-til." "Iris brown; feet yellow; bill black" (*P. O. Simons*).

This example is an adult bird in autumn plumage.

Nos. 28, 29. ♀. Trujillo, N.W. Peru, 13 March, 1912. "Iris brown; feet yellow; bill dark horn" (*Brabourne*).

No. 51. ♀. Trujillo, 8 Sept. 1912. "Bill dark greenish" (*Brabourne*).

Nos. 28 and 29 are in summer or breeding plumage, and No. 51 is in autumn or non-breeding dress. These specimens were collected by the late Lord Brabourne and presented by him to the British Museum.

Tringa solitaria.

Tringa solitaria Wilson, Amer. Orn. vii. 1813, p. 53, pl. 58. fig. 2: locality probably Pennsylvania.

Helodromas solitarius Sharpe, Cat. B. Brit. Mus. xxiv. 1896, p. 444.

No. 2834. ♀. Cochabamba, Bolivia, 2600 metres, 19 April, 1901. "Til-til." "Iris brown; feet green; bill black" (*P. O. Simons*).

This specimen is in full breeding plumage.

Actitis macularia.

Tringa macularia Linn. Syst. Nat. 12th ed. i. 1766, p. 249.

Actitis macularius Tacz. Orn. Pér. iii. 1886, p. 369.

Tringoides macularia Salvad. & Festa, Boll. Mus. Torino, xv. 1900, p. 44: Ecuador.

Nos. 342, 348, 356. ♀. Riobamba, Ecuador, 3000 metres, 3 Jan. 1899.

Nos. 1178, 1179. ♂ ♀. Eten, Peru, 10 metres, 7 Sept. 1899. "Til-til."

No. 1882. ♂. Rio Perene, Junin, Peru, 800 metres, 9 March, 1900.

These specimens are all in fully adult plumage.

Nos. 42, 46. ♂. Trujillo, N.W. Peru, 1 Sept. 1912. "Iris brown; feet greenish yellow; bill horn-colour" (*Brabourne*).

These two examples, 42 and 46, which are also in fully adult plumage, were collected by the late Lord Brabourne and presented by him to the British Museum.

Ereunetes pusillus.

Tringa pusilla Linn. Syst. Nat. 12th ed. i. 1766, p. 252: "Habitat in Domingo."

Ereunetes petrificatus Tacx. Orn. Pér. iii. 1886, p. 362: Paracas Bay.

Ereunetes pusillus Sharpe, Cat. B. Brit. Mus. xxiv. 1896, p. 514.

No. 22. ♀. Trujillo, N.W. Peru, 13 March, 1912. "Iris brown; bill and feet greenish" (*Brabourne*).

Nos. 50, 54. ♀ ♂. Trujillo, 3 Sept. 1912. "Iris brown; bill and feet dark green" (*Brabourne*).

Nos. 169, 170. ♀. Trujillo, 22 Dec. 1912. "Iris brown; bill and feet black" (*Brabourne*).

Nos. 50 and 54 are fully adult and are moulting from the summer to the winter plumage. Nos. 22, 169, and 170 are in adult winter plumage. These specimens were collected and presented to the British Museum by the late Lord Brabourne.

Calidris leucophæa.

Tringa leucophæa Pallas in Vroeg's Cat. 1764, p. 32: N. coast of Holland.

Calidris arenaria (Linn.); Tacx. Orn. Pér. iii. 1886, p. 353: Chorillos.

Nos. 1644, 1645. ♀. Callao, Peru, 12 Jan. 1900. These two examples are in winter plumage.

Nos. 23, 24, 25. ♀. Trujillo, N.W. Peru, 13 March, 1912. "Iris brown; bill and feet black" (*Brabourne*).

No. 121. ♀. Trujillo, 20 Oct. 1912. These individuals are in partial summer plumage.

No. 119. ♀. Trujillo, Oct. 1912.

No. 119, which is slightly immature, is in its first winter plumage. The late Lord Brabourne collected Nos. 23-25, 119 and 121, and presented them to the British Museum.

Pisobia minutilla.

Tringa minutilla Vieill. N. Dict. d'Hist. Nat. xxxiv. 1819, p. 466: Canada; Tacz. Orn. Pér. iii. 1886, p. 358: Chorillos; Tumbez; Santa Lucia.

Pisobia minutilla Brabourne & Chubb, B. S. Amer. i. 1912, p. 42, no. 407.

No. 1357. ♀. Eten, Peru, 15 metres, 10 Oct. 1899. "Iris grey; feet bronze green; bill black" (*P. O. Simons*). This example has still the remains of the summer plumage.

No. 181. ♂. Trujillo, N.W. Peru, 29 Dec. 1912. "Iris brown; feet dirty yellow; bill black" (*Brabourne*). This specimen is in winter plumage.

Heteropygia maculata.

Tringa maculata Vieillot, N. Dict. d'Hist. Nat. xxxiv. 1819, p. 465: "isles Antilles et dans les parties méridionales des Etats-Unis"; Tacz. Orn. Pér. iii. 1886, p. 356.

Heteropygia maculata Sharpe, Cat. B. Brit. Mus. xxiv. 1896, p. 562.

No. 910. Adult. Junin, Peru, 20 Feb. 1914. "Iris brown; feet yellow-green; bill black" (*Brabourne*).

No. 1006. ♀. Chorillos, Peru, 5 May, 1914. "Feet dirty yellow" (*Brabourne*).

No. 910 is in fully adult winter plumage; the female is also fully adult, but is in summer plumage. These specimens were collected by the late Lord Brabourne and presented by him to the British Museum.

Heteropygia bairdi.

Actodromas (Actodromas) bairdii Coues, Proc. Acad. Nat. Sci. Philad. 1861, p. 194: North America, east side of the Rocky Mountains.

Tringa bairdi Allen, Bull. Mus. Comp. Zoöl. Cambridge, Mass. iii. July 1876, p. 357: Bolivia; Tacz. Orn. Pér. iii. 1886, p. 359: Tambo Valley; Chorillos; Xeberos, E. Peru.

No. 2466. ♀. Chillellaya, Titicaca, Bolivia, 4000 metres, 26 Oct. 1900. "Pipe-pipe." "Iris brown; bill and feet black" (*P. O. Simons*).

Nos. 3150, 3155. ♂. Challapata, Bolivia, 3700 metres, 11, 12 Oct. 1901. "Tio-tio."

Nos. 2466 and 3155 are fully adult, and 3150 is an immature bird.

No. 529. ♂. Lurin, Peru, 30 Aug. 1913.

No. 529 still retains a portion of the summer plumage. This specimen was collected by the late Lord Brabourne and presented by him to the British Museum.

Gallinago andina.

Gallinago andina Tacz. P. Z. S. 1874, p. 56: Junin, Peru; id. Orn. Pér. iii. 1886, p. 375: Lake Junin; Cutervo; Tinta.

No. 1525. ♀. South of Huamachuco, Peru, 3500 metres, 29 Nov. 1899. "Kach-kach." "Iris dark brown; feet yellow; bill black" (*P. O. Simons*). This specimen is in fully adult plumage.

Gallinago jamesoni.

Xylocota jamesoni Bonap. Compt. Rend. xli. 1855, p. 660: Andes of Quito, Ecuador; Salvad. & Festa, Boll. Mus. Torino, xv. 1900, No. 368, p. 45: Ecuador.

No. 472. ♂. Paramos, Ecuador, 4500 metres, 23 Jan. 1899. "Sumbador." This specimen is in fully adult plumage.

a. Pull. Guallabamba, Ecuador, 4500 metres, 17 Feb. 1899. Simons states that this chick is the young of No. 472.

a. ♂. Adult. Pichincha, W. Ecuador, 14,000 ft., Feb.

1915. "Iris brown; feet reddish brown; bill brown, slightly dull yellow at base" (*W. Goodfellow*).

b. Nestling in down. Pichincha, 13,000 ft., Feb. 1915. "Iris brown; feet dirty yellow; bill brown, pale yellowish brown at base of lower mandible" (*W. Goodfellow*).

c. ♂. Adult. Pichincha, 14,000 ft., March 1915. "Bill pale reddish brown" (*W. Goodfellow*).

d. ♂. Juv. in partial down. Pichincha, March 1915. "Feet flesh-colour" (*W. Goodfellow*).

e. ♂. Imm. Corazon, W. Ecuador, 13,000 ft., Sept. 1914. "Feet dingy olive-yellow" (*W. Goodfellow*).

The five birds mentioned above were presented to the British Museum by Mr. E. J. Brook.

Family *ÆDICTENIDÆ*.

Burhinus superciliaris.

Ædictenus superciliaris Tschudi, Archiv für Naturg. 1841, i. p. 387: coast of Peru; Tacz. Orn. Pér. iii. 1886, p. 333.

No. 1013. ♂ imm. Tamborin, Rio Chica, Peru, 20 July, 1899. "Guaracaça."

No. 1016. ♂ imm. Amotape, Peru, 50 metres, 21 July, 1899. "Guerequeque." "Iris grey; feet white; bill green at the base, black at tip" (*P. O. Simons*).

No. 1197. ♂ imm. Eten, Peru, 10 metres, 13 Sept. 1899. "Waracace."

No. 1302. ♀ imm. Eten, Peru, 15 metres, 2 Oct. 1899. "Guaracaça."

No. 149. ♂ imm. Trujillo, N.W. Peru, 25 Nov. 1912. "Iris pale yellow; feet dirty yellow-green; bill above and tip of lower mandible dark horn-colour, base yellowish" (*Brabourne*).

The specimen No. 149 was collected and presented to the British Museum by the late Lord Brabourne.

Family *EURYPYGIDÆ*.

Eurypyga helias.

Ardea helias Pall. Neue Nörd. Beytr. ii. 1781, p. 48, tab. iii.: Surinam.

Eurypiga helias Allen, Bull. Amer. Mus. ii. 1889, p. 10: Reyes, Bolivia.

No. 2427. ♀. San Ernesto, Bolivia, 1000 metres, 25 Sept. 1900.

Nos. 2911, 2912. ♂. Charuplaya, Bolivia, 1300 metres, 28 May, 1901. "Biendita." "Iris reddish orange; bill black; feet orange" (*P. O. Simons*). These two birds are in fully adult plumage.

***Eurypyga meridionalis*.**

Eurypyga meridionalis Berl. & Stolz. P. Z. S. 1902, ii. p. 50: La Merced, Chanchamayo, Central Peru.

No. 2184. ♀. Orayci, Rio Linimbare, Peru, 1000 metres, 15 July, 1900. "Garza." "Iris red; bill black; feet orange" (*P. O. Simons*).

Family PSOPHIIDÆ.

***Psophia leucoptera*.**

Psophia leucoptera Spix, Av. Bras. ii. 1825, p. 67, pl. lxxxiv.: Rio Negro, N. Brazil; Allen, Bull. Amer. Mus. Nat. Hist. ii. 1889, p. 107: Lower Beni River.

Nos. 2429, 2430, 2431. ♂. San Ernesto, Bolivia, 1000 metres, 27 Sept. 1900. "Wasute." "Found in woods" (*P. O. Simons*).

Nos. 2429 and 2431 are in fully adult plumage, and No. 2430 is in immature dress.

Family CARIAMIDÆ.

***Chunga burmeisteri*.**

Dicholophus burmeisteri Hartl. P. Z. S. 1860, p. 335: Argentine Republic; Selater, P. Z. S. 1870, pl. xxxvi.; Sel. & Huds. Argent. Orn. ii. 1889, p. 62.

Head and foot only. Cruz del Eje, northern Argentina, 600 metres, Nov. 1901.

Family IBIDIDÆ.

***Theristicus branickii*.**

Theristicus branickii Berl. & Stolz. Ibis, 1894, p. 404: Peruvia alta—Iacus Junin, Maraynioc, Pariayacu; Salvad. Ibis, 1900, p. 515, pls. ix., x.

No. 2955. ♂. Lagonillas, Bolivia, 3800 metres, 8 July, 1901. "Kakingora." "Iris brown; feet red; bill green" (*P. O. Simons*). "In open grassy country. Contents of stomach, Coleoptera."

This bird appears to be in the adult plumage and very similar to that figured by Salvadori in 'The Ibis,' 1900, pl. ix., but darker on the top of the head, nape, and sides of the face. There is a similar example to Simon's bird in the British Museum which was collected at Cuzco at an altitude of 4000 metres by Otto Garlepp.

***Egatheus ridgwayi*.**

Falcinellus ridgwayi Allen, Bull. Mus. Comp. Zoöl. Cambridge, Mass. iii. 1876, p. 355: Moho, Conima, and Vilquechico, Bolivia.

Plegadis ridgwayi Sharpe, Cat. B. Brit. Mus. xxvi. 1898, p. 37.

Egatheus ridgwayi Brabourne & Chubb, B. S. Amer. i. 1912, p. 48, no. 454.

No. 3111. ♂ imm. El Cabrado, Bolivia, 4300 metres, 20 Sept. 1901. "By alkali lake, eating mud and moss" (*P. O. Simons*).

FAMILY ARDEIDÆ.

***Ardea cocoi*.**

Ardea cocoi Linn. Syst. Nat. 12th ed. i. 1766, p. 237: "Habitat in Cayana"; Tacz. Orn. Pér. iii. 1886, p. 390: Huallaga; Pebas, E. Peru.

No. 1030. ♂. Omotape, Rio Piura, Peru, 50 metres, 23 July, 1899. "Garza." "Iris yellow; feet black; bill yellow" (*P. O. Simons*).

This specimen is in immature plumage.

***Casmerodius egretta*.**

Ardea egretta Gmel. Syst. Nat. i. 1789, p. 629; Cayenne.

Herodias egretta Sharpe, Cat. B. Brit. Mus. xxvi. 1898, p. 95.

Casmerodius egretta Chubb, Birds British Guiana, i. 1916, p. 162.

No. 387. ♀. Colta, Riobamba, Ecuador, 3100 metres,
9 Jan. 1899. "Garza blanca."

This example is an adult female in non-breeding plumage.

***Egretta thula*.**

Ardea thula Molina, Sagg. Stor. Nat. Chil. 1782, p. 323 :
Chile.

Ardea candidissima Gmel.; Tacz. Orn. Pér. iii. 1886,
p. 393 : Tumbes; Ucayali.

Egretta thula Brabourne & Chubb, B. S. Amer. i. 1912,
p. 49, no. 464.

Nos. 1383, 1384, 1385. ♀. Eten, Peru, 15 metres,
14 Oct. 1899. "Garza blanca." "Iris yellow; feet
blackish green; bill black; skin round the eyes yellow"
(*P. O. Simons*).

These three birds are fully adult and in non-breeding
plumage.

***Nycticorax nævius*.**

Ardea nævia Bodd. Tabl. Pl. Enl. 1783, p. 56.

Nycticorax gardeni apud Tacz. Orn. Pér. iii. 1886, p. 407 :
Lake Junin; Tumbes; Ucayali.

Nycticorax nævius Brabourne & Chubb, B. S. Amer. i.
1912, p. 50, no. 469.

No. 1396. ♂. Talaon, Cajamarca, Peru, 100 metres,
30 Oct. 1899. "Buego." "Iris yellow; feet yellow;
bill black above" (*P. O. Simons*).

This example is in immature plumage.

***Ixobrychus erythromelas*.**

Ardea erythromelas Vieill. N. Dict. d'Hist. Nat. xiv.
1817, p. 422 : Paraguay.

Ardetta involucris (nec Vieill.), Tacz. Orn. Pér. iii. 1886,
p. 399 : Pacasmayo.

Ixobrychus erythromelas Brabourne & Chubb, B. S. Amer.
i. 1912, p. 52, no. 485.

No. 145. ♀. Trujillo, N.W. Peru, 23 Nov. 1912.
"Iris pale yellow; feet apple-green; bill horn-colour above,
greenish below, and cere yellow" (*Brabourne*).

This example, which is in fully adult plumage, was collected by the late Lord Brabourne and presented by him to the British Museum.

Butorides striata.

Ardea striata Linn. Syst. Nat. 12th ed. i. 1766, p. 238 : Surinam.

Butorides cyanurus (Vieill.) ; Tacz. Orn. Pér. iii. 1886, p. 397 : Tumbez ; Pacasmayo ; Ucayali.

Butorides striata Sharpe, Cat. B. Brit. Mus. xxvi. 1898, p. 175.

No. 1192. ♀. Eten, Peru, 10 metres, 9 Sept. 1899. "Garza Pescada." "Iris yellow; feet yellowish green, soles yellow; bill black above" (*P. O. Simons*).

No. 1322. ♀. Reque, Lambeyeque, Peru, 35 metres, 5 Oct. 1899.

No. 1192 is slightly immature and 1322 is fully adult.

No. 66. ♂. Trujillo, N.W. Peru, 15 Sept. 1912. "Iris yellow; feet yellow; bill black, base and cere yellow" (*Brabourne*).

Specimen No. 66 was collected by the late Lord Brabourne and presented by him to the British Museum.

Tigrisoma salmoni.

Tigrisoma salmoni Selater & Salvin, P. Z. S. 1875, p. 38 : Cauca River, Colombia ; Tacz. Orn. Pér. iii. 1886, p. 402 : Huambo, Tambillo, Callacate ; Sharpe, Cat. B. Brit. Mus. xxvi. 1898, p. 197.

No. 2903. ♀. Charuplaya, Bolivia, 1350 metres, 22 May, 1901. "Garza." "Iris yellowish green; feet black; bill green" (*P. O. Simons*).

No. 2930. ♂. Charuplaya, Bolivia, 1350 metres, 20 June, 1901. "Stomach contained fish" (*P. O. Simons*).

This species does not appear to have been previously recorded from Bolivia. Dr. Allen noted (Bull. Amer. Mus. ii. p. 110) a specimen of *T. brasiliense* from the Lower Beni River, and Dr. Lönnberg described a new species from the Bolivian Chaco, under the title of *Heterocnus bolivianus* (*cfr.* Ibis, 1903, p. 462), with the description of which I have

compared the two specimens collected by Simons. They do not agree, however, either in colour or measurements, and, after having compared them with the type of *T. salmoni* and other specimens of that species in the British Museum, I do not see any characters by which to separate them. I prefer, therefore, to regard them as the same species. I notice that Lönnberg places his species in the genus *Heterocnus*, though one of the characters he mentions shows that it does not belong to that genus. It may be mentioned that when Swainson introduced the genus *Tigrisoma* (Zool. Journ. iii. 1828, p. 362), he selected as the type "*Ardea tigrina* Lath." 1790 = *A. lineata* Bodd. 1783, and one of its characters is, that it has the throat and chin narrowly feathered. Sharpe introduced the genus *Heterocnus* for *Tigrisoma cabanisi* Heine, which has the chin, throat, and some distance down the fore-neck quite bare of feathers; but Sharpe, unfortunately, in his diagnosis described these parts as feathered. These characters are also transposed in the key to the genera (Catalogue of Birds, xxvi. p. 59).

Family PHÆNICOPTERIDÆ.

Phenicopterus chilensis.

Phenicopterus chilensis Molina, Sagg. Stor. Nat. Chil. 1776, p. 242.

*Phenicopterus ignipalliatu*s D'Orb. & I. Geoffr.; Tac. Orn. Pér. iii. 1886, p. 442 : Junin; Tumbez.

No. 2104. ♂. Caylloma, Peru, 14 June, 1900. "Iris cream-colour; feet red; bill, pink at base, tip black" (*P. O. Simons*).

This specimen is in fully adult plumage.

Family ANATIDÆ.

Cairina moschata.

Anas moschata Linn. Syst. Nat. 10th ed. i. 1758, p. 124 : Brazil.

Cairina moschata Allen, Bull. Amer. Mus. ii. 1890, p. 110 : Lower Beni River.

No. 2927. ♀. Charuplaya, Bolivia, 1400 metres, 15 June,

1901. "Pata." "Iris brown; bill and feet black" (*P. O. Simons*).

This bird is in immature plumage.

***Chloëphaga melanoptera*.**

Anser melanopterus Eyton, Monogr. Anat. 1838, p. 93 : "obtained from the lake of Titicaca, Chile."

Bernicla melanoptera Tacz. Orn. Pér. iii. 1886, p. 467 : Lake Junin.

Chloëphaga melanoptera Salvad. Cat. B. Brit. Mus. xxvii. 1895, p. 129.

No. 1592. ♂. North of Marca, Peru, 4100 metres, 21 Dec. 1899. "Ganza." "Eye black; feet red; bill pink" (*P. O. Simons*).

This individual is in fully adult plumage.

***Anas cristata*.**

Anas cristata Gmel. Syst. Nat. i. 1789, p. 540 : "Habitat in Statenland"; Tacz. Orn. Pér. iii. 1886, p. 473: Lake Junin.

No. 2242. ♀. Aricoma Lake, Peru, 4550 metres, 29 July, 1900. "Pata cancana." "Iris salmon; bill and feet black" (*P. O. Simons*).

This specimen is in fully adult plumage.

***Nettion andium*.**

Querquedula andium Selater & Salvin, Nomencl. Av. Neotrop. 1873, pp. 129, 162: between Riobamba and Mocha.

Nettion andium Brabourne & Chubb, B. S. Amer. i. 1912, p. 56, no. 518.

Nos. 288 ♂, 292 ♀. Sinche, Guaranda, Ecuador, 4000 metres, 23 Dec. 1899. "Pata."

This specimen is in fully adult plumage.

***Querquedula discors*.**

Anas discors Linn. Syst. Nat. 12th ed. i. 1766, p. 205 : "Habitat in America septentrionali."

Querquedula discors Salvad. & Festa, Bol. Mus. Torino, xv. 1900, No. 368, p. 50 : Laguna di Kingora, Sigsig, Ecuador.

Nos. 377 ♀, 380 ♂. Colta, Riobamba, Ecuador, 3100 metres, 9 Jan. 1899.

Both of these specimens are in fully adult plumage.

Nyroca nationi.

Fuligula nationi Selater & Salvin, P. Z. S. 1877, p. 522 : vicinity of Lima ; Tacz. Orn. Pér. iii. 1886, p. 484 : Lima.

Nyroca nationi Salvad. Cat. B. Brit. Mus. xxvii. 1895, p. 352.

No. 1365. ♂. Eten, Peru, 14 metres, 11 Oct. 1899. "Pata." This specimen is in fully adult plumage.

Nomonyx dominicus.

Anas dominica Linn. Syst. Nat. 12th ed. i. 1766, p. 201 : "Habitat in America meridionali."

Nomonyx dominicus Salvad. Cat. B. Brit. Mus. xxvii. 1895, p. 438 ; id. & Festa, Boll. Mus. Torino, xv. 1900, No. 368, p. 50 : "Foreste del Rio Peripa, Ecuador."

No. 1354. ♀. Eten, N.W. Peru, 15 metres, 11 Oct. 1899. "Pata." "Iris brown ; bill bronze ; feet black" (*P. O. Simons*).

This example, which is fully adult, is in full moult.

Oxyura æquatorialis.

Erismatura æquatorialis Salvad. Cat. B. Brit. Mus. xxvii. 1895, p. 450 : Antisana and Sical, E. Ecuador ; id. & Festa, Boll. Mus. Torino, xv. 1900, No. 368, p. 50 : Lago dei Paramos.

Oxyura æquatorialis Brabourne & Chubb, B. S. Amer. i. 1912, p. 58, no. 538.

No. 387. ♂. Colta, Riobamba, Ecuador, 3640 metres, 9 Jan. 1899. "Pata."

This specimen is in fully adult plumage.

Merganetta turneri.

Merganetta turneri Selater & Salvin, P. Z. S. 1869, p. 600 : Tinta, S. Peru ; iid. Exot. Orn. 1869, p. 199, pl. 100 ; Tacz. Orn. Pér. iii. 1886, p. 488 : Tinta.

Nos. 2090, 2092 ♀, 2094 ♂. Sumbay, Rio Vitor, Peru, 4000 metres, 7 June, 1900. "Pato." "Iris brown ; feet blackish red ; bill red" (*P. O. Simons*).

I have compared the male specimen No. 2094, which is fully adult, with the type in the British Museum, and find it

to be very similar but darker on the breast, being deep black, whereas the type is more or less smoke-brown on the breast, which probably means that the type is in somewhat immature plumage. Of the two females, No. 2090 is almost identical in colour of plumage with the female of *M. turneri*, but slightly smaller in wing-measurement ; while No. 2092 is darker and more chestnut on the under surface with a good deal of white intermixed. Both of these females have on the lower flanks a few concealed white feathers with pale brown cross-bars.

***Merganetta garleppi*.**

Merganetta garleppi Berl. Orn. Monatsb. ii. 1894, p. 110 : Cocotal, Bolivia ; Salvad. Cat. B. Brit. Mus. xxvii. 1895, p. 450.

No. 2941. ♂. Rio Blanco, Bolivia, 1300 metres, 25 June, 1901. "In rapids." "Iris white ; bill and feet red" (*P. O. Simons*).

This specimen, which is in the fully adult plumage, is similar to the single specimen in the British Museum which was compared with the type by Count Salvadori when he wrote vol. xxvii. of the Catalogue of Birds. Simons' bird is, however, darker on the under surface, the dark pattern of the feathers being more extended and deeper in colour.

***Merganetta colombiana*.**

Merganetta colombiana Des Murs, Rev. Zool. 1845, p. 179 : Colombia.

Merganetta columbiana Salvad. Cat. B. Brit. Mus. xxvii. 1895, p. 462 ; id. & Festa, Boll. Mus. Torino, xv. 1900, No. 368, p. 51 : Ecuador.

a, b. ♂ & ♀. Papallacta Lake, E. Ecuador 12,000 ft., May 1914.

♂. "Iris brown ; feet dingy yellow ; bill orange-chrome, black down the ridge of the upper bill" (*W. Goodfellow*).

♀. "Iris brown ; feet black ; bill dingy orange-yellow, black down ridge of upper mandible" (*W. Goodfellow*).

Both specimens are in fully adult plumage. These examples were presented to the British Museum by Mr. E. J. Brook.

Family PHALACROCORACIDÆ.

Phalacrocorax criniger.

Phalacrocorax criniger King, Zool. Journ. iv. 1828, p. 103: Straits of Magellan; Brabourne & Chubb, B. S. Amer. i. 1912, p. 59, no. 548.

Phalacrocorax gaimardi (Garnot); Tacz. Orn. Pér. iii. 1886, p. 431: San Lorenzo.

No. 1636. ♀. San Lorenzo Island, Peru, 16 Jan. 1900. "Patilla."

This specimen is in fully adult plumage.

Phalacrocorax vigua.

Hydrocorax vigua Vieill. N. Dict. d'Hist. Nat. viii. 1817, p. 90: Paraguay.

Phalacrocorax brasiliannus (Gmel.) ; Tacz. Orn. Pér. iii. 1886, p. 429: Lake Junin; Chorillos; Cochiboya; Ucayali; Tungusaca; Paracas Bay.

Phalacrocorax vigua Ogilvie-Grant, Cat. B. Brit. Mus. xxvi. 1898, p. 378.

No. 1642. ♂. San Lorenzo Island, Peru, 18 Jan. 1900. "Patillo."

This example is in the fully adult plumage.

Family CATHARTIDÆ.

Vultur gryphus.

Vultur gryphus Linn. Syst. Nat. 10th ed. i. 1758, p. 86: Chili.

Sarcorhamphus gryphus Salvad. & Festa, Boll. Mus. Torino, xv. 1900, No. 368, p. 25: Cañar, Ecuador.

No. 281. ♂. Sinche, Guaranda, Ecuador, 400 metres, 21 Dec. 1898. "Buitre." "Perched on rock" (*P. O. Simons*).

This specimen is in the fully adult plumage.

Cathartes aura.

Vultur aura Linn. Syst. Nat. 10th ed. i. 1758, p. 86: "Habitat in America calidiore."

Cathartes aura Sclater & Salvin, P. Z. S. 1879, p. 639: Provinces of Moxos and Chiquitos, Bolivia.

No. 2865. ♀. Choro, Bolivia, 3700 metres, 6 May, 1901. "Swinto." "Iris brown; feet flesh-colour; bill white" (*P. O. Simons*).

This specimen is in fully adult plumage.

Family FALCONIDÆ.

Ibycter americanus.

Falco americanus Bodd. Tabl. Pl. Enl. 1783, p. 25 : Cayenne.

Ibycter americanus Tacz. Orn. Pér. i. 1884, p. 103 : Monterico, Upper Ucayali, Chayavetas.

No. 1946. ♂. Rio Perene, Junin, Peru, 800 metres, 20 March, 1900. "Iris red; feet red; bill yellow." "Found in thick wood and high trees" (*P. O. Simons*).

This bird is in fully adult plumage.

Ibycter megalopterus.

Aquila megalopterus Meyen, Nov. Act. Cæs. xvi. Suppl. i. 1834, p. 64, pl. vii. : Chile.

Milvago megalopterus Tacz. Orn. Pér. i. 1884, p. 101 : Junin, Maraynioc, Cutervo.

Ibycter megalopterus Brabourne & Chubb, B. S. Amer. i. 1912, p. 63, no. 576.

No. 1532. ♂. Coreuges, Peru, 3500 metres, 5 Dec. 1899. "Currekinge." "Iris chocolate; feet yellow; bill blue at base, ivory at tip" (*P. O. Simons*).

This bird is fully adult.

No. 1848. ♀. Galera, Junin, Peru, 4800 metres, 26 Feb. 1900. "Guarnay." "Iris black; feet grey; bill black" (*P. O. Simons*).

Specimen no. 1848 has both the upper and under surface pale coffee-brown with dark shaft-lines to the feathers and an indication of blackish cross-bars on the abdomen. Upper tail-coverts and base of tail isabelline buff.

Milvago chimango.

Polyborus chimango Vieill. N. Dict. d'Hist. Nat. v. 1816, p. 260 : Paraguay.

Milvago chimango Scl. & Huds. Argent. Orn. ii. 1889, p. 74.

No. 3256. ♀. Mendoza, Argentina, 850 metres, 17 Nov. 1901. "Chimango." "Stomach contained larva of grubs" (*P. O. Simons*).

This example, which is in fully adult plumage, is similar to others in the British Museum from Argentina.

***Circus cinereus*.**

Circus cinereus Vieill. N. Diet. d'Hist. Nat. iv. 1816, p. 454: Paraguay; Sci. & Salv. P. Z. S. 1879, p. 636: Bolivia; Tacz. Orn. Pér. i. 1884, p. 171: Junin, Cutervo.

No. 2102. Sumbay, Peru, 4000 metres, 9 June, 1900. "Senica."

No. 2840. Cochabamba, Bolivia, 2600 metres, 20 April, 1901.

Both of these specimens are in immature plumage.

***Micrastur ruficollis*.**

Sparverius ruficollis Vieill. N. Diet. d'Hist. Nat. x. 1817, p. 322: l'Amérique méridionale=Rio, Brazil *fide* Berlepsch, Nov. Zool. xv. p. 290.

No. 2934. ♂ juv. Charuplaya, Bolivia, 1350 metres, 22 June, 1901. "Alcon." "Found in coffee bushes. Stomach contained small birds" (*P. O. Simons*).

This young bird has the upper surface dark brown with smoke-coloured markings on the back and wings. The under parts isabelline buff with a few dark cross-bands on the fore-neck. Throat paler and inclining to white. There are two white feathers with narrow dark bars on the middle of the abdomen.

***Geranospizias cærulescens*.**

Sparverius cærulescens Vieill. N. Diet. d'Hist. Nat. x. 1817, p. 318: Guiana—*fide* Brabourne & Chubb, B. S. Amer. i. p. 64.

Geranospiza cærulescens Tacz. Orn. Pér. i. 1884, p. 168.

Nos. 1150, 1151. ♀. Marropou, Peru, 140 metres, 24 Aug. 1899. "Gavalon." "In algaroba wood." "Iris red; feet salmon-colour; bill black above, blue below" (*P. O. Simons*).

Parabuteo unicinctus.

Falco unicinctus Temm. Pl. Col. i. 1824, pl. 13 :
 "Brésil."

Urubitinga unicincta Tacz. Orn. Pér. i. 1884, p. 106 :
 Cutervo : Lönnb. Ibis, 1903, p. 465 : Bolivian Chaco.

No. 185. ♀. Trujillo, N.W. Peru, 1 Jan. 1913.
 "Iris brown; feet yellow; bill plumbeous, cere yellow"
 (*Brabourne*).

No. 1379. ♀. Eten, Peru, 15 metres, 13 Oct. 1899.
 "Gavalon."

No. 2937. ♀. Charuplaya, Bolivia, 1350 metres, 22 June,
 1901. "Aquilucho."

Nos. 1379 and 2937 are both in fully adult plumage.
 No. 185, which is in immature plumage, was collected
 and presented to the British Museum by the late Lord
 Brabourne.

Buteo melanoleucus.

Spizaëtus melanoleucus Vieill. N. Dict. d'Hist. Nat. xxxii.
 1819, p. 57 : Paraguay.

Geranæus melanoleucus Salvad. & Festa, Boll. Mus.
 Torino, xv. 1900, No. 368, p. 30 : Ecuador.

No. 282. Sinche, Guaranda, Ecuador, 4000 metres,
 22 Dec. 1898. "Gavalon."

This example is in the fully adult plumage.

Buteo erythronotus.

Haliaëtus erythronotus King, Zool. Journ. iii. 1828, p. 424 :
 Straits of Magellan.

Buteo erythronotus Tacz. Orn. Pér. i. 1884, p. 115 :
 Junin, Pacasmayo, Guadalupe, Tumbes, Paucal, Cutervo,
 Paucartambo; Sci. & Salv. P. Z. S. 1879, p. 637 : Bolivia.

Nos. 1254 ♀, 1255 ♂. Eten, N.W. Peru, 15 metres,
 21 Sept. 1899. "Gavalon." "Iris hazel; feet yellow;
 bill blue-bronze" (*P. O. Simons*).

This bird is fully adult with the upper back rufous; tail
 white narrowly barred with brown and with a broad blackish

subterminal band. The under surface almost entirely white. The male is also adult and has the upper back hoary grey with very slight remains of rufous; axillaries blackish barred with white.

No. 1004. ♀ imm. Sullana, Peru, 70 metres, 19 July, 1899. "Iris hazel; feet yellow; bill black" (P. O. Simons).

No. 2839. ♀ juv. Cochabamba, Bolivia, 2600 metres, 19 April, 1901. "Cui."

This specimen is dark brown on the upper surface, with ferruginous edgings, blotchings, bars, and mottlings to the feathers. It was in the act of moulting its tail-feathers from the brown to the grey phase. The under surface is almost entirely ferruginous intermixed with white, darker and inclining to chestnut on the abdomen and sides of the body. There is a dark moustachial streak in this stage of the plumage which disappears in the adult.

No. 2997. ♀. Chaquecamte, Bolivia, 4000 metres, 30 July, 1901. "Alcon."

This example, which is fully adult, is similar to No. 1254, but differs in having the axillaries and sides of the body partially rufous.

No. 3003. ♀ adult. Oruro, Bolivia, 3700 metres, 19 Aug. 1901. "Alcon."

This bird is also fully adult and differs only from No. 1254 in having the abdomen, sides of the body, and thighs barred with dark brown.

No. 3165. ♀ adult. Challapata, Bolivia, 3750 metres, 14 Oct. 1901. "Alcon."

This specimen is in the fully adult plumage and similar to No. 1254, but has the abdomen and thighs narrowly barred with brown.

Rupornis pucherani.

Astur maguirostris (nec Gmel.) d'Orb. Voy. Amér. Mérid. 1835, p. 91: Andes of Bolivia and Peru.

Asturina pucherani J. & E. Verreaux, Rev. et Mag. de

Zool. July 1855, p. 350: Paraguay; Sci. & Salv. P. Z. S. 1879, p. 636: Bolivia.

Rupornis pucherani Allen, Bull Amer. Mus. Nat. Hist. ii. March 1889, p. 104: Mapiri, Bolivia.

No. 2182. ♀. Oroya, Puna, S. Peru, 1000 metres, 14 July, 1900. "Gavalon." "Iris yellow; feet yellow; bill bluish" (*P. O. Simons*).

No. 2202. ♀. Rio Linimbare, S.E. Peru, 1000 metres, 17 July, 1900.

These two specimens are in the fully adult plumage.

Leucopternis albicollis.

Falco albicollis Lath. Ind. Orn. i. 1790, p. 36: Cayenne.

Leucopternis albicollis Gurney, Ibis, 1876, p. 473: Quito; Salvad. & Festa, Boll. Mus. Torino, xv. 1900, No. 368, p. 31: Gualaquiza.

No. 1909. ♂. Rio Perene, Junin, Peru, 800 metres, 14 March, 1900. "Gavalon." "Iris brown; feet yellow; bill bluish black. Found in dense forest" (*P. O. Simons*).

This species does not appear to have been previously recorded from Peru. It is not surprising, however, to have found it on the Rio Perene, which is on the eastern side of the Andes, as Gurney mentions (*Ibis*, 1876, p. 473) one from Quito, and Dr. Festa obtained one from Gualaquiza, Ecuador (*vide* Salvad. & Festa, Boll. Mus. Torino, xv. No. 368, p. 31). There are, moreover, two specimens in the British Museum, collected by the late Clarence Buckley at Sarayacu, eastern Ecuador, and are also identical with other specimens in the National Collection from Cayenne, which is the type-locality, and British Guiana. I have compared this bird with *L. occidentalis* Salvin, from which it differs entirely.

Lophotriorchis isidori.

Falco isidori Des Murs, Rev. Zool. 1845, p. 177: Santa Fé de Bogota.

Aquila isidori Des Murs, Icon. Orn. 1845, pl. i.

Spizaëteus isidori Bonap. Consp. Av. i. 1850, p. 29: Bogota; Sci. & Salv. P.Z.S. 1879, p. 450: Cauca Valley, Colombia.

Lophotriorchis isidori Sharpe, Cat. B. Brit. Mus. i. 1874, p. 256: Bogota.

No. 2947. ♂ imm. Charuplaya, Bolivia, 1350 metres, 1 July, 1901. "Aquilla." "Came into the yard for chicken" (*P. O. Simons*).

a. ♂ adult. Baesa, Eastern Ecuador, 6000 ft., April 1914. "Iris brown; feet yellow; bill slate-colour" (*W. Goodfellow*).

b. ♂ juv. Baesa, May 1914, 6000 ft. "Iris brown; feet yellow; bill slate-colour" (*W. Goodfellow*).

The adult male from Baesa is in the fully adult black plumage, which includes the sides of the face, back, wings, and tip of tail on the upper surface, and the throat, axillaries, flanks and thighs on the under parts; breast, abdomen, under tail-coverts, and under wing-coverts dark chestnut with black shaft-lines; basal portion of tail mottled with dark grey both above and below, apical portion below blackish brown.

The young male from Baesa has still got downy tips to the tail-feathers, although it shows a further advance than the others in regard to the greater development of the feathers and their darker colour on the sides of the body, thighs, axillaries, and under wing-coverts. Wing 515 mm., tail 295.

Another young bird, unsexed, in very similar plumage, was collected at Yauaycu, Ecuador, by the late Clarence Buckley and presented to the British Museum by Messrs. Salvin & Godman, but differs in being darker on the top of the head, hind-neck, back, upper tail-coverts, sides of face, and sides of neck. The sides of the body and thighs are also darker, the axillaries and under wing-coverts more fulvous, and the shaft-lines more pronounced.

The immature male, No. 2947 from Bolivia, has lost a great deal of the brown plumage on the upper surface,

which is replaced by black. The feathers on the head and hind-neck are smoke-brown with black centres, narrowly fringed with white at the tips, and white at the base; a patch of buffy white on the sides of the crown; ear-coverts isabelline with dark shaft-lines to the feathers; sides of neck fulvous brown with broad black centres to the feathers, some of which are fringed with white; chin and throat white, with a patch of black on each side of the latter: fore-neck and breast white, with dark fulvous centres and black shaft-lines to the feathers on the former, some of the feathers on the sides of the body entirely black; vent and under tail-coverts cinnamon-rufous, the feathers fringed with white at the tips; axillaries and under wing-coverts cream-white, with fulvous and black shaft-lines along the middle of the feathers; under surface of quills and tail similar to those already described.

The specimen from Bogota, which is in the National Collection (*vide* Sharpe, Cat. B. i. p. 256), is almost in the adult plumage, but shows the remains of immaturity by the few whitish feathers on the throat, breast, abdomen, and axillaries.

Another bird, a male, collected in the Cauca Valley, Colombia, by T. K. Salmon (*cf.* Selater & Salvin, P. Z. S. 1879, p. 450), is also in the fully adult plumage, but some of the feathers on the throat are fringed laterally with chestnut. Wing 460 mm., tail 265.

There is also a young male from Venezuela evidently in its first plumage, as it still has the remains of down at the tips of many of the feathers both on the upper and under surface. The crown of the head, hind-neck, sides of face and sides of neck cream-white with dark shaft-lines to the feathers and pale buff mottlings on the top of the head and sides of the neck; crest-feathers black, or mottled with blackish smoke-brown with white bases and fringed with white at the tips; back pale brown with white fringes to the feathers becoming darker on the upper tail-coverts, where the feathers have a blotch of white on both webs; lesser

upper wing-coverts black margined with white, becoming brown and more broadly margined with white on the median and greater series, scapulars and inner secondary quills; bastard-wing and primary-coverts black tipped with white; flight-quills blackish tipped with white, hoary grey on the outer webs, and mottled with brown on the inner ones, which have irregular black bars; on the third outer primary the outer web is barred, and beyond there the quills are paler and more hoary-grey and the blackish bars more distinct; the eight outer secondary quills are again darker, but the pattern is much the same and the tips more broadly margined with white. The tail is grey, mottled with brown and white, marked with black at the base and two separate bands on the apical portion, the subterminal one being much the wider, and the tips of the feathers broadly margined with white to which down is still adhering. The chin, throat, breast, abdomen, sides of body, thighs and under tail-coverts, axillaries and under wing-coverts pale fulvous with dark shaft-lines to some of the feathers on the breast, axillaries under wing-coverts, sides of body, and outer aspect of the thighs; under surface of flight-quills white mottled and blotched with grey on the basal portion, towards the tips silvery grey barred with blackish brown and blackish on the apical portion, inner secondaries also silvery grey mottled and banded with dark brown; lower aspect of tail silvery grey, mottled with white, and banded with blackish brown.

This bird was collected in the neighbourhood of Merida, Venezuela, by S. Bričeno, and presented to the British Museum by Mr. L. V. Dalton.

A second young bird from Merida is a female, and is rather more advanced than the two specimens already mentioned, which may be seen by the darker and more developed feathers on the sides of the body, thighs, axillaries, and under wing-coverts.

Another male bird, also from Venezuela, collected 18 October, 1907, is in the fully adult plumage with the throat entirely deep black. Wing 485 mm., tail 292.

Harpagus bidentatus.

Falco bidentatus Lath. Ind. Orn. i. 1780, p. 38: "Cayana."

Harpagus bidentatus Hartert, Nov. Zool. v. 1898, p. 502: Chimbo, Ecuador, 1000 ft.

No. 492. ♂ imm. Mirador, Baños, Ecuador, 1800 metres, 1 Feb. 1890. "Gavalon."

There are twenty-eight skins of this species in the British Museum from various localities. Eight from British Guiana and Trinidad, five of which are immature, have the wing-measurements 195 to 210 mm. Three from Venezuela and one from Bogota measure 204 to 229 mm. The bird from Bogota is rather paler slate-grey above than any of the others in the series; the under surface deeper chestnut which extends up the throat on each side of the central grey streak; the lesser under wing-coverts and axillaries are also chestnut, but paler than the under surface. Four examples from eastern Ecuador have a wing-measurement 210 to 217 mm.; two of these are immature and appear to go through a different phase of plumage on the under surface from any of the other young birds, being orange-buff instead of cream-white. From eastern Peru and the Amazon Valley there are six birds which are all in the fully adult plumage, and the wings measure 196 to 227 mm. Six from Bahia and Rio de Janeiro, three being in immature plumage, have the wing-measurement 189 to 225 mm.; from the two last-named localities the birds are somewhat darker above than those from Ecuador.

Gampsonyx swainsonii swainsonii.

I have compared the three specimens collected by Simons and one collected at Guayaquil by Capt. Kellett and Lieut. Wood with seventeen others in the British Museum from Bahia, which is the type-locality of *G. s. swainsonii*, Matto Grosso, eastern Peru, Venezuela, Trinidad, British Guiana, and Obidos on the Lower Amazon. They are very similar in the colour of the plumage, except that No. 1096 is pale fulvous on the breast, abdomen, and under tail-coverts, which is unlike any of the other specimens in the

series examined. These four birds have the range of wing-measurements from 173 to 177 mm. and the tail 102 to 105 mm., and the seventeen specimens from other localities have the range of wing-measurements from 145 to 164 mm. and the tail 84 to 96 mm. I am of opinion, therefore, that the most western birds should be separated subspecifically.

The following synonymy is referable to *Gampsonyx swainsonii* Vigors:—

Gampsonyx swainsonii Vigors, Zool. Journ. ii. April 1825, p. 69: Interior of Bahia.

Nertus rufifrons Boie, Isis, 1828, p. 314: ex Wied.

Falco rufifrons Wied, Beitr. Orn. Bras. iii. 1831, p. 123: River Mucuri, S.E. Brazil.

Elanus torquatus Less. Traité d'Orn. 1831, p. 72: Brazil.

Gampsonyx swainsoni Sel. & Salv. P. Z. S. 1867, p. 979: Pebas, E. Peru; Tacz. Orn. Pér. i. 1884, p. 140, part: Pebas.

Gampsonyx swainsonii magnus.

Gampsonyx swainsoni (nec Vig.) Tacz. Orn. Pér. i. 1884, p. 140, part: Tumbes.

Gampsonyx swainsonii magnus Chubb, Bull. Brit. Orn. Club, xxxix. 1918, p. 21.

Adult male. Similar to *G. s. swainsonii*, and differing only in the larger wing and tail measurements. "Iris yellow; feet yellow; bill black" (*P. O. Simons*). Total length 245 mm., culmen from edge of cere 14, wing 177, tail 104, tarsus 32, middle toe and claw 32.

Adult female. Similar to the adult male. Wing 176 mm., tail 105.

Habitat. Western Peru and western Ecuador.

The type, which is in the British Museum, was collected by P. O. Simons at Amotape, Peru, on 22 July, 1899.

No. 43. ♀ adult. Puna Island, Ecuador, 5 Nov. 1898.

No. 1027. ♂ adult. Amotape, Peru, 50 metres, 22 July, 1899.

No. 1096. ♂ imm. Piura, Peru, 50 metres, 5 Aug. 1899.

Ictinia plumbea.

Falco plumbea Gmel. Syst. Nat. i. 1788, p. 283: Cayenne.

Ictinia plumbea Sel. & Salv. P. Z. S. 1879, p. 638: Prov. Yungas, Chiquitos, and Moxos, Bolivia; Allen, Bull. Amer. Mus. ii. 1889, p. 105: Lower Beni River and Mapiri, Bolivia.

No. 1245. ♀. Bellavista, Bolivia, 1400 metres, 10 Oct. 1900. "Alcon." "Iris red; feet orange; bill black" (*P. O. Simons*).

This specimen is in the fully adult plumage and identical with others in the British Museum from various localities in South and Central America. It may be mentioned, however, that some individuals are paler grey than others, but these are not restricted to any particular geographical area.

Falco fusco-cærulescens.

Falco fusco-cærulescens Vieill. N. Dict. d'Hist. Nat. xi. 1817, p. 90: Paraguay.

Hypotriorchis femoralis Sel. & Salv. P. Z. S. 1879, p. 638: Bolivia; Tac. Orn. Pér. i. 1884, p. 151: Paucartambo and Tumbez.

No. 379. ♂. Colta, Riobamba, Ecuador, 3100 metres, 1 Jan. 1899. "Gavalon."

No. 1695. ♀. Chosica, Peru, 850 metres, 3 Oct. 1900. "Alcon."

No. 3174. ♂. Aullagas, Bolivia, 3700 metres, 17 Oct. 1901. "Alcon." "In the act of eating a Sparrow on the ground" (*P. O. Simons*).

I have compared these three specimens, which are fully adult, with a large series of others in the British Museum, and find them to be identical.

Falco rufigularis pax.

Falco rufigularis pax Chubb, Bull. Brit. Orn. Club, xxxix. Nov. 1918, p. 22.

No. 2918. ♂ adult. Charuplaya, Bolivia, 1300 metres, 1 June, 1901. "Alconcito." "Iris brown; feet orange; bill black" (*P. O. Simons*).

Falco columbarius.

Falco columbarius Linn. Syst. Nat. 10th ed. i. 1758, p. 90 : Carolina ; Gurney, Ibis, 1882, p. 160 : Cuenca, Quito, Ecuador ; Salvad. & Festa, Boll. Mus. Torino, xv. 1900, No. 368, p. 31 : Cañar, Ecuador.

No. 155. "♀ ?" Trujillo, N.W. Peru, 1 Dec. 1912. "Iris brown ; feet bright yellow ; bill plumbeous, cere and culmen yellow" (*Brabourne*).

This appears to be the first record of this species in Peru. It was collected by the late Lord Brabourne, and presented by him to the British Museum.

Cerchneis cinnamominus æquatorialis.

Falco sparverius æquatorialis Mearns, Auk, ix. 1892, p. 269 : Guayaquil.

Tinnunculus cinnamominus (Swains.) ; Salvad. & Festa, Boll. Mus. Torino, xv. 1900, No. 368, p. 31.

Cerchneis cinnamomina Tacz. Orn. Pér. i. 1884, p. 154.

Tinnunculus sparverius (nec Linn.) ; Selater & Salvin, P. Z. S. 1879, p. 638 : Bolivia.

Falco sparverius cinnamominus Allen, Bull. Amer. Mus. ii. 1889, p. 105 : Yungas, Bolivia.

Nos. 596, 597. ♀ adult. Cañar, Ecuador, 2600 metres, 6 April, 1899. "Lahita."

No. 1103. ♂ adult. Province of Piura, Peru, 50 metres, 19 Aug. 1899. "Alcon." "Iris brown ; feet yellow ; bill black" (*P. O. Simons*).

No. 1577. ♀ adult. Carohas, Peru, 2600 metres, 17 Dec. 1899.

No. 2066. ♀ adult. Arequipa, S.W. Peru, 2066 metres, 31 May, 1900. "Seniea."

No. 2831. ♀ adult. Paratani, Bolivia, 2800 metres, 9 April, 1901. "Nelvin."

No. 2904. ♀ adult. Charuplaya, Bolivia, 1350 metres, 22 May, 1901. "Agalucho." "Found on Chunta trunk. Crop contained orthopterous insects" (*P. O. Simons*).

I do not see any appreciable difference between the seven birds enumerated above, and others from similar localities in the British Museum.

[To be continued.]

XVI.—*List of the Birds of the Canary Islands, with detailed reference to the Migratory Species and the Accidental Visitors.* Part II. TURDIDÆ—HIRUNDINIDÆ. By DAVID A. BANNERMAN, M.B.E., B.A., M.B.O.U., F.R.G.S.

[Continued from p. 131.]

Family TURDIDÆ.

Turdus philomelos philomelos. Continental Song-Thrush.
(= *Turdus musicus auctorum.*) *

Turdus philomelos Brehm, Handb. Naturg. Vög. Deutschl. 1831, p. 382—Type locality : Middle Germany.

The Continental Song-Thrush is a regular **Winter Visitor** to the Canary Islands. There is but little doubt that all

* It must be borne in mind that every single author up to the present who has written on the Canarian birds has referred to the Song-Thrush as *Turdus musicus*. Those ornithologists who follow the example of the B. O. U. Committee and conserve the name *musicus* for the Song-Thrush must then, however, call the bird which visits the Canary Islands in winter *Turdus musicus musicus*, *i. e.* the Continental Song-Thrush. I entirely agree with the Committee who compiled the list that considerable confusion will doubtless arise by transferring the name *T. musicus* to the Redwing and bestowing Brehm's name, *T. philomelos*, on to the Song-Thrush (B. O. U. List, 1915, pp. 365, 366); but confusion will arise in any case—and, in fact, has arisen—as several of our leading systematic ornithologists have already accepted the changes. If we are to be consistent in nomenclature, I can see no help for it but to reject the *nomina conservanda* proposed (B. O. U. List, 1915, p. 355) and to accept the drastic changes which have become necessary under the Rules of Nomenclature as drawn up by the International Congress of Zoology. The best way to attain uniformity is for the younger generation of ornithologists to accept all these changes quickly, disagreeable as many of them undoubtedly are. Confusion need not arise if for several years to come systematic ornithologists will only state very carefully in their publications exactly which species they mean by *Turdus musicus*, *Turdus philomelos*, *Turdus iliacus*, etc. In this "transition-stage" of nomenclature no other course is open to working ornithologists who wish to avoid the confusion which would inevitably ensue if they referred to *Turdus iliacus* without any further explanation. The original reference alone is now not sufficient.

past records of "*Turdus musicus*" must refer to the continental form, which must now be known as *Turdus philomelus philomelus*.

The exact time when the Song-Thrushes arrive in the islands is uncertain. I doubt whether they arrive very much before November (Meade-Waldo's earliest records are 10 and 16 November; 12 and 19 December, Tenerife). I have found them very plentiful in January in the high forests. They stay in the Archipelago until March, a few remaining until April, but never nesting.

The Song-Thrush ("*Turdus musicus*" of all early writers) was mentioned by Ledru in 1810 from Tenerife, and since that date has been recorded by every observer who has written on the ornithology of the group.

It is mentioned by Webb and Berthelot (Orn. Canarienne, p. 11) as a bird "de passage," and after careful investigation I have come to the conclusion with Lord Rothschild that the account given by Webb and Berthelot under the heading of *T. iliacus* (Orn. Canarienne, p. 12) really belongs to the Song-Thrush (*T. p. philomelus*, which these authors call "*Turdus musicus*"), and should have appeared under that species. My reasons together with the original quotation of this paragraph are given in this paper under the next species dealt with. The following is a translation of the most interesting part of this paragraph under dispute:—

"It is certain that Thrushes [les grives] arrive in the winter and remain a certain time in the woods. A great migration took place in 1828, above all in the island of Tenerife, where they were very numerous. This migratory wave was repeated in 1832. Thrushes were then so numerous that one killed them with sticks and stones. The migration commenced in November and continued at intervals during part of December. These birds arrived on the east coast and flooded the gardens, the greater number reached the interior of the island where they took refuge in the Pine region. . . . They rested there three months in the country and then disappeared all at once."

Bolle records the arrival of the Song-Thrush, and writes :

"In the winters 1828-30 innumerable flocks of these Thrushes (*Turdus musicus* Linn.) came to Tenerife; they appeared over the sea like swarms of locusts, flying in troops down the streets of Santa Cruz on their way to the gardens, from which later they flew off to the Pine woods of the mountains" (J. f. O. 1854, p. 453).

Meade-Waldo never records them below 1500 feet in Tenerife and found them abundant "wherever there was sufficient cover." He noted that a few remained until April (Ibis, 1893, p. 187), and that they swarmed in the mountains in the winter of 1888 (Ibis, 1889, p. 515).

Von Thanner considers it a regular Bird of Passage in Tenerife (Nov. Zool. xi. 1904, p. 431), and later mentions that many Song-Thrushes were seen at Vilaflor—a village on the southern slopes of the Peak—during the winter months 1906-7 (Orn. Jahrb. 1908, p. 214).

From the extreme western islands, Gomera, Palma, and Hierro, the Song-Thrush is not often recorded; this is probably due to the scarcity of observers rather than to the absence of the bird itself, for it is more than likely to be numerous in winter on these three islands. Meade-Waldo records it from Gomera on 12 February, 1888 (*cf.* private note-books).

In Gran Canaria I have always found it in the Monte District (1580 feet) in small numbers in January (Ibis, 1912, p. 598), but it is much more plentiful in the high ridges clothed with pines (3000-4000 feet) in the south of the island. It was particularly numerous in February 1911, and is always remarkably wild, which point is also mentioned by Meade-Waldo (Ibis, 1889, p. 1).

In the eastern group, Fuerteventura and Lanzarote, this Thrush is said by Polatzek (Orn. Jahrb. 1909, p. 125), who spent eight months in these barren islands, to be "a regular and frequent migrant and winter visitor."

Meade-Waldo saw Thrushes in Fuerteventura on the 27th and 28th of March, 1888 (private note-books), and noted that it was not uncommon in the cactus-fields (Ibis, 1889, p. 509).

Von Thanner apparently met with the Thrush on migration in Fuerteventura in the same month (March) many years later (Orn. Jahrb. 1905, p. 65), and noted it as a winter visitor.

In Lanzarote I identified a stuffed specimen in the Gonzalez private collection (Ibis, 1914, p. 62). It might strike one as curious that the Thrushes should resort to such islands as Fuerteventura when a wealth of verdure awaits them in the islands of the western group, but this is doubtless explained by the geographical position of the eastern islands, which lie much nearer the regular line of flight of migratory birds.

Needless to say, the Song-Thrush which occurs in the Canary Islands has invariably been quoted as *Turdus musicus* Linn., and it was not until quite recently that an examination of specimens which I had shot in Gran Canaria, together with those in the Meade-Waldo collection in the British Museum, revealed the fact that the migratory Thrush of the Canary Islands is undoubtedly the continental race (*Turdus philomelus philomelus*) [*Turdus musicus musicus* auctorum].

Range. The Continental Song-Thrush is apparently distributed through Europe generally, wintering in south Europe and north Africa, the Canary Archipelago probably being the southern limit of its winter range.

***Turdus musicus* *.** Redwing.

(= *Turdus iliacus* auctorum.)

Turdus musicus Linn. Syst. Nat. 10th ed. 1758, p. 169—
Type locality: Sweden.

The Redwing is evidently an **Occasional Visitor** in winter to the islands. I have never met with it myself.

Webb and Berthelot (Orn. Canarienne, p. 12) were the first to mention this species, but a certain amount of confusion seems to have taken place between this species (*Turdus iliacus* of all former writers) and the Song-Thrush, *Turdus p. philomelus* (*Turdus musicus* auctorum).

* See my footnote given under *Turdus p. philomelus*.

Webb and Berthelot mention both forms, and under the heading "*Tourdre-Mauvis—Turdus iliacus* Linn.," they have the following note which, for reasons hereafter explained, must surely refer primarily to the Song-Thrush (*T. philomelus philomelus*), *Turdus musicus* of Webb and Berthelot:—"Obs. Le nom de *Pájaro de Africa* (Oiseau d'Afrique) que l'on donne à cette espèce, de même qu'à la précédente, indique assez qu'elle n'est que de passage aux îles Canaries. En effet les grives arrivent en hiver, et séjournent un certain temps dans les bois. Leur abondance fut remarquable en 1828, surtout dans l'île de Ténérife, où leur apparition s'est reproduite d'une manière bien plus extraordinaire encore en 1832. Les grives reparurent alors en telle quantité qu'on les tuait à coups de bâton et à coups de pierre. Le passage commença en novembre et continua par intervalles durant une partie du mois de décembre. Elles débarquèrent sur la côte orientale, et traversèrent par bandes les rues de Sainte-Croix. Beaucoup se répandirent dans les jardins, et le plus grand nombre gagna l'intérieur de l'île, pour se réfugier dans la région des Pins. . . . Ces oiseaux restèrent trois mois dans le pays ; puis ils disparurent tout à coup."

Now, as Lord Rothschild has pointed out to me, the French invariably mean a Thrush when they speak of the "grive," which is the word used throughout the account just quoted ; and the Redwing, on the other hand, is known as *mauvis*.

Whether Webb and Berthelot really intended their observation to refer to the Redwing or to the Thrush or to both species it is rather difficult to say, but I incline with Lord Rothschild to the belief that the account printed above should really have been included by Webb and Berthelot under the heading of their *Turdus musicus*, for the authors certainly distinguish between the vernacular names of the two forms. It must also be remembered that the greater part of 'Ornithologie Canarienne' was written by Moquin-Tandon from notes supplied by Berthelot, and this may account for the confusion.

Bolle (J. f. O. 1854, p. 453) records the great arrival of Song-Thrushes (“*Turdus musicus*”) in the winters of 1828–1830 to the Canary Islands ; but in the J. f. O. 1857, p. 277, under the heading “*Turdus iliacus*” he quotes Webb and Berthelot’s account of the arrival of Redwings, and notes, moreover, that Berthelot told him (Bolle) “that the Redwing was even more frequent than the Song-Thrush.”

Against this we must remember that, although Bolle confirms the great swarms of Redwings in 1828 and 1832, yet he himself was not in the islands then ; and, further, he remarks : “In ordinary years the number [of Redwings] cannot be very great, for during two winters in Santa Cruz I never saw a single specimen” (J. f. O. 1857, p. 277).

The next author to mention the Redwing is Cabrera, who notes (Catálogo, p. 46) that “*T. iliacus*” is a regular bird of passage (“De paso periódico”) fairly abundant in certain years, met with as much on the coasts as in the mountains of Tenerife. He had specimens in his own collection. According to Cabrera, this bird is also cited by Serra, whose work I have not consulted.

Polatzek in his list (Orn. Jahrb. 1909, p. 125) includes the Redwing as “a regular and frequent migrant,” and places the species amongst the birds which have been verified without a doubt. It is more than probable that he had himself met with the species and had obtained examples, but I cannot agree with his statement that it is “a regular and frequent migrant.” Polatzek probably based his remarks on former writers who had blindly followed Webb and Berthelot, and the fact that he obtained specimens himself (which apparently he must have done) would lend colour to the older writings which he consulted.

Neither Meade-Waldo, von Thanner, nor myself have ever come across it, which in the case of von Thanner is most strange as he has lived a considerable time in Tenerife.

Range. The Redwing breeds in north Europe and winters in south Europe, and also in north-west Africa—where, however, it is rare.

Turdus pilaris. The Fieldfare.

Turdus pilaris Linn. Syst. Nat. 10th ed. 1758, p. 168—

Type locality : Sweden.

The Fieldfare is an **Occasional Visitor** to the Archipelago.

It sometimes arrives in autumn and occasionally also in spring, but is not by any means a regular migrant.

The first authentic record is given by Meade-Waldo, who saw a bird in the flesh which had been shot on the 19th of March close to Orotava (Ibis, 1889, p. 1), and he himself obtained a specimen, now in the British Museum, on the 15th of May, 1888, at the same place.

Polatzek mentions a passage of these birds in 1903 and gives the following account (Orn. Jahrb. 1909, p. 125) :—
“ On the 20th of October many [Fieldfares = ‘ Wacholderdrossel’] came to Lanzarote with a strong north wind. I found flocks of about fifteen birds under fig-trees at Haria, and a few were in the fields. After three weeks their numbers gradually decreased, and in the fifth week (*i. e.* about the 25th of November) they disappeared altogether. The brown tint on the breast was very vivid.”

Von Thanner considers it to be a wandering visitor in Tenerife, and also recognized a specimen of this bird in the institute at Laguna (Nov. Zool. xi. 1904, p. 431).

I have never myself met with it in any of the islands.

From the only records which we have of this bird it would appear to occasionally touch the islands actually at the time when the migratory movement from Europe to Morocco is in course of progress.

Range. The Fieldfare, which is so well known in north Europe and north Asia, winters in central and south Europe and in smaller numbers extends south to north-west Africa. The Canary Islands are surely the most southern limit reached.

Turdus merula cabreræ. Cabrera's Blackbird.

Turdus merula cabreræ Hartert, Nov. Zool. viii. 1901, p. 313—Type locality : Tenerife.

A **Resident** subspecies.

Hab. in Archipelago.

Western Group. Gran Canaria, Tenerife, Palma, Gomera, Hierro.

Range beyond the Archipelago.

Madeira.

Phœnicurus phœnicurus phœnicurus. Common Redstart.

Motacilla phœnicurus Linn. Syst. Nat. 10th ed. 1758, p. 187—Type locality: Sweden.

The Common Redstart is a fairly regular **Bird of Passage** in small numbers to the Canary Islands in spring and autumn.

Meade-Waldo's notes sum up the situation. He wrote (Ibis, 1893, p. 188): "A few Redstarts touch at the islands in spring and autumn"; and in an earlier paper (Ibis, 1889, p. 2) remarked: "I saw a male on two occasions close to my house at Orotava."

Polatzek, whose field-notes are generally reliable, quotes it (Orn. Jahrb. 1909, p. 124) as a regular bird of passage. The following are the only dated records:—

- ♂. March, 1889. Oliva, Fuerteventura. Authority: Meade-Waldo (skin in British Museum).
- ♀. 27 March, 1905. Fuerteventura. Authority: Von Thanner (Orn. Jahrb. 1908, p. 214).
- ♂. 27 March, 1909. Gran Canaria. Authority: Von Thanner (Orn. Jahrb. 1910, p. 86).
- ♂. 4 April, 1913. Tenerife. Authority: Miss Annie Jackson (in litt.).
- October. Gomera. Authority: Bolle (J. f. O. 1857, p. 283).

Cabrera had an undated specimen in his Tenerife collection (Catálogo, p. 43), and Meade-Waldo also notes a specimen brought to Ramon Gomez from Fuerteventura (Ibis, 1889, p. 509). I have not handled all the specimens which have been obtained in the Canary Islands, but those which I have seen belong to the typical form.

Range. The Common Redstart which breeds in Europe winters in west and north-east Africa and is replaced by an allied race in the Atlas Mountains. Hartert met with the

typical species at El-Golea in the south-western Sahara at the end of March, and as late as the 5th of June in the Oued Nèa (Nov. Zool. xx. 1913, p. 57). It was common on migration in Algeria, being frequently met with from El Kantara to Touggourt during the last week in March and on the 6th and 10th of April at Laghouat. On the east coast of Africa the Redstart appears to migrate south as far as 10° N. A specimen in the British Museum from Foda (Anglo-Egyptian Sudan) was obtained on 21 October, 1885.

Phoenicurus ochrurus gibraltariensis *. Black Redstart.

(= *Ruticilla titys* auctorum.)

Motacilla gibraltariensis Gmelin, Syst. Nat. i. pt. 2, 1789, p. 987—Type locality: Gibraltar.

The Black Redstart appears to be a regular **Bird of Passage** in small numbers to the islands in spring and autumn. It is recorded from Tenerife and Fuerteventura. Meade-Waldo considered it to be rather more frequent in the Canaries than the Common Redstart (Ibis, 1893, p. 188). He remarks that he examined a stuffed specimen in Cabrera's collection (Ibis, 1889, p. 515).

Cabrera obtained it in Tenerife near Laguna, and believed it to be an accidental migrant in spring (Catálogo, p. 43). This specimen was examined in the Cabrera collection by Hartert, who tells me it is certainly *P. o. gibraltariensis*.

Polatzek believed it to be a regular bird of passage and observed it twice in the eastern islands (Orn. Jahrb. 1909, p. 124).

Von Thanner also obtained it in the eastern islands of the group and records a male which he shot in Fuerteventura on the 5th of February, 1910 (Orn. Jahrb. 1910, p. 229), and

* This is another of the very few cases of nomenclature where I do not follow the Committee of the 'B. O. U. List of British Birds,' 2nd ed. 1915, in retaining the name *P. titys* for the Black Redstart (*vide* B. O. U. List, p. 366, where the reasons given for conserving the name *titys* are to my mind most unsatisfactory). I prefer to follow Messrs. Hartert, Witherby, and Ticehurst in their decision ('Hand-list of British Birds,' 1912, p. 85).

another in the same island on the 23rd of March, 1904 (Orn. Jahrb. 1905, p. 65 : "Hausrotschwänzchen").

Range. This well-known European species winters chiefly in north-west and north-east Africa, but also in southern Europe. It breeds throughout Europe generally. There are specimens in the British Museum from Morocco (undated). In east Africa it is found as far south as Berber (Sudan), and there is a bird obtained in July from Abyssinia.

Erithacus rubecula superbus. Superb Redbreast.

Erithacus superbus Koenig, Journ. für Orn. 1889, p. 183
—Type locality: Tenerife.

A Resident subspecies.

Hab. in Archipelago.

Western Group. Gran Canaria, Tenerife.

Range beyond the Archipelago.

Does not occur.

Erithacus rubecula microrhynchus *. Madeiran Redbreast.

Erithacus rubecula microrhynchus Reichenow, Journ. für Orn. 1906, p. 153—Type locality: Madeira.

A Resident subspecies.

Hab. in Archipelago.

Western Group. Palma, Gomera, Hierro.

Range beyond the Archipelago.

Madeira.

Erithacus rubecula. Redbreast.

[? *Erithacus rubecula rubecula*.]

[*Motacilla rubecula* Linn. Syst. Nat. 10th ed. 1758, p. 188—Type locality: Sweden.]

A Rare Visitor.

Redbreasts occasionally pass through the eastern islands

* I have accepted Reichenow's name for the Redbreasts inhabiting Madeira and the islands of Palma, Gomera, and Hierro in the Canary group. They are to my mind separable from the Continental race, with which they have been hitherto united by most writers, and from which I distinguish them by their paler coloration.

of the Canary Group—in which islands, be it noted, there are no resident Redbreasts.

I have not been able to examine a specimen, but am of opinion that these birds are genuine migrants, which on rare occasions visit the eastern islands. In this list it is intentionally named binomially, and therefore no original reference is given. Whether these visitors are examples of the Continental Redbreast (*E. r. rubecula*), which seems to me most probable, or whether of the north-west African race (*E. r. witherbyi*) cannot yet be proved. I strongly suspect the former, and, if this is the case, it will explain how the resident Redbreasts (*E. r. microrhynchus*) originally arrived at, and came to be isolated in, three of the western islands.

There is no evidence to show that at the present day the resident Redbreasts of Palma, Gomera, and Hierro have their numbers augmented in spring—the migrating Redbreasts having only been recorded from the eastern islands. It may be suggested that the birds which have been recorded from Fuerteventura are merely stragglers from the western islands. I do not believe this to be the solution. In the first place, the birds were observed in March—in which month *E. r. microrhynchus* is breeding,—and it would then be very unlikely to leave the islands which they have made their home when nesting is in full swing. Secondly, we have no records from Gran Canaria or Tenerife, in which geographically intervening islands another subspecies (*E. r. superbus*) is the resident form and the only Redbreast known.

So far as my knowledge goes, it shows that the various breeding birds living in the Canary Archipelago never migrate from one island to another. We have no reason, therefore, to suppose that the pale resident Redbreast is an exception to this.

The records of Redbreasts from the eastern islands are as follows:—Polatzek saw it once in the Barranco Rio Palma in Fuerteventura, and notes that it is very rarely seen in this island (Orn. Jahrb. 1908, p. 185).

Von Thanner saw it on two occasions :—

- (a) On the 23rd of March, 1904, at Gran Tarajal, Fuerteventura (Orn. Jahrb. 1905, p. 65).
- (b) On the 14th of March, 1905, also in Fuerteventura (Orn. Jahrb. 1908, p. 214).

I have no hesitation in accepting the statements of Polatzek and von Thanner that what they took to be the Continental Redbreast was seen by them in Fuerteventura.

Range. The Continental Redbreast (*E. r. rubecula*) breeds in Europe and winters in the Mediterranean countries and in northern Africa as far as the Oases in the Sahara. Type locality: Sweden.

Witherby's Redbreast (*E. r. witherbyi*) is a resident form in the Atlas Mountains of Morocco, and also breeds in Tunisia and northern Algeria. Type locality: northern Algeria.

Cyanosylvia suecica suecica *. Red-spotted Blue-throat.

Motacilla svecica Linn. Syst. Nat. 10th ed. 1758, p. 187—
Type locality: Sweden.

A Rare Visitor.

The first specimen of *C. s. suecica* is recorded by Cabrera (Catálogo, 1893, p. 43), who killed a bird of this species in October at Laguna (Tenerife).

Polatzek gives it in his List (Orn. Jahrb. 1909, p. 124) as a rare bird of passage occurring in the eastern islands (*i. e.*, Fuerteventura and Lanzarote).

Range. The Red-spotted Bluethroat breeds in northern Europe and Asia. It winters partly in north-east Africa. Its occurrence in the Canary Islands cannot therefore be expected, save as a straggler.

* I am following the Committee who compiled the 'B. O. U. List of British Birds' in not separating the typical Red-spotted Blue-throat and the Norwegian Bluethroat, *C. s. gaetkei* (Kleinschm.). Those who distinguish between the two supposed forms would doubtless find that it is *C. s. gaetkei* which occurs as a Rare Visitor in the Canaries (*cf.* B. O. U. List of British Birds, 1915, p. 368). I have not examined a specimen from the Canary Islands.

Cyanosylvia suecica cyanecula. White-spotted Bluethroat.

Sylvia cyanecula Wolf, in Meyer & Wolf, Taschenb. 1810, p. 240—Type locality: Germany.

This is a **Rare Visitor** to the Archipelago.

The records of the White-spotted Bluethroat occurring in the Canary Islands are not by any means plentiful. In fact, the only occurrences which seem genuine are:—

- a. Two birds seen by Meade-Waldo which had been shot near Laguna (Ibis, 1889, p. 2). These are probably the male and female mentioned by Cabrera in his 'List' as having been shot in November 1889 (Catálogo, p. 43).
- b. A single bird identified in 1913 by myself in the Gonzalez Collection in Arrecife. This bird had been shot in the island of Lanzarote (Ibis, 1914, p. 62).

Polatzek, who spent eight months in the eastern group and chronicles the arrival of many migrants, does not mention any specific occasion upon which he met with this species. He writes:—"Like the Red-spotted Bluethroat this species may also pass through the eastern islands" (Orn. Jahrb. 1909, p. 124). This species is there referred to as *C. wolfi* (Brehm).

Range. The White-spotted Bluethroat is a European species, which in winter migrates through western Europe to north-west and north-east Africa.

Saxicola dacotiae dacotiae. Fuerteventuran Chat.

Pratincola dacotiae Meade-Waldo, Ibis, 1889, p. 504, pl. xv.—Type locality: Fuerteventura.

A **Resident** species.

Hab. in Archipelago.

Eastern Group: Fuerteventura.

Obs. Confined to this island.

Range beyond the Archipelago.

Does not occur.

Saxicola dacotiae murielæ. Muriel's Chat.

Saxicola dacotiae murielæ Bannerman, Bull. B.O.C. vol. xxxiii. 1913, p. 37 (figured Ibis, 1914, pl. v.)—Type locality: Allegranza.

A Resident subspecies.

Hab. in Archipelago.

Outer islets. Montaña Clara, Allegranza.

Range beyond the Archipelago.

Does not occur so far as is known.

Obs. It must be remembered that the Avifauna of the opposite coast of Africa is practically unknown. The fact that all these Chats undoubtedly left Montaña Clara whilst I was living on this island, suggests that they may have their headquarters on the mainland. They may, however, have only crossed to Allegranza.

Saxicola rubicola rubicola. Stonechat.

Motacilla rubicola Linn. Syst. Nat. 12th ed. 1766, p. 332—Type locality: France.

The Stonechat is said to be a Bird of Passage in the Canary Islands.

The species is mentioned by several authors, but I have been unable to examine a specimen. It is certain, however, to be the typical race which passes through the islands.

The Stonechat is mentioned as far back as 1841 by Webb and Berthelot, who note (Orn. Canarienne, p. 13) that it is "Rather rare in the Canaries, one meets with it in the Mercédes woods" (*i. e.* in Tenerife).

Bolle wrote that it turns up occasionally in winter always separately (J. f. O. 1857, p. 279).

Cabrera mentions that it has been met with in the vicinity of Mercédes, but he does not say whether this is from his own observation or whether he is simply quoting Webb and Berthelot (Catálogo, p. 40).

The most definite record is given by Polatzek, who wrote: "I saw only males and met them in the eastern islands as regular winter visitors. The flight begins often early in

October. In March I saw them on the return journey (Orn. Jahrb. 1909, p. 124).

Range. The typical race of the Stonechat breeds throughout Europe and north-west Africa and winters in the Sahara. It seems strange that Polatzek should have noted it as a regular transient through the Canaries, as I know of no records of this species from south of the islands. Where, then, do these birds go?

In west Africa it is common in Mazagan, and there is a large series from there in the Tring Museum obtained in April, May, October, and December, besides several from the Atlas Mountains obtained between the months of March and June. The most southern records are skins from Imintanout obtained in May. All these places are on the African coast north of the Canaries.

Saxicola rubetra rubetra. Whinchat.

Motacilla rubetra Linn. Syst. Nat. 10th ed. 1758, p. 186
—Type locality: Sweden.

The Whinchat is an irregular Bird of Passage. I have been unable to examine a skin, but it is certain to be the typical form which occurs there on migration.

The first record is by Cabrera, who recognized two birds in the spring of 1890 in the barranco of Mercedes, Tenerife (Catálogo, p. 40).

Polatzek includes the Whinchat as a regular bird of passage in the eastern islands in October; he notes that he saw small companies of them on their journey and that they did not remain in the island. He adds that he obtained specimens (Orn. Jahrb. 1909, p. 124).

I am doubtful whether *S. r. rubetra* can be considered a regular bird of passage, as Polatzek is the only ornithologist to have observed the bird regularly, and he only lived in the Archipelago for two and a half years. Neither Meade-Waldo nor von Thanner has met with it.

Range. The Whinchat breeds in Europe and winters in tropical Africa. Its occurrence in the Canary Islands is

therefore to be expected. I have examined skins from the Gold Coast obtained in October and November, from Senegal in March, September, October, and December, from Sierra Leone in March and April, from Morocco (Mazagan and Rahamna) in September, October, and May, and a bird obtained in Mogador on 5th November, all by Riegenbach (skins in Tring Museum), while Geyr von Schweppenburg met with it as far south as Ain Taiba in January, almost on the same parallel as Mogador.

Ænanthe ænanthe ænanthe. The Wheatear.

Motacilla ænanthe Linn. Syst. Nat. 10th ed. 1758, p. 186
—Type locality: Sweden.

From the actual records which we possess it is doubtful whether the typical Wheatear can yet be considered more than a **Rare Visitor** to the Canary Islands. I believe, however, it will eventually prove to be at any rate an occasional visitor.

Unfortunately all the older writers have failed to distinguish between this and the Greenland Wheatear, and it is therefore impossible to be certain to which form their records and remarks belong.

I have carefully examined a great many skins in the British and Tring Museums of this and the larger race, and have but little doubt that the majority of records of "*Saxicola ænanthe*" from the Canary Islands should rightfully belong to *Ænanthe ænanthe leucorrhoa*. I have therefore included them under binomial nomenclature (see next species) and indicated at the same time that I believe *Æ. æ. leucorrhoa* is the race to which they should refer.

There is, however, one very definite record of the typical form:—

Von Thanner wrote in the Orn. Jahrb. 1912, p. 226 that he had shot a male example of "*Ænanthe ænanthe ænanthe*" in Fuerteventura on the 25th of March, 1912.

It is possible that an immature male killed in Tenerife on the 28th of September, 1908, and recorded by von Thanner

(Orn. Jahrb. 1909, p. 149) as "*Saxicola ænanthe*" may have belonged to the typical form, as it is doubtful if von Thanner then distinguished between the two forms, and in any case it was an immature bird.

Range. The Wheatear inhabits the whole of Europe and part of Asia and winters in tropical Africa. There is nothing to prevent it occurring fairly regularly in the Canary Islands on migration.

Ænanthe ænanthe. Wheatear.

[? **Ænanthe ænanthe leucorrhoa.**]

[*Motacilla leucorrhoa* Gmelin, Syst. Nat. i. pt. 2, 1789, p. 966—Type locality: Senegal.]

This Wheatear seems to be a somewhat irregular Bird of Passage in spring and autumn through the Canary Islands.

The majority of specimens appear to have been noticed in September.

I have not myself examined any skins from the Canaries, but am strongly of opinion that they will prove to belong to the large race, *i. e.* the Greenland Wheatear (*Ænanthe ænanthe leucorrhoa*). All records (with one exception) have been published as *Saxicola ænanthe*, but with the exception of Hartert and von Thanner (once) all former writers have failed to distinguish between the Greenland Wheatear and the typical form.

Webb and Berthelot, from 1828 to 1830, considered the Wheatear to be found accidentally in the Canaries after squalls from the south-west (Orn. Canarienne, p. 13).

Bolle in 1852 and 1856 noted it as a bird of passage in winter, and says that Berthelot told him he had shot many of them (J. f. O. 1857, p. 279).

Busto-y-Blanco is said to mention it in 1864.

Meade-Waldo from 1887-91 found it to be "a scarce and irregular visitor to the Laguna Plains in winter" (Ibis, 1893, p. 188).

Cabrera says it is a bird of passage in September and

that he had a specimen in his collection (Catálogo, 1893, p. 40).

Between 1893 and 1907 no birds were recorded, but we then find two records which may either refer to this or to the typical form. Apparently the collector (von Thanner) was not certain to which form his birds should be referred, as in the Orn. Jahrb. 1909, p. 149, he records "an immature male example of *Saxicola ænanthe*" as having been killed in Tenerife by himself on the 28th of September, 1908.

With regard to the next specimen, which von Thanner shot on the 25th of March, 1912, in Fuerteventura, he had evidently no doubt as to which form it belonged to, as he records it as "*Ænanthe ænanthe ænanthe*," the Common Wheatear (Orn. Jahrb. 1912, p. 226), and this bird I have already recorded under that heading in this paper (see preceding species).

Again, in the same paper (Orn. Jahrb. 1912, p. 227), von Thanner mentions a bird at Vilaflor (Tenerife) on the 27th of September, 1912, which he records simply as "*Saxicola ænanthe*"*.

Polatzek presumably never met with it, as he omits it from his list entirely.

I have carefully examined the material in the British and Tring Museums with a view to fixing definitely the race of the Wheatear which passes through the islands. It may therefore be of interest to enumerate the specimens of the large race which I have examined from west Africa or the Atlantic islands.

In the first place, it must be remembered that Gmelin described this Wheatear from west Africa, the type locality being Senegal.

* From the above three records, I conclude that von Thanner differentiates between the two forms: the first he might be unable to name for certain as it is a young bird, the second he has no doubts about and names trinomially, but is not certain of the identification of the third and so rightly names it binomially. Possibly the last-named specimen was not actually procured.

There are only four birds in the British Museum from the west coast of Africa, all of which I believe to belong to this large race of Wheatear, *Ænanthe ænanthe leucorrhoa* :—

a. Gambia River, Senegal.	No date.	Wing 103 mm.
b. Dakar, Senegal.	No date.	„ 104 „
c. Bo, Sierra Leone.	Feb. 1904.	„ 96 „
(Robin Kemp Coll.).		
d. Golf Course, Sierra Leone.	6th Feb. 1911.	„ 99 „
(Willoughby Lowe Coll.).		

There are as well two specimens from the Azores also referable to the Greenland Wheatear :—

e. ex Ponta, Delgada Museum, San Miguel.	No date.	Wing 102 mm.
f. Flores.	May 1865.	„ 101 „

In the Tring Museum I have examined the following specimens of *Æ. æ. leucorrhoa* :—

- g-n.* ♂ ad. Mazagan (Morocco), 3-22nd October, 1901.
o. ♂ ad. Biskra (Algeria), 22nd March, 1908.
p-r. ♂ ad. Near Thiès (Senegal), 11th and 23rd Feb. 1908, and 23rd Nov. 1907.

The following records relating to this species in north-west Africa are also worthy of notice here :—

Dr. Hartert (Nov. Zool. x. 1903, p. 295) records three adult birds from the Rio de Oro obtained in July 1902, and four juvenile specimens shot in the same month, which had doubtless been bred there [Riggenbach Coll.].

In a later Expedition Hartert found it in the western Sahara [near Oued Mya] on the 10th of April, 1912 (Nov. Zool. xx. 1913, p. 54).

Range. The Greenland Wheatear breeds in Greenland and north-east America. It migrates through western Europe to the Azores and through north-west Africa to Senegambia and Sierra Leone. It is almost certain to be this form which visits the Canaries on migration in spring and autumn.

Ænanthe stapazina stapazina *. Western Black-eared Wheatear.

Motacilla stapazina Linn. Syst. Nat. 12th ed. 1766, p. 331
—Type locality : Spain.

A Rare Visitor to the Canaries.

I only know of one example having been obtained in the Archipelago.

Von Thanner shot a male Western Black-eared Wheatear in Tenerife on the 21st of February, 1903, and this specimen I have examined in the Tring Museum. It is a beautiful skin and the bird is in very perfect plumage.

This occurrence of the Western Black-eared Wheatear in the Canaries was first recorded by Tschusi in the Orn. Jahrb. 1903, p. 176, where he alluded to the above-mentioned specimen, naming it *Saxicola aurita*, which is a synonym of *Ænanthe stapazina stapazina* †.

The same example is mentioned by Polatzek in his paper (Orn. Jahrb. 1909, p. 125) also under the name *S. aurita* Temm.

Range. The Western Black-eared Wheatear breeds in south-west Europe, in Portugal, Spain, and in north-west Africa. It is apparently a bird of passage in the western Sahara south to Senegal.

* If we consider the Western Black-eared Wheatear (*Ænanthe stapazina*) and the Western Black-throated Wheatear (*Ænanthe occidentalis*) to be dimorphisms of the same species, we can then use the name *Ænanthe hispanica* (Linn.), as is done by Hartert, for both forms. But if we consider these two varieties to be distinct and separate species (which is the view taken by the B. O. U. Committee who drew up the List of British Birds, 1915) and not dimorphisms of the same species, we cannot use the name *hispanica*, for the reasons clearly set forth in the B. O. U. List, p. 369.

I have not yet formed my own conclusions on this much debated question, and, in the meantime, while preserving an open mind on the subject, I temporarily follow the Committee in their ruling and call the bird which von Thanner obtained in the Canary Islands *Ænanthe stapazina stapazina*, as it is an example of the Western Black-eared Wheatear.

† Hartert considers both *aurita* and *stapazina* synonyms of *hispanica*, as he believes the Black-eared and Black-throated varieties to be dimorphic.

According to Hartert (Nov. Zool. xx. 1913, p. 73), the majority perhaps winter in the Saharan oases.

Enanthe deserti homochroa. Tristram's Desert-Wheatear.

Saxicola homochroa Tristram, Ibis, 1859, p. 50—Type locality: Tunisian Sahara.

The western form of the Desert-Wheatear is a **Rare Visitor** to the Canary Islands.

Only four examples are known to have been obtained, and three of these I have examined in the Tring Museum.

All were collected within three days by Herr von Thanner.

a. ♂. Tenerife, 24.ii.03 (not quite adult).

b. ♂. Tenerife, 25.ii.03 (adult).

c. ♂. Tenerife, 25.ii.03 (adult).

The fourth example, a female, does not appear to be in the Tring Museum.

The above specimens were first referred to by Ritter von Tschusi, who wrote (Orn. Jahrb. 1903, p. 176): "von Thanner informed me that he had killed on the 21 Feb. 1903 a *S. aurita* ♂. On the 24th of the same month (February) ♂ ♀ of *S. stapazina* and on the 25th three males." Next they were mentioned in the Nov. Zool. 1904, p. 431, where von Thanner wrote "in the preceding year I was able to collect in one morning . . . *Saxicola deserti* . . .," mentioning three other rare visitors as well.

Enanthe stapazina is, according to Hartert, synonymous with *Æ. hispanica hispanica* (the Spanish Wheatear), but there is no doubt at all that the three male birds in the Tring Museum enumerated above are examples of *Æ. deserti homochroa* (Tristram's Desert-Wheatear), and have nothing to do with *Æ. stapazina* or *Æ. hispanica*.

Tschusi certainly mentions both *Æ. stapazina* and *Æ. aurita* in his paper, but both these names are synonymous!

The original labels of von Thanner show that the three birds which we now know to be *Æ. deserti homochroa* were first erroneously named *stapazina* by the collector, who

wrote this to Tschusi, and hence Tschusi's error in Orn. Jahrb. 1903, p. 176, in referring these birds to *Æ. stapazina*, when, as pointed out by Polatzek (Orn. Jahrb. 1909, p. 125), they really belong to a race of *Ænanthe deserti*.

In his paper, here referred to, Polatzek explains that von Thanner wrote to him that the Wheatears described [by Tschusi] in Orn. Jahrb. 1903, p. 176, were not *Æ. stapazina* but *Æ. deserti*.

Range. Tristram's Desert-Wheatear extends from Tunisia to Cape Blanco. I have handled a skin in the Tring Museum from the latter locality, obtained on the 10th of May.

Family MUSCICAPIDÆ.

Muscicapa grisola grisola *. The Spotted Flycatcher.

Muscicapa grisola Linn. Syst. Nat. 12th ed. 1766, p. 328—
Type locality : France.

The Spotted Flycatcher is probably a fairly regular **Bird of Passage** in varying numbers during the spring and autumn migration.

It must be remembered that in the whole group of islands there are probably not more than two ornithologists who know the bird by sight, and that for years together a bird so sombrely coloured as the Spotted Flycatcher might entirely escape detection.

Opinions vary as to the migrations of this Flycatcher to the Canary Islands, as the following quotations show :—

“An occasional straggler ; I saw one Spotted Flycatcher that had been shot in the winter near Laguna” (Meade-Waldo, Ibis, 1889, p. 2 ; 1893, p. 192).

“A regular bird of passage in the Eastern islands” (Polatzek, Orn. Jahrb. 1909, p. 123).

“An accidental migrant arriving in these islands in May, when I have shot various specimens at Laguna” (Cabrera, Catálogo, p. 48).

* If Vroeg's Catalogue (1764) is recognized, the Spotted Flycatcher must be known as *M. striata striata*. I follow the Committee of the B. O. U. List (1915, p. 371) in rejecting Vroeg's names.

Von Thanner records specimens from Tenerife on the 30th of September, 1910, "which appeared for many days" (Orn. Jahrb. 1910, p. 229).

Range. The Spotted Flycatcher breeds throughout Europe and in the Atlas Mountains in Morocco. It winters in central and southern Africa.

Muscicapa atricapilla atricapilla *. Pied Flycatcher.

Muscicapa atricapilla Linn. Syst. Nat. 12th ed. 1766, p. 326—Type locality: Sweden.

The Pied Flycatcher is a regular Bird of Passage to the Canary Islands during the spring and autumn migration.

Webb and Berthelot (Orn. Canarienne, p. 11) and Bolle (J. f. Orn. 1857, p. 286) both record it before 1858, Bolle noting that it is seen occasionally in Tenerife during winter.

Cabrera (Catálogo, p. 47) shot various examples near Laguna in May.

Meade-Waldo saw one at Laguna on 25 April, 1890 (Ibis, 1890, p. 429), and remarks that it is occasionally met with (Ibis, 1893, p. 192), while nearly twenty years later Polatzek wrote (Orn. Jahrb. 1909, p. 122): "It is a regular migrant. I have often seen some in October in Lanzarote. On the 14th of October, 1904, a south wind succeeded a strong north-west wind, and I saw several hundreds of them; some on the walls, some on the trees surrounding Haria in Lanzarote. When the north [? south] wind went on the 17th of October they all flew away."

Von Thanner shot a bird on the 10th of October, 1904, in the pine-woods of Tenerife (Orn. Jahrb. 1908, p. 214), and again records some from Tenerife on the 30th September, 1910, which birds remained in the vicinity for several days (Orn. Jahrb. 1910, p. 229), and two years later noted two or three birds at Granadilla (Tenerife) on the 3rd of September, 1912 (Orn. Jahrb. 1912, p. 227).

* If Vroeg's Catalogue is accepted, the name of the Pied Flycatcher must be *M. hypoleuca hypoleuca*. I reject Vroeg's names (see footnote under previous species).

Range. The Pied Flycatcher breeds in Europe and winters in Africa. A geographical race has been recognized from north-west Africa, and one from Asia Minor.

Muscicapa parva parva. Red-breasted Flycatcher.

Muscicapa parva Bechstein, Latham's Allg. Uebers. d. Vögel, ii. 1794, p. 356—Type locality: Thuringia.

A very Rare Visitor, which has been recorded on one occasion only.

Polatzek (Orn. Jahrb. 1909, p. 123) writes: "*M. parva* was taken in the Canary Islands by myself. I shot a juvenile specimen in Lanzarote on the 24th of November, 1904. There were several more there, only I could not properly recognize them in their very different immature plumage. The specimen I killed is in the collection of von Tschusi at Hallein."

In an earlier part of the same paper (Orn. Jahrb. 1908, p. 82) Polatzek notes that Tschusi confirmed the identification of this specimen.

This occurrence of the Red-breasted Flycatcher in the Canary Islands is very interesting.

Owing to the war I have naturally been unable to examine the skin of Polatzek's bird, which should be done at the first opportunity. It will surely prove to be a skin of the typical species.

It may be remarked that it is quite impossible for any ornithologist to confuse a skin of the immature Red-breasted Flycatcher with that of any other species; and Ritter von Tschusi is a most careful naturalist, whose identification of such a bird can be accepted without question.

Range. The Red-breasted Flycatcher breeds in Europe and winters in western India; it has, however, been procured near Cairo. The possibility of its wintering in tropical Africa was suggested by the editors of the 'Hand-List of British Birds.'

Family HIRUNDINIDÆ.

Hirundo rustica rustica. Swallow.

Hirundo rustica Linn. Syst. Nat. 10th ed. 1758, p. 191—
Type locality : Sweden.

The Swallow is a regular Bird of Passage in spring and autumn, but is especially numerous in spring.

The earliest record of its arrival is 5 February, a very early date, but the majority appear during the latter part of April, and are more or less plentiful until the end of June. I do not know whether the birds remain long in the islands or whether one batch of migrants succeeds another, which take their place while the first batch proceed on their journey north, and in this way give the impression that the same birds which arrived in April are still present at the end of June. I think, however, that Meade-Waldo was right when he concluded that Swallows never remained for long in the islands (Ibis, 1893, p. 192). I have never been in the islands in July and have no records of any in August, though stragglers may sometimes pass through after the main body have long departed. In this connection it is worth noting that when on board ship on 15 August, 1908, in lat. $13^{\circ} 2' N.$, $17^{\circ} 32' W.$, and about 40 miles from the African coast, three Swallows came aboard. These birds*, had they continued their course and survived, would very possibly have found their way to the Canary Islands.

Swallows do not breed in the islands, and I cannot find a single instance of their having done so of late years. The only authority for their ever having done so is F. Du Cane Godman, who remarks (Ibis, 1872, p. 171) that in the spring of 1871 he "found the Swallow breeding abundantly in [the] . . . Canaries." Floericke mentions the same fact, but his statements are proverbially untrustworthy (A. d. Heimat d. Kanarienvög. 1905).

Good ornithologist as he was, I cannot help thinking that Godman was mistaken in believing the Swallow nested

* The skins are in the British Museum.

in the islands. The evidence of every writer prior to 1871, including Ledru (1810), Webb, Berthelot, and Moquin-Tandon (1841), and Bolle (1857), is most emphatic in noting that the Swallow is a bird of passage only, not nesting in the Canaries. The same applies to every other observer up to the present day. If it did so in 1871, it has certainly ceased to do so since.

The following records as to the spring arrival of the Swallow in the Archipelago have been published from time to time, the authority for the statement is placed in brackets in each case:—

Spring Migration.

- | | |
|------------------|--|
| 5 Feb. 1909. | Gran Canaria. After a great storm a large number seen (von Thanner, Orn. Jahrb. 1910, p. 85). |
| 26 Feb. 1887. | Tenerife. First appeared on this date at Buena Vista (Savile Reid, Ibis, 1887, p. 433). |
| 31 March, 1913. | Orotava, Tenerife. A number passing over (Miss A. Jackson, <i>in litt.</i>). |
| 22 April, 1913. | Gran Canaria. Fairly plentiful (Bannerman, MS. note-books). |
| 25 April, 1890. | Tenerife. Thousands of Swallows after two or three days of dull stormy heat (Meade-Waldo, Ibis, 1890, p. 429). |
| 1 May, 1913. | Las Palmas, Gran Canaria. Shot several with testes small (Bannerman, MS. note-books). |
| 6 May, 1857. | Guanarteme, Gran Canaria. Flock of 20 seen (Bolle, J. f. O. 1857, p. 322). |
| 12-14 May, 1913. | Fuerteventura. Several flocks seen (von Thanner, Orn. Jahrb. 1913, p. 189). |
| 17 May, 1913. | Alleganza. Some Swallows seen (von Thanner, Orn. Jahrb. 1913, p. 191). |
| May 1913. | Gran Canaria. Swallows in small numbers throughout the month (Bannerman, MS. note-books). |
| June 1913. | Numbers seen throughout the month (Bannerman, MS. note-books). |

The return migration in autumn of the Swallow is less marked, and takes place in October. For my part I have not been much in the islands at this time of the year, and therefore have to rely on the information supplied by other observers. Webb and Berthelot (Orn. Canarienne, p. 23) and Bolle (J. f. O. 1854, p. 460) considered the

Swallow to be a bird of passage in winter. The following are the only records:—

Autumn Migration Records.

- 23-25 Oct. 1887. Orotava, Tenerife. Swallows seen (Meade-Waldo, MS. diary).
29 Oct. to 1 Nov. 1904. Tenerife. Numerous Swallows on passage (von Thanner, Orn. Jahrb. 1908, p. 214).

Range. The Swallow breeds throughout Europe and in north-west Africa, and in winter is found throughout tropical and southern Africa.

Delichon urbica urbica House-Martin.

Hirundo urbica Linn. Syst. Nat. 10th ed. 1758, p. 192—
Type locality: Sweden.

The House-Martin is a **Bird of Passage** in spring and autumn to the Canary Islands, but has never been known to breed.

It cannot be considered a very regular migrant, as it turns up in varying numbers, sometimes being very numerous and in other years very scarce.

The earliest record is on 5 February, but this is an unusually early date, and the bird cannot be expected before the beginning of April, in which month the majority of birds passing north have been recorded.

The latest date upon which House-Martins have been seen is 20 June, but it is worthy of note that between the 10th and 20th of June Herr von Thanner has noticed three or four of these birds pass through Vilaflor (a village on the slopes of the peak of Tenerife) every year for ten years, *i. e.* from 1902-1912!

Observers are naturally very scarce in the Archipelago, and this must always be taken into consideration, but it may safely be surmised that for every bird which is seen in the day 100 others pass in the night.

The House-Martin has been recorded by almost every naturalist of repute who has been in the islands at the time of migration; and Cabrera, who published a list of the birds

of the Archipelago, notes (Catálogo, p. 37) that this species is cited by the Spanish naturalists Viera, Mompo, Busto, and Serra.

About the return autumn migration we have very few records, but from these it would appear that the vanguard arrives in September, but the majority pass through on their journey south at the end of October.

The following are the only reliable records :—

Spring Migration Records of D. u. urbica.

- 5 Feb. 1909. Maspalomas, Gran Canaria. After a great storm a great number of House-Martins; all disappeared next day (von Thanner, Orn. Jahrb. 1910, p. 85).
- 25 Feb. 1912. Charco, Maspalomas, Gran Canaria. Two birds flying over (Bannerman, Ibis, 1912, p. 597).
- 29 March, 1887. "I saw quite a number of Martins (*C. urbica*) flying over the houses at Orotava . . . but did not meet with the species again" * (Savile Reid, Ibis, 1887, p. 433).
- April 1852. Oliva, Fuerteventura. Large swarms flying over (Bolle, J. f. O. 1854, p. 460).
- 1-15 April, 1905. Jandia, Fuerteventura. Numerous birds all flying *westwards* (von Thanner, Orn. Jahrb. 1908, p. 214).
- 23 April, 1913. Las Palmas, Gran Canaria. A single bird seen (Bannerman, MS. note-books).
- 25 April, 1913. Las Palmas, Gran Canaria. A single bird seen (Bannerman, MS. note-books).
- 25 April, 1890, and following days. Tenerife. Thousands noted, preceded by two or three days of dull steamy heat (Meade-Waldo, Ibis, 1890, p. 429).
- 1 May, 1890. Orotava, Tenerife. Two shot (Meade-Waldo).
- 11 May, 1912. Vilaflor, Tenerife. The beginning of a migratory movement of many House-Martins †, which stayed in Vilaflor for a time only, as the previous lot did (Thanner, Orn. Jahrb. 1912, p. 227).
- 19 May, 1913. Tinosa, Lanzarote. Two seen, one shot ‡ (Bannerman, Ibis, 1914, p. 251).
- 20 May, 1904. Adeje, Tenerife. One seen (von Thanner, Orn. Jahrb. 1905, p. 212).

* Reid remained in Tenerife until middle of April.

† Recorded under the vernacular name only—"Stadtschwalben."

‡ Skin in the British Museum.

- 29 May to 11 June, 1905. Vilaflor, Tenerife. Single birds seen every day (von Thanner, Orn. Jahrb. 1908, p. 214).
1 June, 1904. Vilaflor, Tenerife. Two seen (von Thanner, Orn. Jahrb. 1905, p. 212).
19 June, 1912. Four House-Martins seen. "This late appearance very striking" (von Thanner, Orn. Jahrb. 1912, p. 227).
10-20 June (1902-1912). Every year between the dates mentioned, for the last ten years, three to four House-Martins pass through Vilaflor, stay one or two days, and then disappear (von Thanner, Orn. Jahrb. 1912, p. 227).

Autumn Migration Records.

- 29 Oct. to 1 Nov. 1905. Tenerife. House-Martins numerous on migration (von Thanner, Orn. Jahrb. 1908, p. 214).
12 Nov. 1910. Tenerife. A single bird seen (von Thanner, Orn. Jahrb. 1910, p. 229).

Range. The House-Martin breeds throughout Europe, and in winter migrates south to south-east Africa and on the west coast to Angola. Some of these latter are doubtless the birds which pass through the Canary Islands.

Riparia riparia riparia. Sand-Martin.

Hirundo riparia Linn. Syst. Nat. 10th ed. 1758, p. 192—
Type locality : Sweden.

For the present we must consider the Sand-Martin an **Occasional Visitor** to the Canary Islands during the migration period.

The actual records are so rare that I have quoted in full the only ones available, which were obtained in spring or early summer. In certain years Sand-Martins evidently pass through in fairly plentiful numbers. It is probable that a few birds of this species accompany the Swallows and House-Martins every year, and that further research will prove it to be a regular Bird of Passage.

Meade-Waldo only saw a few in 1890-91 (Ibis, 1893, p. 192). On the 25th of April, 1890, and following days they were numerous. The migration was preceded by two or three days of dull steamy heat (Ibis, 1890, p. 429).

Cabrera, who lived many years at Laguna, noted that it arrived with others of the same family, and he had specimens in his collection (Catálogo, p. 37).

Polatzek, who spent over two and a half years in the Archipelago, wrote (Orn. Jahrb. 1909, p. 120) :—"In Puerto Cabras, Fuerteventura, on my arrival on the 4th of July I found a large number of these birds and the preceding species [*Cotile rupestris* = *Riparia rupestris* (Scop.)], where, late in the evening, they were flying round the houses. They arrived some days before the 4th of July, and were still there when I left on the 8th. No disturbing winds prevailed either before my arrival or after my departure. At Oliva (a village in the north of the same island) I noted them until the middle of June, not daily however; they were on migration."

The last record of the Sand-Martin having been seen in the Archipelago was sent to me by Miss Annie Jackson, who noticed a single bird at Orotava on the 4th of April, 1913 (*in litt.*).

I believe that I have seen the bird myself in Gran Canaria, but as it was flying at a great height the record would be unsatisfactory.

Range. The Sand-Martin breeds throughout Europe and in Africa, in Algeria and Tunisia. It is said to winter in eastern and southern Africa.

Riparia rupestris. Rock-Martin.

Hirundo rupestris Scopoli, Annus I. Historico-Nat. 1769, p. 167—Type locality: Tirol.

The Rock-Martin is an Occasional Visitor on migration, sometimes in large numbers, but is very irregular in its appearance.

Cabrera found it to be fairly frequent in its visits (Catálogo, p. 37), and had several specimens in his collection, which Hartert examined.

Polatzek includes the Rock-Martin as a bird of passage (Orn. Jahrb. 1909, p. 120), and on one occasion saw a large number of these birds in company with Sand-Martins on the 4th of July in Fuerteventura [see notes under *R. r. riparia*].

Notes on the Heights at
which Birds migrate.
by Capt. Collingwood Ingrams.
Suggested by W. Richmond.

Polatzek also remarks that he noted some "as late as June." Apparently this must have been in another year.

Range. The Rock-Martin breeds in the Atlas Mountains and in the Mediterranean countries, and winters in north-east Africa. The extent of its winter range on the west coast of Africa seems to be little known.

[To be continued.]

XVII.—*Notes on the Height at which Birds migrate.*

By Capt. COLLINGWOOD INGRAM, M.B.O.U.

THE height at which birds migrate is one of the branches of ornithology upon which we are still profoundly ignorant. With the exception of one or two chance observations made through astronomical telescopes, until the advent of aeroplanes, our knowledge of the subject was limited to the range of human vision above the earth's surface.

W. E. D. Scott, of Princeton, U.S.A. (*cf.* 'Story of a Bird Lover,' New York, 1903), and F. M. Chapman (*cf.* Auk, 1888) were the first to publish authentic records of birds travelling at considerable elevations.

These naturalists detected birds flying across the moon's face while making telescopic observations of that luminary. Mr. Chapman's remarks are interesting: "During the first half-hour of observation (which lasted from 8 P.M. to 10.50 P.M., Sept. 3, 1887) a number of birds were seen flying upwards . . . these evidently being birds which had arisen in our immediate neighbourhood and were seeking the proper elevation at which to continue their flight; but after that time the line of flight was parallel to the earth's surface, the general direction being south." He was able to recognize Carolina Rails, Grackle, Snipe, and Duck. These he estimated crossed in front of the lens at elevations varying from 6000 ft. to 14,000 ft.

The height at which birds migrate is undoubtedly governed very largely by the meteorological conditions prevailing at the time, and when the air is inclined to be thick or heavily charged with moisture (if birds are migrating at all in such

weather) they will show a tendency to travel low—so low, in fact, that sometimes they almost skim the surface of the sea, as the writer has himself observed off the China coast.

In clear weather, on the other hand, the majority of birds will fly so high that even the largest of the day migrants passes unseen on its way to and from its summer quarters. Some species, however, appear to fly low habitually. Writing of the diurnal migration as noticed at the Tuskar Rock, Ireland, Prof. C. J. Patten estimates the average height for Meadow-Pipits to be 70 ft., for Wagtails 120 ft., and for Swallows 40 ft.

During the two years I was with the R.F.C. and Royal Air Force in France (1916–1918) I made every effort to collect information that would throw some light on the subject under discussion, and with this object in view I interrogated a very large number of pilots and observers—possibly as many as seven to eight hundred. The majority of these had seen no birds above a few hundred feet, but a small percentage had done so and were able to impart very interesting information, most of which I have endeavoured to incorporate in the present paper. Vague statements, or those open to question, have been omitted.

I have heard it said that the average man is too unobservant to make a mental note of birds encountered during the course of a flight. Under ordinary conditions there might be some ground for this argument, but it cannot apply in the present case. While on a patrol over the enemy's lines, vigilance was always of such vital importance that a pilot was extremely unlikely to overlook the passing of a flight of birds, and, moreover, an encounter of this kind was always regarded as an interesting event and one sufficiently unusual to warrant comment on return to the squadron, and generally an entry in the observer's diary.

For these reasons I think the data obtained can be regarded as tolerably reliable with regard to heights, dates, etc.; but unfortunately, as the majority of the observations were communicated by men making no pretensions to ornithological knowledge, the identification of the species, and sometimes the family, was not always certain.

The birds most frequently observed appear to have been Green Plover or Lapwings (*Vanellus vanellus*), and I have fourteen records of this species between 2000 ft. and 8500 ft., the majority being about 5000 ft. or 6000 ft. They were met with in flocks during the spring and autumn passage, the earliest dates being 1 February, 1918, and 15 July, 1917. On 26 February, 1917, Col. C. F. Portal, D.S.O., M.C., of No. 16 Squadron, encountered a flock of Green Plover at 6000 ft. over Candas. "These were flying at an air-speed of about 50 m.p.h. As they were heading more or less north, from which direction a very strong wind was blowing, their progress was almost negligible. At lower elevations the wind was more favourable, and had they chosen to fly close to the ground it would have been very nearly behind them. One wonders why they chose such an unfavourable current!"*

Geese and Duck have also been encountered on a number of occasions, and I have records of seven instances. Col. Portal met with birds of this family at a very considerable height, and has published the following note:—"While flying on duty between Béthune and La Bassée at a height of 8500 ft. this afternoon (26 November, 1915), I was astonished to see a flock of 500 Ducks or Geese passing over Béthune at least 3000 ft. above the level of our machine. The wind was about 45-50 m.p.h. N.N.E., and the birds were travelling due south."

The late Major MacCudden, V.C., informed me that he

* Normally the velocity of the wind increases rapidly as one rises above the earth's surface, and it is fairly safe to assume that its strength will be at least doubled within the first 1500 ft. At greater elevations the rate of increase is usually not so rapid. An east wind generally attains its maximum strength at 3000 ft., but winds from other directions may increase up to 30,000 ft.

The direction of the wind also changes very considerably as one ascends. It almost invariably veers, that is to say, alters in a clockwise direction, as one rises. It is quite usual for the wind to veer 40° or 50° in the first few thousand feet, and with an east wind (which is often comparatively shallow) there is frequently a complete reversal of direction, the flow of upper air being from the west instead of the east.

These important facts are generally overlooked by writers discussing the effect of wind upon bird migration.

had seen a flock of Geese flying over Abeele, Flanders, at 9000 ft., and I have two other notes of occurrences at 8000 ft. and over, and one as low as 3000 ft.

The greatest height of which I have a record is 15,000 ft. Lieut. J. S. Rissen, of 57 Squadron, met with "two large birds" at this elevation when flying a D.H. 4, in August 1917, over the country lying between St. Omer and the coast. Rissen informed me that he was certain of the height, and, from his description, I should say the birds were most probably Cranes. Col. Portal also met with a large bird which may possibly have been a Crane, but I will quote from his letter so that the reader may judge on this point for himself:—

"One day—April 21st, to be exact—my observer and I saw an enormous bird at 8000 ft. flying north over Lens. We were at 6500 ft., and there was a thin layer of mist just above us. My observer hit me on the back, and I looked up to see a very big bird, about 7 ft. or 8 ft. span, flying straight above in the opposite direction. My observer thought it was a Heron, but I think it was an Eagle. . . . The wing-flap looked like that of an Eagle, and I am sure it was a bird with a very short tail, large rounded wings, and greyish brown in colour. It might have been any size from 6 ft. to 16 ft. across, but I put it down as about 8 ft."

A propos of the above, I might mention that a pilot who had flown many hours on the Salonika front told me he had several times met with Eagles in that district at about 6000 ft., and it was in this region that the French aviator Louis Noël shot two Eagles in the air from his machine with a shot-gun.

Passerine birds do not, as a rule, appear to fly very high, but Major B. J. Silly, of 55 Squadron, and his observer Lt. A. P. Taylor saw some "Linnet-like birds, with dipping flight," at 10,000 ft. over Béthune on 22 August, 1917.

"About fifty Rooks, Jackdaws, or Crows" were noted over Lens at 6000 ft. in March 1917, and "six birds about the size of Rooks" flying S.W. over Arras at 3000 ft. on 10 July, 1918 (Major F. C. Russell). I have a record of Starlings at 3500 ft. and another of Fieldfares or Red-

wings at a similar height seen March 1917 (Lt. O. B. Wills, 34 Squadron).

My second highest record is of some "Sandpipers" observed by Capt. E. Pope, 57 Squadron, over Arras towards the end of March 1917. These birds, "about the size of a Snipe," were flying eastwards at an elevation of 12,000 ft.

Other birds, somewhat doubtfully identified but which were very probably Limicoline species, were seen by Major Russell of 32 Squadron at 10,000 ft., and by Lieut. King of 43 Squadron at 9500 ft., the latter on 18 December flying in a southerly direction.

Early in March 1918 Col. Portal saw a party of what I imagine to have been Whimbrel, since he describes them as being "exactly like Curlews, only about two-thirds their size." These were at 4000 ft., travelling very fast over Lens in a north-easterly direction.

Hérons have been met with by Lieut. O. B. Wills at 3000 ft., and by Capt. S. Stammers between 2500 ft. and 3000 ft. The latter, a single bird flying in a north-westerly direction, was over the Crouch, Essex, in September 1916.

In fine, still weather birds will often ascend to considerable heights for apparently no other reason than mere *joie de vivre*. During the mid-summer months, towards the heat of the day, Swifts, and possibly to a lesser extent some of the Swallows, make a practice of rising to the cooler strata of air, and I have often met with *Apus apus* in the mountains at several thousand feet, while in Trinidad I have noticed that the local forms of Swifts regularly disappeared from the lower levels as the sun gained force.

The four records I have of Swifts or Swallows (my informants were not able to differentiate between these species) at heights varying from 2500 ft. to 3000 ft. were probably attributable to this habit rather than to migratory movements. The same may also be said of the Gulls met with by Major Leather (88 Squadron) at 3500 ft. in Scotland during the spring of 1917, and of the large numbers of Wood-Pigeons seen by Col. Portal "circling round" at 1500 ft.

XVIII.—Obituary.

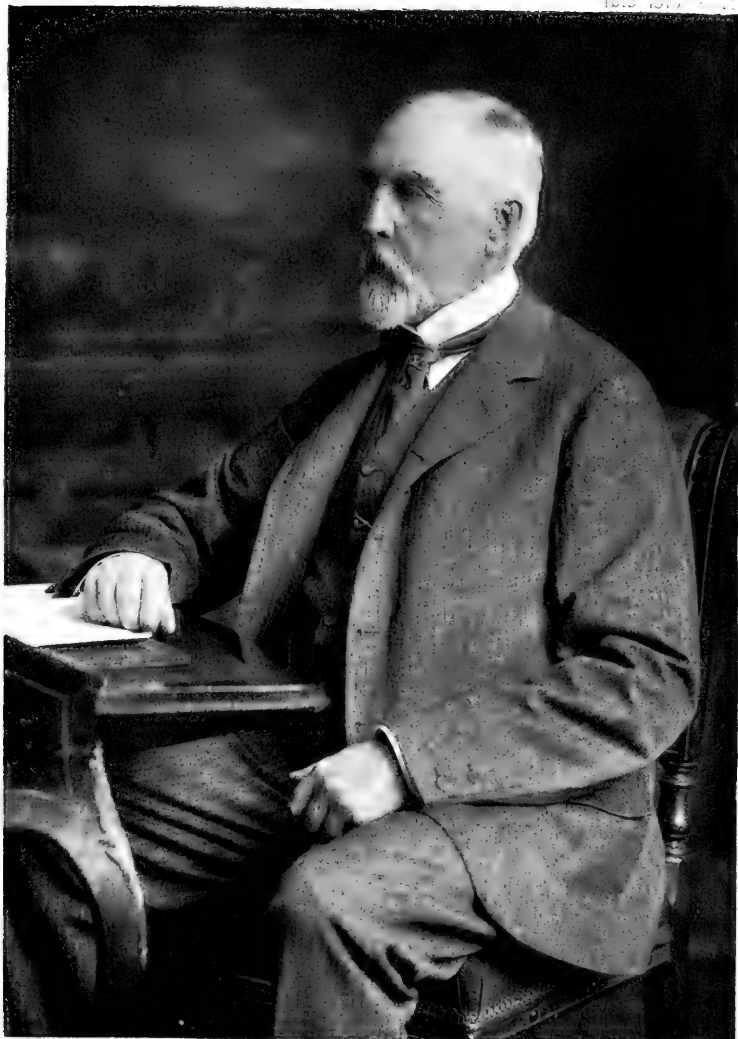
FREDERICK DU CANE GODMAN.

(Plate VI.)

It is with the deepest regret that we have to record the death of our late President, Mr. Godman, on the 19th of February last, after a short illness, at his house in Pont Street. Though for some years past he has not been in robust health, his magnificent constitution has brought him through several very severe attacks, and his death will be a great shock to his many friends.

Fred Godman, except for his younger brother Percy Godman, was the last survivor of the original twenty Members who formed our Union in 1858; a list of these names, drawn up in the handwriting of Prof. Newton, will be found reproduced opposite p. 21 of the Jubilee Supplement of 'The Ibis,' published in 1908. In addition to this Fred Godman served as Honorary Secretary and Treasurer of the Union from 1870 to 1882, and again from 1889 to 1897. In the latter year he was elected President to succeed Lord Lilford, and continued to hold office until 1913, when he resigned owing to ill-health.

Godman was born on the 15th of January, 1834, and was therefore in his 86th year when he died. His father was Joseph Godman of Park Hatch, near Godalming. He was educated at Eton, where he went at the age of ten, but on account of his delicate health, was removed three years later and continued his studies under private tutors. Before going to Cambridge he went for a tour in the Mediterranean and Black Sea, at which time he emulated Byron and Leander by swimming across the Hellespont from Sestos to Abydos. In 1853 he entered Trinity College, Cambridge, where he first met Osbert Salvin, at that time a scholar of Trinity Hall, and the brothers Alfred and Edward Newton, both of Magdalene College. His friendship with Salvin turned his thoughts more directly to Natural History, and thus was formed a unique scientific



In very truly
F. D. Godman.

partnership which lasted until the death of Salvin in 1898.

Godman and his brother Percy attended the meetings of the ornithologists in Alfred Newton's rooms in 1857 and 1858, when Edward Newton, Selater, Simpson (who afterwards took the name of Hudleston and was a distinguished geologist), Wolley, Salvin, Edward Taylor, and Tristram were also present, and when it was finally resolved to found the British Ornithologists' Union.

After leaving the University Godman began his more serious bird-collecting travels. His first expedition was to Bodö, in the north of Norway, in company with his brother Percy, in 1857, when he visited John Wolley in Lapland and travelled through Sweden and parts of Russia. An account of this journey appeared in 'The Ibis' for 1861. In his second journey he accompanied Salvin to Guatemala, where the latter had already been in 1857 and 1859. This expedition was planned in order to investigate the fauna and flora of Central America with a view of throwing some light on the problems of geographical distribution and its bearing on evolution, in which subject the recent publication of Darwin's 'Origin of Species' had aroused great interest.

After spending three weeks in Jamaica the two travellers landed at Belize in British Honduras, and thence, taking passage in a coasting schooner, reached Yzabal on the Golfo Dulce. Here they remained a few days, making preparations for the journey and engaging Indians and mules to transport themselves and their luggage to the interior.

Crossing the Mico range, a few days were spent at Quirigua, where the great Howling Monkey (*Myctes*) which frequents the dense forest in troops, making night hideous with its howls, was first met with. Some time was also spent in photographing the Indian ruins and exploring the forest in the vicinity. In those days there were no dry plates, and everyone had to carry with him the materials for preparing and developing his own plates, and the whole apparatus was exceedingly cumbrous and difficult to manage. From Quirigua the mule-track was followed through the

valley of the Motagua river to Zacapa and thence to Guatemala City. After a few days at the capital they proceeded to Dueñas, staying at the house of Mr. William Wyld, a friend of Salvin's. The time there was spent in collecting, chiefly in the high forests of the Volcan de Fuego, and in an excursion to Escuintla on the Pacific coast. They then retraced their steps to the capital, and crossing the Chuacus Range into the plain of Salama, stayed for a time at the Hacienda of San Gerónimo. Later on, at Cubilguitz, in the low damp forest of the Alta Vera Paz, Godman contracted a fever and was unable to accompany Salvin in his arduous journey on foot to Peten. Soon after this, visiting on his way the Alotepeque silver mines and the Copan ruins in Honduras, Godman reached the Atlantic coast again at Yzabal, meeting Salvin, who went back into the interior, while Godman himself came home.

Three years later Godman went to the Azores for the purpose of investigating the fauna and flora of those islands. Already the careful researches of Wollaston and others had brought to light many interesting forms from Madeira, the Canaries, and Cape Verde Islands, but the Azores had been but little explored zoologically. Accompanied by his brother, Capt. Temple Godman, and subsequently joined by Mr. Brewer, a well-known entomologist, he visited all the islands of the group except Santa Maria; he returned with a good representative collection of birds as well as of the other groups of animals. Among the birds was the new Bullfinch of St. Michael's, described and figured in 'The Ibis' for 1866 under the name of *Pyrrhula murina*. In 1870 he published the results of this expedition in book-form under the title of 'The Azores,' and also set forth his reasons for believing that the Azores had never formed a continent or part of a continent and had derived their fauna and flora from neighbouring lands, chiefly western Europe. The visit to the Azores was followed by one to the Canaries and Madeira in 1871, some account of which appeared in 'The Ibis' for the following year. Owing to quarantine regulations his movements were somewhat curtailed, and his investigations were limited to Tenerife and Madeira.

In the autumn of 1887, having been ordered abroad for the sake of his health, Godman visited Mexico to add to his collections from that country. In order, however, to gain full advantage from the expedition, he procured the services of Messrs. W. B. Richardson and Lloyd, who devoted their attention particularly to birds, and while Lloyd was working in the northern States, Richardson accompanied Godman himself to the southern tropical districts of Orizaba and Vera Cruz. Other assistants were Mr. & Mrs. H. H. Smith, who had previously been in Brazil, and a half-bred Indian, Mateo Trujillo, who proved to be a first-rate collector. A further excursion to Yucatan brought him in contact with Mr. F. Gaumer, a well-known collector, and enabled him to visit some of the celebrated ruins of that curious land.

Many other journeys were made by Godman, including one to India in 1886 in company with Mr. Elwes, and others to Egypt and South Africa with Mrs. Godman.

But we must now turn to the '*Biologia Centrali-Americana*,' without doubt the greatest work of the kind ever planned and carried out by private individuals and which must always be a monument "*aere perennius*" to the energy and munificence of Salvin and Godman.

The collections amassed by the two friends, together with a large library of books, were first of all stored in Salvin's house in Kensington. On Salvin's appointment to the Curatorship of the Strickland Collection of Birds at Cambridge, it was necessary to find another home for the Museum and Library. For this purpose a house in Tenterden Street, Hanover Square, was taken. Subsequently in 1878 the collections were moved to Chandos Street, Cavendish Square, where they remained until after Salvin's death, when they were gradually handed over to the British Museum.

It was in 1876 that the '*Biologia*' was first thought of, and three years later (September 1879) the first part appeared. The method of publication was to bring out six quarto parts a year, each to contain twelve sheets made up of various subjects with six coloured plates, the plates and letterpress so numbered and paged that the parts might ultimately be broken up and bound together in their respective volumes

when completed. It was originally proposed to issue the work in sixty parts, but owing to the ever increasing amount of material received from the collectors, the zoological parts alone numbered 215, and it was not until June 1915 that the last one was issued.

The work, as completed, consists of 63 volumes, of which one forms the Introduction, 51 are occupied with Zoology, 5 with Botany, and 6 with Archæology. The whole of it was edited by Salvin and Godman, and after Salvin's death in 1898 by Godman alone. The three volumes on the Birds and three others on the Diurnal Lepidoptera were prepared by Salvin and Godman themselves, while the others were written by various specialists. The volumes contain altogether 1677 plates, of which more than 900 are coloured, and the total number of species described is 50,263, of which 19,263 are described for the first time.

In 1885 Godman and Salvin resolved to present their wonderful Neotropical collections to the British Museum, and it was arranged that as soon as the portions of the 'Biologia' containing the descriptions of the particular group were published, the specimens should be transferred to the National Collection.

Of bird-skins alone over 520,000 were contained in this magnificent donation. It included not only the collections made by Salvin and Godman themselves chiefly in Guatemala, but many others from various parts of South America, the Mexican collections obtained by Godman himself and his collectors when in that country in 1887, and the great Henshaw collection of the Birds of the United States, containing over 13,000 specimens, which was secured by Godman in order to have a thoroughly authentic series of North American birds for comparison with those of Mexico and Central America.

In 1907 Godman determined to complete a plan which Salvin had contemplated of preparing a work on the Petrels and Albatrosses. Salvin, who had written the portion of the 'Catalogue of Birds of the British Museum' dealing with this group, had intended to supplement it by an illustrated

monograph, and with this end in view some forty coloured plates by Mr. Keulemans had been executed. Securing the help of the late Dr. Sharpe, Godman issued in parts between 1907 and 1910 this work, which added much to our knowledge and gave a great stimulus to the study of this little-known group.

Botany and horticulture were always favourite subjects with Godman, and at his country house near Horsham he had formed one of the most beautiful gardens in Sussex, and had one of the best collections in England of rhododendrons, alpine plants, and orchids. He also formed what is one of the finest collections of Persian and Oriental glazed pottery.

From his early days Godman exhibited an intense love of sport, which showed itself in the varied pursuits of hunting, fishing, shooting, and stalking. As a boy he kept a pack of beagles, and later on a pack of harriers, with which he hunted in the counties of Surrey and Sussex. He was also a constant follower of Lord Leconfield's hounds, and of those of his brother Col. C. B. Godman, for some years Master of the Crawley and Horsham pack. For many years he rented deer-forests in Scotland, and held Glenavon from the Duke of Richmond for eighteen years. He was also devoted to salmon-fishing, and rented rivers both in Ireland and Scotland.

Many honours fell to Godman. He was elected to the Royal Society in 1882. He was for many years Vice-President and Member of Council of the Zoological Society, President of the Entomological Society, Gold Medallist of the Linnean Society in 1918, and Trustee of the British Museum; and the University of Oxford conferred on him the honorary degree of D.C.L. He was also a Fellow of the Linnean, Geological, and Royal Geographical Societies.

Godman was a fine example of an English scientific country gentleman. He was devoted to open-air life, sport and travel, and he resolved to use his natural inclination and his large private means to the permanent advance of knowledge. His cheerful and kindly disposition made him universally beloved.

His first wife, a daughter of the late Mr. J. H. Elwes of Colesborne, Gloucestershire, died in 1875. His second wife, now Dame Alice Godman, D.B.E., is a daughter of the late Major Percy Chaplin, and survives him with two daughters.

We are indebted to Mr. H. J. Elwes, his brother-in-law, for the following personal appreciation of Mr. F. Godman:—

I first met Godman in 1866, when I joined the B. O. U., and ever since have looked on him as my best and dearest friend. I think that it was largely owing to his and Salvin's example that I was able to become something more than an egg-collector, and it was with Godman that I went in June 1866 to take a nest of the Honey-Buzzard, two or three pairs of which then bred annually in the New Forest. The story of the ingenious fraud which was unsuccessfully played on us by a notorious egg-collector, who was afterwards burnt to death at Stoney Cross, within a mile of the place where he showed us the nest, was known to many old Ibises now departed, and was a standing joke against us for years. Godman at that time was as keen a collector as John Wolley himself, and in company with his brother walked across Lapland from the Arctic coast to the Gulf of Haparanda after the summer which he spent at Bodö. A few years later he and I spent a month in company with Osbert Salvin and W. A. Forbes collecting butterflies in the Alps, and I can say that he had as much interest in that pursuit as he had in ornithology, and did much to encourage me in what I still look on as a most attractive branch of natural history. The collections which Salvin and he commenced in Guatemala gradually grew, till they became by far the most important that have ever been made from Central America.

Godman was always very fond of deerstalking, and in the sixties used to stalk annually in the "Park" of the Island of Lewis, which he rented in company with the late Mr. A. Bonham-Carter, and he became a most accomplished stalker and very deadly rifle-shot. Later on he rented the stalking of a large sheep-farm in West Ross-shire in company with

his brother Joseph, where they had grand sport with an old-fashioned Highland shepherd, who was a great character, and very fond of Godman. When asked by one of Lord Lovat's stalkers, who was jealous of their success, what sport they were having at Kilelan, he replied, "There is no a good stag coming on our ground, but he will go off on a pony." And later on, when Godman rented the Duke of Richmond's forest of Glenavon, he killed in his 70th year eight stags in one day with eight successive shots. He was also very fond of hunting, and though not what one would call a thrusting rider, was bad to beat in the Crawley and Horsham country, where he lived, and where his brother, Col. C. B. Godman, was for many years M.F.H.

In 1880 we made a short trip to India together, and after visiting the late Mr. Allan Hume at Simla, went to Sikkim and got as far into the interior as the snow would then allow. Even at this time Godman, though a very good walker, had a slight weakness in the heart, which was affected at very high elevations, and on one occasion, when we had to camp on a cold frosty night in a hut half full of snow at 12,500 feet, he was so much overcome by the exertion of climbing in the snow at this altitude, that for a time I was very anxious about his recovery.

When we were at Darjeeling, the only known specimens of that wonderful butterfly *Bhutanites lidderdalii* had been taken near Buxa Dooar, and Godman undertook a long and dangerous journey through the fever-stricken Dooars in order to try to find out exactly where it occurred. In this he failed, and it was only years afterwards that a better knowledge of this beautiful insect was obtained by the late Mr. Doherty in the Naga Hills (*cf.* P.Z.S. 1891, p. 249). Inspired by the voyage of the 'Marchesa,' Godman and I formed a plan about this time to make a journey to the Malay Islands, but this for various reasons was never carried out; and perhaps it was as well that his interest was never diverted from Central America, or his great life-work, the 'Biologia,' might never have been completed.

Later on he had a clot of blood in the veins of his leg,

which obliged him to winter in a warmer climate, and he went to Mexico in the autumn of 1887, where he asked Mrs. Elwes and myself to join him in the winter. He had the help of a very able American collector of birds and insects, and we had a good Mexican bird-skinner with us. We ascended the volcano of Popocatepetl to the limit of vegetation, and put up 60 good bird-skins as the result of one long day's collecting between 6000 and 12,500 feet.

Godman began about this time to be much interested in plants also, and collected orchids and other rare and interesting plants which he grew very skilfully at South Lodge, where he formed a most beautiful garden and built a rockery, which is second to none in the south of England.

South Lodge was originally quite a small house, on the south wall of which grew a very fine Camellia, which now covers almost the only part of the house which was left when it was rebuilt. He bought by degrees a good deal of land in the neighbourhood, much of which he farmed himself. I do not think any man ever had a happier life at home, or was more beloved by his numerous relatives, employés, and friends; and even when in later years his health began to fail, he was so carefully watched over by his devoted wife and daughters, and had such a genial and cheerful disposition, that he never lost his interest in his private or public pursuits and preserved his unvarying good temper and sweetness of disposition, through long periods of confinement to the house.

The number of persons of all ranks in life who followed him to the grave is the best testimony to the respect and esteem in which he was held by all who knew him.

List of the writings of Mr. F. D. Godman on ornithological subjects.

Notes on the Birds observed at Bodö during the spring and summer of 1857 (with Percy Godman). Ibis, 1861, pp. 77-92.

Notes on the Birds of the Azores. Ibis, 1866, pp. 88-109.

Natural History of the Azores or Western Islands. Pp. 1-238, 2 maps. London, 1870, 8vo.

- Notes on the Resident and Migratory Birds of Madeira and the Canaries. Ibis, 1872, pp. 158-177, 209-224.
- Description of two apparently new Species of Peruvian Birds. Bull. B. O. C. x. 1899, p. xxvii.
- A Monograph of the Petrels (Order Tubinares). Pp. i-lvi & 1-382, 103 pls. London (Witherby), 1907-1910, 4to.

With Mr. O. Salvin.

- On a Collection of Birds from the Sierra Nevada of Santa Marta, Colombia. Ibis, 1879, pp. 196-206.
- On the Birds of the Sierra Nevada of Santa Marta, Colombia. Ibis, 1880, pp. 114-125, 169-178, pls. iii., v.
- On an apparently new Species of Pigeon of the Genus *Otidiphaps* from Southern New Guinea. Ibis, 1880, pp. 364-366, pl. xi.
- On some new and little-known Species of Trochilidæ. Ibis, 1881, pp. 595-599, pl. xvi.
- Notes on Birds from British Guiana. Ibis, 1882, pp. 76-84, pl. i.; 1883, pp. 203-212, pl. ix.; 1884, pp. 443-452, pls. xiii., xiv.
- Description of a recently discovered Species of *Paradisæa*. Ibis, 1883, pp. 199-202, pl. viii.
- Notes on Mexican Birds. Ibis, 1889, pp. 232-243.
- On a new Finch of the Genus *Phœucticus* from Guatemala. Ibis, 1891, p. 272.
- Descriptions of Five new Species of Birds discovered in Central America by W. B. Richardson. Ibis, 1891, pp. 608-612.
- On a Collection of Birds from Central Nicaragua. Ibis, 1892, pp. 324-328.
- Biologia Centrali-Americana. Aves. Vol. I. pp. i-xliv & 1-512; Vol. II. pp. 1-598; Vol. III. pp. 1-510; Vol. IV., 79 pls. London (Porter), 1879-1904.

THEODORE ROOSEVELT.

The death of the Ex-President Theodore Roosevelt, which took place at his home, Sagamore Hill, Long Island, U.S.A., on 6 January last, when in his 61st year, cannot be passed over in the pages of 'The Ibis,' although he was never directly connected with the B. O. U. His services to ornithology were, however, very considerable, and we are very grateful to Lieut.-Commr. J. G. Millais, R.N.V.R., for the following eulogy of his life and work.

Nearly all ages and nations produce men of exceptional physical and mental capacity that tower above their fellows.

From youth upwards they exhibit a strong disposition to lead others and allow none of those obstacles that deter lesser creatures to obstruct the path of ambition and success. Theodore Roosevelt was one of these "super-men," and though born with advantages superior to the common lot, there was always the irresistible verve about him that carries others on and arrests attention. Even when reading his first writings in the 'Century' Magazine, where he describes how he captured two desperadoes in the heart of the Rockies and took them unaided in the depth of winter over hundreds of miles of desolate prairies to the nearest settlement where they could be tried and convicted, he exhibited the fact that he was not only a man of exceptional courage and resource but also one out to do his duty to his country. His rural life on the Little Missouri taught him many things, and above all made him a lover of the great out-of-doors with its birds, beasts, and virile men. Yet in all his life he always placed his sports and private tastes in a category subservient to the one aim and object of his life, which was to lead the people to better and higher things, to form the National policy of his country and to clean Government and private concerns of those undesirable elements which clog the wheels of all progress. That was why he attacked the meat-packers of Chicago and the rotten police system of New York; and if his detractors accused him of only stirring up the mud without cleansing the stables of Augeus, they forgot the honesty of purpose and the difficulty of achieving successful results in a land, at any rate at that time, seething with dirt and venal corruption.

Readers of 'The Ibis,' however, are more concerned with Roosevelt the Naturalist than Roosevelt the President or Social Reformer. From his childhood he told me he always loved birds and animals. By the time he was sixteen he knew all the birds of his early home and had studied the principal works of American Ornithology. When he was eighteen he went to Egypt and made a small collection of Nile Valley birds, which I think he afterwards presented to some museum. After this he does not seem to have

indulged in further collecting beyond superintending the work of his naturalists in the course of his big expedition to Africa.

As a matter of fact, his knowledge of American and African birds was very considerable, for he was so thorough in all he did that when undertaking any new project his method was to thoroughly study the literature of the subject, and this, combined with his marvellous memory, enabled him to begin his work better equipped than most men.

We have heard much of Roosevelt the talker and Roosevelt the Politician teaching all and sundry their business with equal confidence, but I think his greatest asset was hard work and a superb memory. He took trouble to make himself agreeable and well-informed, and seemed to know as much about other people's tastes and family history as they did themselves. I remember the first time I met him at a luncheon party at Lord Lonsdale's in 1908. He spoke in turn to nearly every man there and was cognisant of all their past history and activities, because I feel sure he had read it all beforehand. I suppose I was the only man he had not addressed, and just as all were leaving he came up to me and said, "I seem to know your face, who are you"? "Millais is my name," I replied. "What! Breath from the Veldt Millais," he said enthusiastically, "you've just got to sit down right here and have a chat. I don't know when I have been so pleased to meet anyone."

That was just the nice way he had of being agreeable, and if we did not have a chat, I listened at any rate for some twenty minutes with absorbed interest to his views of Nature and the Zoology of South Africa, of which he displayed, contrary to my expectations, a very considerable knowledge. He described Bustards, Plovers, Raptorial, Cranes, Francolins, etc. in a way that quite astonished me, although I knew he could not have seen them, and when I made some comment, he said he had read every work on the Birds and Mammals of Africa he could obtain at the

library at Washington before starting on his journey. It is one thing to read books, especially on birds, and quite another thing to remember all their contents, but I must confess that on this and subsequent occasions on which I had the pleasure of talking "birds" to Roosevelt the power of his memory filled me with admiration.

His views on modern nomenclature were somewhat surprising and not always consistent. At first he seemed to be inclined to favour the inclusion as subspecies of all local forms. This is borne out by his acceptance and even approval of the naming of the collections of the Roosevelt expedition, which included many new birds and mammals as subspecies which even the most enthusiastic advocates of local forms could scarcely accept. On the other hand, after due consideration and some time had elapsed he became a very orthodox "lumper," and laughed at the claims of the "splitters." The case in point which caused his conversion to the former group was, he told me, an occasion when he submitted the skulls of three bull *Bos caffer* which his party had shot out of one herd at one place in East Africa to Professor Matschie of Berlin. The learned zoologist in question pronounced them as the skulls of three different subspecies, giving each and all separate names.

More recently Roosevelt himself expressed his views on scientific nomenclature:—"The time has passed when we can afford to accept as satisfactory a science of animal life whose professors are either mere roaming field collectors or mere closet catalogue writers who examine and record minute differences in 'specimens' precisely as philatelists examine and record minute differences in postage stamps,—and with about the same breadth of view and power of insight into the essential. Little is to be gained by that kind of 'intensive' collecting and cataloguing which bears fruit only in innumerable little pamphlets describing with meticulous care unimportant new subspecies, or new species hardly to be distinguished from those already long known. Such pamphlets have almost no real interest except for the infrequent rival specialists who read them

with quarrelsome interest."—Introduction to 'Tropical Wild Life in British Guiana,' by William Beebe (1917).

Although it must be acknowledged that Roosevelt's favourites amongst wild creatures were the larger mammals, and especially the dangerous ones, which afforded opportunities in the excitement of the chase of thrilling moments, his delight in the birds of Africa and America always displayed the feelings of the true naturalist, whose chief instinct is not to slay but to sit down and study the ways of wild creatures in their natural homes. In spite of his abundant energy the President had also a reflective side to his character and a very real appreciation of all that is best in Art and Nature. He loathed what was false and untrue to life as sincerely as a man like Selous. As an instance of this, his excellent papers on the falsity of protective coloration are a good example, and did much to controvert the crystallized opinions of theoretical men of science, who for the most part had no knowledge of the action of Nature on the spot.

On occasion Roosevelt was inclined to be dogmatic and, as I have remarked, somewhat inconsistent. I remember once, after he returned from his African trip and his excellent book ('African Game-trails') had been published, giving me a lecture of about twenty minutes (with scarcely a pause to take breath) on the superiority of pictures done on the spot by a zoological artist over all forms of instantaneous photography. At last, when I managed to get a word in, it was impossible to refrain from saying, "If these are your opinions, why did you not take an artist with you instead of a photographer"? "Well, you have got me there," he admitted, laughing, "I could not have found the right man, and if I had it is doubtful if he would have come." "What was the matter with Carl Rungius? Did you ask him?" I suggested. There was no answer to this, for had Roosevelt taken Rungius to Africa with him we should have had a magnificent pictorial record of the larger mammals of Africa, which would have made his book one of permanent interest, and then we should have been spared that dreadful

series of bad portraits of the author standing in fatuous attitudes over mangled corpses of deceased hartebeests, lions, and zebras.

Roosevelt probably knew this himself, but his book was written for the man in the street, and so he perhaps felt that those horrible portraits were expected of him, but it only reminds us of Corney Grain's

"Choir-boy whose voice o'er-topped the rest,
Though very in-artistic, the public like it best."

Theodore Roosevelt was certainly one of the most remarkable men of this or any other time. In person he was the embodiment of physical fitness, being an expert rider and shot and skilled in most games. Mentally he was a giant whose broad vision ranged over a vast variety of subjects. At one sitting I have heard him discuss Big Game hunting, Bimetallism, Zoology, Geography, National Policy, European History, Botany, Palæontology, Archaeology, and ancient forms of religion, bringing to each and all a thoroughness, accuracy, wealth of detail, and breadth of criticism that was astonishing did we not know the extent of his reading and the power of his memory. His active brain was a complete bibliography of a thousand subjects, and at a moment's notice he could give you chapter and verse to which to refer in regard to any point at issue. No man living could have produced two such diverse volumes as 'Presidential Addresses and State Papers' and 'Through the Brazilian Wilderness,' and if we add to this his experience as a soldier and exposition of his New Bible, we can obtain some slight grasp of his mental and physical activities.

Amongst the successes of his life may be mentioned the impetus he gave to the research for the elimination of yellow fever in the Canal Zone, and what to naturalists was a work of great importance was his continuous advocacy of the preservation of the Fauna and Flora of the North American continent. In this he certainly achieved

a great measure of success, although in many instances we fear his efforts came too late.

Personally he was a man of charming disposition, full of thought for others, ever alive to better the lot of the unfortunate, and possessed of that kindly sympathy which we always associate with really great men. His attitude to us during the Great War was that of intense sympathy and understanding, and in him England has lost her best advocate for future policy as well as her best friend amongst the statesmen of the world.

THE MARCHESE GIACOMO DORIA.

We much regret that it is only quite recently that the news of the death of the Marchese Doria, which took place so far back as 19 September, 1913, has reached us. He was elected a Foreign Member of the Union so long ago as 1875, and was by many years the doyen of his class.

Born in 1840 at Spezia, of the historically celebrated race of the Dorias of Genoa, Giacomo Doria was educated under private tutors and at the University of Genoa. From his earliest youth he was a collector and observer in zoology and botany as well as a traveller. In 1862 he accompanied an Italian Mission to Persia with Lessona and Dr. F. de Filippi; the scientific results of this journey were published by the latter in his well-known '*Viaggio in Persia*.' Later, in 1865, he undertook with Beccari an expedition to Borneo, and with the collections thus amassed, together with others previously obtained, he founded the Civic Museum of Genoa. Not only did Doria provide the funds for the maintenance of this Museum, but through his munificence it was enriched with the collections from New Guinea made by Beccari, D'Albertis, and Loria, those from Burma made by Fea, and others from many other parts of the world, so that the Genoa Museum soon became the leading Zoological Museum of Italy.

To publish the results of his zoological explorations Doria founded the '*Annali del Museo Civico*' in 1870, forty-six

volumes of which have been published, again almost entirely at the sole cost of the founder,

The most modest of men, Doria himself wrote but little, and that chiefly on Mammals and Reptiles, but his munificence to natural science can never be forgotten.

In addition to his zoological activities Doria was a man of affairs, and in 1890 was chosen a Senator of Italy. He was also President of the Royal Geographical Society of Italy from 1891 to 1901.

LOUIS BRASIL.

We learn with deep regret of the death of Prof. Brasil, of Caen in France, on 15 October, 1918, at the comparatively early age of fifty-three. He was elected a Foreign Member of the Union in 1917.

Though born in Paris in 1865, Prof. Brasil lived most of his time at Caen, where he was brought up, where he obtained his education, and where his scientific career was carried through. He was Lecturer and afterwards Professor of Zoology in the University, and was for a period President of the Linnean Society of Normandy.

Prof. Brasil's writings were by no means confined to ornithological subjects. He published several papers on geological problems, while the thesis which gained for him the degree of "Docteur ès sciences" at the Sorbonne dealt with the digestive apparatus of Polychæte worms.

Later on the rich collections of the Museum of Natural History at Caen furnished him with material for work on the higher groups of the animal kingdom. He contributed several papers and short notes to the '*Revue Française d'Ornithologie*,' and in 1914 published a little work on the '*Shore- and Water-Birds of France, Belgium, and the British Islands*,' which was favourably noticed in our columns (Ibis, 1914, p. 326). He also wrote on the King Island Emu supposed to have been obtained by Péron, and other papers on the birds of New Caledonia, in which he was specially interested; while to our own pages he sent a little essay, written in very good English, on the

subject of *Turdus minutus* Forster (Ibis, 1917, p. 422). For Wytsman's 'Genera Avium' he prepared several fascicules dealing with the Cranes, Apteryges, Cassowaries, and Emus.

All Brasil's work was characterized by the qualities of order and precision, and he was a most careful and accurate writer.

His death, which took place at the Marine Laboratory of the University of Caen, at Luc-sur-mer, after a prolonged and painful illness, is a great loss to the somewhat sparse ranks of French ornithologists.

We have also to record the recent deaths of Mr. N. Chaplin, Mr. Frederick Sharman, and Mr. J. C. McLean, all Members of the Union. We hope to give further details in the next number of 'The Ibis.'

XIX.—*Notices of recent Ornithological Publications.*

Bangs on various birds.

[Notes on the species and subspecies of *Pæcilonitta* Eyton. By Outram Bangs. Proc. New England Zool. Club, vi. 1918, pp. 87-89.]

[A new genus of Caprimulgidae. Id., ibid. pp. 91-92.]

[A new race of the Black-throated Green Wood-Warbler. Id., ibid. pp. 93-94.]

[List of birds collected on the Harvard Peruvian Expedition of 1916. By Outram Bangs and G. K. Noble. Auk, xxxv. 1918, pp. 442-462.]

In the first note Mr. Bangs recognizes two forms of the Bahama duck: *Pæcilonitta bahamensis bahamensis* (Linn.), from the Bahamas, Antilles, Guiana, and northern Brazil, and *P. b. rubrirostris* (Vieill.) from southern South America (type locality, Buenos Aires). With the same genus he associates *P. galapagensis* Ridgw., *P. spinicauda* (Vieill.) from southern South America, usually associated with the genus *Dafila*, and *P. erythrorhyncha* (Gmel.) of Africa.

In the second note a new generic name *Veles* is proposed for a rare West African Nightjar, *Caprimulgus binotatus* Bp.

Mr. Bangs' third note proposes to recognize as a distinct new subspecies, *Dendroica virens waynei*, a form apparently resident and breeding in the primeval swamps of South Carolina, while the typical race *D. v. virens* is still in its winter quarters in Mexico or Central America. The breeding range of the typical form is in Canada and the northern part of the United States.

The last paper on the list is a more important one; it contains descriptions of a number of new forms, and taxonomic notes on others, based on a large collection of birds formed in the north-western corner of Peru by the junior author. It has already been noticed (*antea*, p. 144) in the general review of the 'Auk' for 1918.

Flower and Nicoll on Bird-protection in Egypt.

[The principal species of Birds protected by law in Egypt. By Capt. S. S. Flower and M. J. Nicoll. Pp. iv + 4, 8 pls. Cairo (Govt. Press), 1918. Price P.T. 5.]

In order to promote the preservation of insectivorous birds so important in agriculture, the Egyptian Government passed a stringent law in 1912, containing a list of those birds whose destruction was prohibited. This has already had great effect on the numbers of the Buff-backed Egret, which has since that date increased to a very marked extent, but some of the smaller and less conspicuous birds are still trapped and killed in considerable numbers.

In order to assist in the recognition of the protected species, the Ministry of Agriculture has issued this pamphlet prepared by Capt. Flower and Mr. Nicoll, in which a list of the forty principal protected species is given with their English, French, Arabic, and scientific names, their local status, approximate size and concise notes on coloration for the purpose of easy identification. On the eight accompanying plates, 24 of these species are illustrated by good and clear-coloured pictures reproduced by the Survey of Egypt. There will be no excuse, therefore, for the destruction of these valuable birds in the future.

Lönnerberg on a Linnean type.

[*Loxia hordacea* Linné 1758 is identical with *Euplectes flammiceps* Swainson 1837. By Einar Lönnerberg. Ark. Zool. Stockholm, xii. no. 3, 1918, pp. 1-5.]

The type of Linnæus' description in the 10th edition of the 'Systema' is still preserved in the Royal Natural History Museum at Stockholm. It was originally in the private collection of King Adolf Frederik and was preserved in spirit, whence it passed into the collections of the Academy of Sciences and to its present resting place. It was removed from spirit and mounted before 1840, when it was listed by Sundevall in a MS. catalogue of the birds in the Museum, so that its history is quite clear and authentic. Though not in first-rate condition it is quite easy to identify it with the bird now generally known as *Pyromelana flammiceps* (Swains.) found in tropical Africa, and Swainson's name must undoubtedly give way to Linnæus' earlier one.

The reason why the identification has not been previously made is owing to an unfortunate misprint in the diagnosis, where "temporibus albis" should without doubt read "temporibus atris," as pointed out by Dr. Lönnerberg.

That Linnæus also frequently used the words "fulvus" and "griseus" when he intended to describe red and brown respectively, is shown by Dr. Lönnerberg from the description not only of *Loxia hordacea* where there occurs "fulva sunt caput, collum, uropygium," meaning that these parts are red, but also in the case of many other birds.

Mathews on the Birds of Australia.

[The Birds of Australia. By Gregory M. Mathews. Vol. vii. pt. iv. pp. 321-384, pls. 352-362. London (Witherby), Dec. 1918. 4to.]

In continuing his account of the Cuckoos, Mr. Mathews brings out many interesting facts, though our knowledge of their life-histories generally leaves much to be desired, and in the case of *Lamprococyx lucidus* the winter quarters are absolutely unknown. The Channel-bill, the last species fully treated, is especially noticeable for its extraordinary

appearance and unusual habits, but "Bronze Cuckoos" occupy the bulk of this part of the work.

In regard to *Cacomantis pyrrhophanus* we are told that the type-locality is still uncertain, and that *insperatus* of Gould, *tymbonomus* of Ramsay and *brisbanensis* of Diggles, are mere synonyms. On the other hand, *dumetorum*, *variolosus* and *lineatus* are allowed subspecific instead of specific rank, as representing north-western, south-western, and Queensland forms. To these is added a new subspecies *vidgeni*, from Cape York, while the New Guinea forms may have to be separated.

Mr. Mathews' new genus *Vidgenia*, based chiefly on peculiarities in the immature bird, contains only the rare Chestnut-breasted Cuckoo, with no certain subspecies and an obscure life-history; the young bird is to be figured shortly.

Another rare Cuckoo is *Owenavis osculans* (*Misocalius auctt.*), wrongly identified by Cabanis and Heine with *palliolatus* of Latham. Here a subspecies, *rogersi*, may possibly be allowed in the north-west.

The author no longer presses for the adoption of *Neochalcites* for *Chalcites* in the case of the Narrow-billed Bronze Cuckoo, well known under the name *basalis*, while he recognizes as subspecies *mellori*, *wyndhami* and *modesta*. Many good notes on its habits are cited.

Four species are allotted to *Lamprococcyx*, viz., *lucidus*, *plagosus*, *minutillus* and *russatus*, though it is possible that the first two are only subspecifically different, especially if Mr. Mathews' suggestion that they are really sedentary in New Zealand and Australia respectively proves to hold true. The relation between the remaining pair is still more complicated: *minutillus* is synonymous with *malayanus* of Shelley, while *russatus* is now found not to belong to the *basalis* group, as the author formerly believed, and *barnardi* is relegated to a subspecies. *L. plagosus* has the subspecies *carteri* and *tasmanicus*. Tails of all these species (and of *barnardi*) are figured for comparison.

The well-known Koel (*Eudynamis orientalis*) presents no

difficulties, for the Australian form (*flindersi*) is only sub-specifically separable, while *cynocephalus* and *subcynocephalus* are admitted as subspecies from Queensland and northern Australia respectively. The Channel-bill (*Scythrops novæhollandiæ*) has a western form, *neglectus*: the endemic Coucal is termed *Polophilus* Leach, in preference to *Centropus*.

Riley's recent papers.

[A new Bullfinch from China. By J. H. Riley. Proc. Biol. Soc. Washington, vol. 31, 1918, pp. 33-34.]

[Two new genera and eight new birds from Celebes. Id., ibid. pp. 155-160.]

[Annotated Catalogue of a collection of birds made by Mr. Copley Amory Jr. in north-eastern Siberia. Id., Proc. U.S. Nat. Mus. vol. 54 1918, pp. 607-626.]

The new Bullfinch, named *Pyrhula erythaca wilderi* after Mr. G. D. Wilder, who captured it in the mountains of the Chili Province, China, differs from the typical race in its smaller size and in some particulars of its coloration.

The new birds from Celebes recently collected by Mr. H. C. Raven are:—*Caprimulgus affinis propinquus* and *Collocalia vestita enigma* subsp. n.; *Rhamphococcyx centralis*, *Lophozosterops striaticeps*, *Cataponera abditiva*, and *Cryptolopha nesophila* spp. n.; *Coracornis raveni* and *Celebesia abbotti* genn. et spp. n. are believed to be sufficiently distinct to warrant the creation of new generic names; *Coracornis* is apparently allied to *Pachycephala*, and *Celebesia* to *Malindungia* Mearns.

While on a business mission to the Kolyma river region of north-eastern Siberia in 1914, Mr. Copley Amory made a good collection of 228 specimens of birds which he presented to the National Museum at Washington. A collection made by Mr. Koren in the same region has been reported on by Messrs. Thayer and Bangs, so that there are no novelties among Mr. Amory's birds, but Mr. Riley has been able to make interesting taxonomic remarks on some of the species, and the collector has added some useful field-notes.

Shufeldt on the Hoatzin.

[Notes on the osteology of the young of the Hoatzin (*Opisthocomus cristatus*) and other points on its morphology. By R. W. Shufeldt. Journ. Morphology, vol. 31, 1918, pp. 599-606; 4 pls.]

In a short paper Dr. Shufeldt presents us with the results of his examination of several subadult and one young specimen of this curious and interesting type. Two of these have been prepared as skeletons which are described at some length, while the other specimens have been studied as regards their pterylosis. The most striking character of the skeleton of the young *Opisthocomus* is the enormous size of the feet as compared with the rest of the body, but beyond mentioning a general resemblance in some respects to the Game-birds, Dr. Shufeldt does not indicate any further clues to the relationships of this remarkable bird.

Taverner on Canadian Hawks.

[The Hawks of the Canadian Prairie Provinces in their relation to Agriculture. By P. A. Taverner. Ottawa Museum Bull. no. 28, 1918, pp. 1-14; 4 col. pls.]

In this useful little brochure Mr. Taverner reviews the commoner Hawks of the western Provinces of Canada from the economic point of view, and in order to assist in their identification a series of eight small coloured illustrations accompany the article. The destruction of birds of prey has generally been indiscriminate, and has often been stimulated by the payment of bounties by the Government. The only Hawks which are condemned by Mr. Taverner are those of the genera *Accipiter* and *Astur*, and of these the American Goshawk (*Astur atricapillus*) is undoubtedly a confirmed chicken and grouse thief. Mr. Taverner states that the normal range of this bird is along the northern limit of intense cultivation and that its usual food is the Varying Hare. This animal increases annually until it becomes very numerous, and with it the Goshawk and other rabbit-eating animals increase too. Eventually a contagious disease spreads among the hares, and the Goshawks turn their

attention to game-birds ; moreover, they move to the southern prairie districts and do much damage to the game-birds and the poultry-runs.

The other Hawks, including the Buzzards, usually known as Red-tails, live chiefly on Gophers, those little fossorial burrowing rat-like animals which do enormous damage to agriculture, and these birds should be most strictly preserved in the opinion of Mr. Taverner.

Wetmore's recent papers.

[Duck sickness in Utah. By Alexander Wetmore. U.S. Dept. Agr. Bull. no. 672, 1918, pp. 1-25; 4 pls.]

[Birds observed near Mico, Central Oklahoma. Id., Wilson Bull. Chicago, no. 102, 1918, pp. 2-16.]

[The birds of Desecheo Island, Porto Rico. Id., Auk, xxxv. 1918, pp. 333-340.]

[Description of a new subspecies of the Little Yellow Bittern from the Philippine Islands. Id., Proc. Biol. Soc. Washington, vol. 31, 1918, pp. 83, 84.]

[On the anatomy of *Nyctibius*, with notes on allied birds. Id., Proc. U.S. Nat. Mus. vol. 54, 1918, pp. 577-586; 7 text-figs.]

[Bones of birds collected by Theodoor de Booy from Kitchen Midden deposits in the Islands of St. Thomas and St. Croix. Id., *ibid.* pp. 513-522.]

For the last eight or nine years the wild-ducks and other shore-birds of Great Salt Lake in Utah, as well as those of some of the other western lakes, have suffered very severely from a mysterious disease, and for three years Mr. Wetmore was detailed by the Biological Survey at Washington to investigate it. The birds suffered most during the summer season, at a time when the rivers running into the lake were at their lowest, and the symptoms of the disease indicated in a large part, a paralysis of the nerve-centres controlling the muscular system. The birds perished by the ten thousand, and lay dead in heaps along the marshes of the lower channels of the rivers.

After considerable investigation Mr. Wetmore came to the conclusion that the trouble was due, not to any bacterial or protozoan disease as was for long supposed, but to the

toxic action of certain soluble salts found in alkali, chiefly chlorides of calcium and magnesium. During the summer months, when but little fresh water comes down the rivers, the pools on the mudflats where the ducks feed become so strongly impregnated with these salts that the birds' intestines are no longer able to perform their proper functions. That this is the true cause is shown by the fact that when the sick and dying birds were collected and placed in pens and given fresh water to drink, they rapidly recovered. Mr. Wetmore states that the remedial measures which promised success in dealing with the trouble are : (1) Increasing the supply of fresh water in the streams, which, however, is not very feasible as all the water available is required for irrigation higher up the streams ; (2) Draining the affected areas ; (3) Collecting the sick ducks for treatment. The whole subject is exceedingly interesting and is most clearly and successfully dealt with by the author.

The second paper is chiefly of local interest, containing a list of 62 species of birds found in Oklahoma, a State of the "middle west," the bird-life of which is not very well known as compared with other portions of the United States.

Desecheo Island is only about one and a quarter by three quarters of a mile in size and lies between Porto Rico and San Domingo. Mr. Wetmore spent three or four days there in June 1912. It is very dry and hot and there are no springs. Mr. Wetmore records the occurrence of eleven species, the most abundant of which is the Booby (*Sula leucogastra*), which nests on the island in very large numbers. The Noddy, *Anous stolidus*, and the Bridled Tern, *Sterna anæthæta*, also breed there.

The new Bittern from the Philippines is a form of *Ixobrychus sinensis*, and is called *I. s. astrologus* from its habit, common to all Bitterns, of star-gazing.

But little has been published on the anatomy of *Nyctibius*, a genus of aberrant Nightjars confined to the Antilles and South America. Mr. Wetmore has been able to examine the body preserved in alcohol of the type-specimen of *N. griseus abbotti*, lately described from Haiti, and adds a

number of additional facts in regard to its anatomy, previously unknown, especially with respect to the single carotid artery, the small size of the left lobe of the liver, the number of cervical vertebræ, and the tongue. After tabulating the anatomical characters he comes to the conclusion that *Nyctibius* should form a family group placed between *Podargus* and the Caprimulgidæ, and rather more distantly related to *Steatornis*.

The last paper on the list consists of the results of the examination of a number of bird-bones from the kitchen-middens of St. Thomas and St. Croix in the West Indies. Most of the bones belonged to sea-birds, but there were several of the domestic fowl, showing that some at any rate of the bones were of comparatively recent origin. On a tibia and tibio-tarsal bone Mr. Wetmore describes a new generic type of Rail, apparently allied to *Aramides* and *Gallirallus*, which he names *Nesotrochis debooyi* gen. et sp. n.

Witherby's new book on British Birds.

[A practical Handbook of British Birds. Edited by H. F. Witherby, F.Z.S., M.B.O.U. Authors of the Various Sections: Ernst Hartert, Annie C. Jackson, Rev. F. C. R. Jourdain, C. Oldham, Norman F. Ticehurst, and the Editor. Part I. Pp. i-xvi+1-64; 2 pls., many text-figs. London (Witherby), March 1919. 8vo. To be published in 18 parts at 4s. net per Part.]

Yet another book on British Birds, will doubtless be the remark of many on seeing the announcement of Mr. Witherby's new work. There are certainly few subjects on which so many books have been written, and of late a year seldom passes without the publication of one or more additional ones.

Mr. Witherby claims, however, for the present work several new features not hitherto found in books on British Birds. These are originality of plan, practical utility and accuracy of detail. The first feature not usual in British bird-books, though usual in those dealing with the avifauna of other lands, is the keys, which certainly are of very

great assistance, both to the tyro as well as to the specialist, in the identification of unknown birds, though, of course, such aids must be used with caution, as is clearly explained in the introductory note. The nomenclature and synonymy is that of the 'Handlist of British Birds,' published by four out of the six authors of the present work in 1912, with such emendations as have come to light since. For this portion of the work and the keys Dr. Hartert is primarily responsible.

The descriptions are very detailed, and the sequence and moult of plumage from nestling to adult are given at length. These are the province of Mr. Witherby and Miss Jackson, the last-named being specially concerned with the Ducks and Waders.

Two unusual sections are those dealing with the characters of the allied subspecific forms inhabiting other portions of the Palæarctic region and the field-characters, in which hints are given for distinguishing birds in their native haunts. The former subject is dealt with by Dr. Hartert, the latter by Mr. Oldham, who also writes on the flight, notes, and social habits.

Nesting- and food-habits form separate sections and devolve on Mr. Jourdain, while migration falls to Mr. Ticehurst.

The scheme, therefore, is essentially a practical and utilitarian one, and there is little room for literary grace or polish; the sentences are clipped and shortened in every possible way.

In the present part is one coloured plate illustrating the juvenile plumage of some of the Finch family, and another in black and white, showing the gradual loss of the feathers on the "face" of the Rook. There are also a large number of text-figures of heads, feet and wings to assist in identification. These are all excellent and most useful. We would make one criticism in regard to the top figure on p. xiv, which illustrates the method of measuring the bill from its tip to the "base of the skull." This latter phrase appears to us very misleading. The base of the skull is

obviously the occipital region which surrounds the foramen magnum, and the phrase can by no manner of means be used for the point where the horny epidermal maxillary sheath merges in the soft epidermis.

The present part, the first of eighteen, deals with the Corvidæ and a portion of the Fringillidæ. Our only fear is that the work, when completed, will be too bulky for convenience. Two volumes of 600 pages each cannot be comfortably carried about. To our mind a book of this very practical kind should be rigorously cut down to a size convenient for travelling, and though perhaps it is too much to expect to take it around in the pocket, it should be possible to transport it in a rucksack. We doubt if it would be easy to do so in the case of the present work when completed.

We await with interest the issue of the rest of the parts, and we feel sure that the work, when completed, will prove of the greatest value to all working ornithologists.

Bird-Lore.

[Bird-Lore: a bi-monthly Magazine devoted to the study and protection of birds. Vol. xx. Jan.-Dec. 1918; 6 nos. Harrisburg, Pa., U.S.A.]

'Bird-Lore,' so ably edited by our Honorary Member Mr. Frank Chapman, keeps up its reputation as the leading popular magazine dealing with birds. As it is the official organ of the Audubon Societies, which now exist in nearly every one of the States of the Union and which are devoted to the preservation and conservation of bird-life, a large portion of the matter contained in each volume deals with the propaganda necessary to carry on this work, which has done so much to preserve for future generations the previously rapidly disappearing birds of North America.

So elaborate are the devices now used by American bird-lovers to encourage and attract birds to frequent their gardens and grounds in the matter of feeding-trays, nesting-boxes, and the plantation of special shrubs and bushes for shelter, that Mr. Oldys finds it necessary to

write a special article protesting against the supposed danger of "pauperizing bird-life."

The present volume is illustrated with many beautiful photographs, and also with a series of coloured plates by Mr. L. A. Fuertes of different groups of American birds. Two of the numbers have a plate of Tanagers, the other four illustrate the Cedar-birds and Waxwings, the Shrikes, the Horned Larks, and the Magpies, and each plate is accompanied by an article on the plumages of the birds by the Editor, and one on the migrations by Mr. Oberholser.

For the past five years Mr. R. H. Beck has been collecting and studying marine birds off the coasts of South America for Messrs. Brewster and Sanford, and some fine photographs of bird-life in the Falkland Islands are reproduced in the present volume. Other articles illustrated by photographs are by Mr. H. E. Tuttle on the nesting of the Nashville Warbler, and by Mr. C. W. Leister on the Black-billed Cuckoo which, it is hardly necessary to remind our readers, is not parasitic.

One of the great features of 'Bird-Lore' is its annual Christmas Census. By the help of numerous readers and contributors a count is taken throughout the States and Canada of all the birds observed on Christmas day each year. The results of the eighteenth of these combined observations is contained in the Jan.-Febr. no. of 'Bird-Lore,' and occupies twenty-five pages. As showing the genial climate of southern California, at Los Angeles no fewer than 106 species were observed within a radius of fifteen miles of the town.

After the entrance of the United States into the war, Mr. Frank Chapman, the Editor of 'Bird-Lore,' was appointed by the War Council at Washington to the post of Red Cross Commissioner to South America, and on 3 October last he left the United States on an extended journey through the South American Republics in the interests of Red Cross work. The Nov.-Dec. no. contains the first of what will doubtless prove to be a most interesting series of ornithological letters on his expedition.

Bird Notes.

[Bird Notes. The Journal of the Foreign Bird Club. Edited by Wesley T. Page. Ser. 3, vol. i. Jan.-Dec. 1918.]

Last year's volume of 'Bird Notes,' though perhaps not so stout as some of the preceding ones, contains a number of useful and instructive articles on avicultural subjects. One of the principal contributors is Mr. W. S. Baily, who writes on the Grey Plover, Quails, Parrots, and the Patagonian and Egyptian Geese. He has also a good description of the colour-changes, as he calls them, of the Whydahs, *Coliostruthus laticauda* and *Drepanoplectes jacksoni*. In captivity, at any rate, these changes can hardly be called seasonal, as they recur irregularly, nor indeed does the lack of the so-called nuptial plumes in any way interfere with the breeding of these Whydahs, but of course this may be due to the interference caused by change of habit. There are also a number of practical notes by the editor on the planning of aviaries and other such subjects. The Marquis of Tavistock writes on the Australian Grass Parakeets and deplores their early extinction in their native land. The Splendid (*Neophema splendida*) appears to be already gone and the allied form, the Turquoise, and others appear to be on the verge. Can nothing be done to save the native Australian avifauna?

Dr. Hopkinson concludes a series of articles on the Whydahs, which he commenced in the previous volume, and has now begun an elaborate list of all the birds which have been known to breed in captivity in the British Islands or abroad, with full references to the original account.

Among shorter articles is one by Mr. H. Whistler containing his observations on the nesting and other habits of *Lieptila capistrata* near Murree, a Himalayan hill-station; and Mr. E. W. Harper sends two very interesting photographs of Vultures, which congregate in enormous numbers at a spot a few miles outside the limits of Calcutta, where the bodies of dead horses and cattle are partially made use of. Though there are no coloured plates in the present volume, there are some pleasing uncoloured plates reproduced from

drawings from life by Mrs. A. M. Cook, especially those of Diamond Finches (*Steganopleura guttata*) and Spice-Finches (*Munia punctulata*). These are a relief from the eternal photograph.

The Condor.

[The Condor. A Magazine of Western Ornithology. Vol. xx. nos. 1-6, 1918. Published bi-monthly by the Cooper Ornithological Club, Hollywood, California.]

The 'Condor' for last year contains a number of good papers, generally illustrated by photographs, though perhaps these are not so numerous as of old. Even in far western America the pinch of war has penetrated.

Mr. J. A. Munro opens the volume with an account of the nesting and other habits of Barrow's Golden-eye in the dry, fruit-growing district of Okanagan in British Columbia. They generally make use of an abandoned Flicker's (*Colaptes*) hole in a dead pine-stump, near a lake, for their nest. For the winter they leave the cold interior of the country and resort to the warm waters of Puget and other inlets along the mild coast of the Pacific. Mr. W. C. Bradbury contributes three articles on the nesting-habits and eggs of three well-known species of Colorado birds of whose nidification but little is known. These are the White-throated Swift *Aëronantes melanoleucus*, the Plover *Podiceps montanus*, and the Rocky Mountain Jay *Perisoreus capitalis*. The Swift nests in crevices of cliffs in the Rocky Mountains difficult of access, the Plover on the plains, and the Jay at altitudes of 8000 to 10,000 feet in the mountains, late in April, where it builds in the Lodge-pole Pine. Other articles dealing with local faunas are by Mr. H. S. Swarth, by Messrs. R. W. Quillin and R. Holleman, and by P. A. Taverner on districts in Arizona, Texas, and British Columbia respectively.

To the already very numerous races of the Fox-Sparrow, Mr. J. Mailliard adds another, the Yolla Bolly Fox-Sparrow *Passerella iliaca brevipcauda*; while Mr. W. C. Oberholser

distinguishes two races of the Humming-bird known as *Cyanolæmus clemenciæ*, the typical form being confined to south-west, central, and southern Mexico, while the new subspecies, *C. c. bessophilus*, breeds in south-western United States and north-western Mexico. He also proposes to separate the resident Shrike of Lower California under the name *Lanius ludovicianus nelsoni*, subsp. n.

Lyman Belding, the oldest American ornithologist, who came to California in 1856, died in October 1917. A memoir by Mr. W. K. Fisher, with a portrait, tells us of his early adventurous life in whaling and other ships before he settled in California. His first paper, "A partial list of the Birds of Central California," was published in the Proc. U.S. Nat. Museum in 1879.

The early history of Costa's Humming-bird, *Calypte costæ*, collected by Nebouse and named by Bourcier in 1839 in honour of Costa, has always been somewhat shrouded in mystery. Much of this is disentangled in a short article by Mr. T. S. Palmer, who also fixes its type-locality at Magdalena Bay in Lower California.

Other important articles in this volume of the 'Condor' have already been dealt with as "separates."

Fauna och Flora.

[Fauna och Flora. Populär Tidskrift för Biologi. Utgifven af Einar Lönnberg. 13 vols., for the years 1906-1918. Uppsala and Stockholm.]

We should like to draw the attention of the readers of 'The Ibis' to this excellent popular Journal of Natural History, edited by our foreign member, Dr. Lönnberg, who has most generously sent to us a complete set from the commencement. In order that it may be more generally accessible, the volumes have been deposited in the General Library of the Natural History Museum, where they can be consulted by anyone making the necessary application.

As its title implies, 'Fauna och Flora' deals with both zoological and botanical subjects; it has a considerable proportion of articles of interest to ornithologists, dealing

not only with local Swedish observations, but also with others of more general interest, and is illustrated with appropriate photo-blocks.

In the volume for 1918, Count Nils Gyldenstolpe, the well-known Swedish explorer of Siam, writes at length on the fauna of that country, dividing it into faunal regions, and illustrates the characteristic scenery of each with photographs. A general review of the mammals and birds, with lists of species, makes a valuable contribution to our knowledge of the fauna of that comparatively little-known State.

A well-known Finnish naturalist, Mr. E. Merikallio, writes on the distribution of *Carpodacus erythrinus* in Finland, and Mr. C. O. G. Wibom on abnormalities in the Capercaillie; Mr. R. Söderberg on the birds occurring near Hornborgasjön in Gothland, and Dr. Lönnberg himself on Linnet \times Siskin hybrid; Mr. Granvik has recently found *Acrocephalus arundinaceus* breeding in southern Sweden and publishes a photograph of the site and nest.

Of more general interest, perhaps, is an article by Mr. A. Heintze on bipolarity in plants. He suggests that the existence of certain northern Alpine plants at the southern extremity of South America may be due to the migrating birds by whom the seeds may have been transported from the north to the south.

It is suggested by Mr. A. Adlersparre that the well-known Australian Weaver-finches *Poëphila gouldiæ* and *P. mirabilis* may be merely fortuitous variations and not distinct species; while, finally, on page 281, is an interesting note by the editor on the capture of a Ring-Dove in Portugal which had been ringed in southern Sweden.

Irish Naturalist.

[The Irish Naturalist. A monthly Journal on general Irish Natural History. Vol. xxvii. Jan.-Dec. 1918.]

As regards papers on birds the 'Irish Naturalist' for last year is distinctly disappointing. Apart from the short notes of no great importance there are only two

contributions on ornithology. One of these by Mr. W. H. Workman deals with the migration of Woodcock, and is based on Captain Douglas' paper on the same subject published in the 'Proceedings of the Zoological Society' for 1917. The investigations were conducted on the estates of Colonel W. W. Ashley, M.P., in co. Sligo, and large numbers of breeding birds were ringed. A considerable proportion of these were recovered on the estate in the immediate neighbourhood of the place of ringing, and there can be no doubt that the greater number of the birds bred on the estate are non-migratory and resident; in addition there are a good many which arrive from the north for the winter months, and a third category is formed by those which are bred on the estate and migrate southward.

The other bird-paper is by Mr. J. P. Burkitt, and deals with some interesting observations he has made on the subject of the return of the same individual pair of birds to the same nesting-spot each year. He also writes at considerable length on the subject of "frame-nests," in some cases known as "cocks' nests." These nests never have any lining, and Mr. Burkitt believes that they are constructed by unmated cock birds. In some cases later on a mate is obtained and the nest is at once completed, and the eggs laid and incubated. Mr. Burkitt's observations were made chiefly on the Whitethroat and the Wren.

Journal Nat. Hist. Soc. Siam.

[The Journal of the Natural History Society of Siam. Vol. ii., nos. 1-5, June 1916-May 1918, edited by Malcolm Smith and W. J. F. Williamson.]

The editors of this Journal and the Anglo-Siamese community of Bangkok deserve all congratulations on the completion of their second volume, which contains many papers on various subjects of zoology and botany relating to Siam. The most important contribution relating to ornithology is the junior editor's list of the birds of Bangkok, of which two instalments appeared in the previous volume, and two are now added, bringing the list,

which is arranged in the order of Oates and Blanford's Fauna, to the end of the Hoopoes. A short description, with a note on the habits and distribution in Siam together with the Siamese name in the English and vernacular script, is given in the case of each species. Mr. Williamson also contributes several shorter notes, one of which contains an account of the rare Ibis, *Thaumatibis gigantea*, only four examples of which are known. The last one of these was obtained by Mr. K. G. Gairdner at Ban Tup Takoh in Siam in March 1913 and is now mounted and exhibited in the British Museum (Natural History). A photograph of this mounted example accompanies the note.

In another short paper Mr. C. B. Kloss describes two new forms of the large red-shouldered Indian Parakeet, viz. *Palæornis eupatria avensis* from Cachar and Burma, and *P. e. siamensis* from eastern and central Siam.

Revue Française d'Ornithologie.

[Revue Française d'Ornithologie, Scientifique et Pratique. 10^e Année, Nos. 105-116. Jan.-Dec. 1918.]

It is a matter for considerable congratulation to M. Menegaux that he has been able to keep his monthly journal of ornithology going through the late period of stress and strain, and we trust that now it may continue to flourish and increase. The articles contained in last year's volume are numerous and interesting, dealing with all phases of our science, and we can only mention a few of them in this short notice.

M. Menegaux himself has a paper on a small collection of birds from the Senegal and Niger rivers, among which are three species, new for the French Sudan, and several scarce ones; among them is *Cerchneis alopec* and *Thamnolea sub-rufipennis*. Another paper by the same author, with field-notes by the collector M. van Saceghem, deals with some birds from the estuarine portion of the Congo basin, and this collection is destined for the Congo Museum at Tervueren; while a third, also by the Editor, gives a list of a collection from the Misiones Province of Argentina made

by M. E. Wagner in 1910. Another faunal list is that of Dr. Millet-Horsin, of birds met with by him near Frejus on the Riviera coast.

There are two short papers by M. P. Bédé, in one of which he shows that *Rhamphocorys clot-bey*, chiefly met with in the Sahara, ranges as far north as Mezzouna not far from Sfax in Tunisia; in the other he discusses the Black-eared and Black-throated Wheatears, which he believes must be considered distinct species. We would draw his attention in regard to this point to Major Sladen's remarks (*supra*, p. 235).

M. Bon brings forward evidence of *Clamator glandarius* occasionally breeding in the south of France, where it has been said to occur only as a rare visitor; and M. A. Bouvier records the capture, more than a hundred years ago, of *Trichodroma muraria* in a Parisian garden, some considerable distance to the north of its usual range. M. A. Blanchet adds *Terekia cinerea* and *Prunella collaris* to the fauna of Tunisia for the first time.

Among general articles Dr. F. Cattelin contests the usual view that Swallows and other migrants always return to the same nesting-place each spring, and Prof. R. Dubois discusses the subject of colour-blindness and colour-vision among birds. Finally, we notice an article by Capt. J. N. Kennedy on the birds of the valley of the Ancre on somewhat similar lines to that which he recently contributed to 'The Ibis.'

Rivista Ital. di Ornitologia.

[*Rivista Italiana di Ornitologia.* Anno iv.—1918.]

We rejoice to find that our Italian friends have found it possible to recommence the publication of their ornithological journal, which has been suspended since early in the war-time. It is now edited by Count Arrigoni degli Oddi with the assistance of F. Cavassa, Prince F. Chigi, A. Ghigi, and Count Salvadori.

The present number commences with a memoir and bibliography, accompanied by a photograph, of Prof. Martorelli,

a Foreign Member of the Union, whose sad death has already been noticed in our pages.

A review of some of the South American Rails of the genus *Creciscus* from the pen of Count Salvadori follows. He recognizes three species:—*C. cayanensis* (Bodd.), *C. facialis* (Tsch.), and *C. pileatus* (Wied). Signor G. A. Carlotto records the capture of an example of the north African *Cursorius gallicus* near Verona, and Signor A. Trischitta of *Fratercula arctica* near Messina. Some bird-notes from the Province of Friuli are contributed by Sig. Vallon; and Sig. Ghidini, who we regret to see has recently died, describes and figures the skull of a hybrid *Tetrao tetrix* × *T. urogallus*, killed in the Val di Blenio in the Ticino district.

Finally, a number of shorter notices and reviews completes a part which we hope will now be regularly followed by others of equal interest.

Scottish Naturalist.

[The Scottish Naturalist. Edited by William Eagle Clarke, LL.D., William Evans, and Percy H. Grimshaw. Vol. for 1918, Nos. 73–84.]

The completed volume of the 'Scottish Naturalist' has a number of articles dealing with Scottish Ornithology, among which we will mention some of the more important. The Rev. J. M. McWilliam sends some stray notes on the birds of Bute, and comments on the fact that he hardly ever observed land-birds crossing the very narrow seas from that island to the mainland, except, of course, during the regular migration season. The one exception noticed was the regular daily passage of Rooks and Jackdaws from the Craigmore shore to Toward in Argyllshire, a distance of about two miles. They leave Bute from 9 to 10 A.M. and return between 3 and 4 P.M. according to season. The Capercaillie appears to be establishing itself on the island, and the Raven is noted as a breeding bird.

A sad story is told by Mr. O. H. Mackenzie of the vanishing bird-life of the west coast of Ross-shire. The Black Grouse appears to be well-nigh extinct, and the Red

Grouse and Ptarmigan are rapidly disappearing. Other birds which were formerly so abundant as to be a nuisance, such as the Grey Lag Goose and the Lesser Black-backed Gull, are becoming increasingly rare, as well as many others. Mr. Mackenzie makes no suggestion of the cause of this melancholy state of affairs.

Mr. F. S. Beveridge has two articles on the birds of North Uist, the first dealing with the Grey Lag Goose, its habits, coloration, and breeding; it does a good deal of damage to the crofters' oats, and is consequently hunted down by them; perhaps this accounts for its increasing rarity. The second article contains a list of all the birds, 147 in number, known to have occurred in the island, 55 of which only are resident. Another contribution on the birds of the same island is a reprint of the diary of the late Mr. Alfred Chapman of a visit paid in 1883.

The Isle of May in the Firth of Forth is the subject of a historical article from the pen of Mr. W. Evans, who has collected together all the earlier notices of its avifauna prior to the bird-migration enquiries of 1879. His earliest reference is to a visit paid to the island by James IV. of Scotland in 1508 "to schut at fowles with the culveryn."

In the matter of economic ornithology Mr. W. E. Collinge makes a strong appeal for the use of the "volumetric" method of estimating the amount of the material in a bird's stomach rather than the numerical method. In the latter case the number of individual seeds, insects, etc. are enumerated, but in the former case the volume or bulk of the various kinds of food material is given, and a far more accurate conclusion as to the economic value of the bird can be deduced. Another article on bird economy is that of Mr. H. S. Gladstone in which he discusses the results arrived at by Mr. Gunther in his Report on Agricultural Damage by Vermin and Birds in the Counties of Norfolk and Oxfordshire in 1916. It is chiefly a defence of the Pheasant as the farmers' best aid in the destruction of wire-worms.

List of other Ornithological Publications received.

- GRINNELL, BRYANT, and STORER. *The Game Birds of California.* Berkeley, Cal., 1918.
- KURODA, N. Description of a new Tit (*Parus*). (Tokio Zool. Mag. xxx. 1918, p. 322.)
- WHITE, Capt. S. A. Ooldea on the East-West Railway, Adelaide, 1918.
- WIGLESWORTH, J. The Heronries of Somerset. (Proc. Somerset Arch. Nat. Hist. Soc. lxiv. 1918, p. 68.)
- Archivum Melitense. (Vol. iii. no. 6, 1918.)
- Auk. (Vol. xxxvi. no. 1, 1919.)
- Avicultural Magazine. (Third Series, Vol. x. nos. 3-5, 1919.)
- Bird-Lore. (Vol. xxi. no. 1, 1919.)
- Bird Notes. (Third Series, Vol. ii. nos. 1-2, 1919.)
- British Birds. (Vol. xii. nos. 8-10, 1919.)
- Club van Nederlandsche Voogelkundigen. Jaarbericht, no. 8, 1918.
- Condor. (Vol. xxi. no. 1, 1919.)
- Irish Naturalist. (Vol. xxviii. nos. 1-2, 1919.)
- Journ. Nat. Hist. Soc. Siam. (Vol. iii. no. 1, 1918.)
- Rev. Française d'Orn. (Nos. 117-118, 1919.)
- Scottish Naturalist. (Nos. 85-86, 1919.)
- South Australian Ornithologist. (Vol. iii. nos. 7-8, 1918.)
- Tori. Journal of the Japanese Ornithological Society. (Nos. 1-7, 1917-1918.)

XX.—*Letters, Extracts, and Notes.***Control of New Species and Subspecies.**

DEAR SIR,—In these days when controllers hold their sway in so many affairs of life, it seems to me that it is high time that ornithologists of the world should agree to select a small international committee of, say, three competent individuals, who should sit for a term of years in London, or the country which contains the largest number of types. They should be paid by international subscription. All proposed new species and subspecies should be submitted to them and passed by them. Surely it is time, for the sake of ornithology and the bird student, that some steps should be taken to prevent reckless descriptions of what are often phantom forms. So long as young Mr. —.

who, if shown an American and an European Widgeon, could not say off-hand which was which, is allowed to describe and re-describe at his own sweet will, so long will our troubles and worries multiply. Or, again, take the case of a man who tries to please a certain Mr. Smith who has contributed to an expedition and makes a "*smithi*," knowing perfectly well that it is all a farce.

How true ring the following words, taken from that great and worthy American ornithologist, Dr. Elliot Coues, at the end of his preface to the third edition of his 'Key to North American Birds':—"The 'trinomial tool' is too sharp to be made a toy; and even if we do not cut our own fingers with it, we are likely to cut the throat of the whole system of naming we have reared with such care. Better throw the instrument away than use it to slice species so thin that it takes a microscope to perceive them. It may be assumed, as a safe rule of procedure, that it is useless to divide and subdivide beyond the fair average ability of ornithologists to recognize and verify the result. Named varieties of birds that require to be 'compared with the types' by holding them up slantwise in a good strong light—just as ladies match crewels in the milliner's shop—such often exist in the cabinets or in the books of their describers, but seldom in the woods and fields."

Would that these words, printed in large type, were placed in every Museum.

It is not with the intention of discouraging the description of new forms; either specific or subspecific, that I write this; but it is obvious that the study of birds in the field will in the future be an impossibility if unlimited and often imaginary variations are allowed to go unchecked.

Mr. Claude Grant in 'The Ibis,' 1915, and Messrs. Selater and Mackworth-Praed in working out the Sudan birds are trying to sort things out and getting rid of useless synonyms; but the task is a great one to do thoroughly, and it is not pleasant to condemn our friends' work. Any bird not recognizable in the field by the eye or field-glasses is better left unnamed. If not, it means that every bird must be shot

and compared with types before any authentic note can be made on migration or any other subject ! The well-trained eye of a field naturalist will detect the slightest difference in birds, no matter how much alike they may look. Take, for instance, our Common Swift and the Chinese Swift, which are found associating in enormous flocks in British East Africa in November. In the cabinet they look much alike, but when alive in the clear atmosphere of East Africa they could not possibly be mistaken. It is when we come to distinguish birds by saying (often from a small series) that they average one or two millimetres longer in the wing that difficulties begin, and the study of birds in the field will be made impossible. What we really want is a "Controller's Office." Will not the B. O. U. take the matter up and see if something cannot be done to stop the confusion which is bound to occur if things are left as they are ?

Yours faithfully,

WILLOUGHBY P. LOWE.

Gorsemoor,

Throwleigh, Devon.

30 January, 1919.

Migration and Aviation.

DEAR SIR,—May I make use of 'The Ibis' in order to try to collect whatever data are available regarding observations on the migration of birds made in the air by the Royal Air Force? Perhaps any members of the B. O. U. who are able to tap such a source would be so kind as to place me in communication with those officers who have made any notes on the subject.

In response to a recent advertisement in the 'Times,' I have had a number of replies, of which a cursory examination in the light of existing knowledge on the height at which birds travel and the rate at which they fly when travelling, confirms what I suspected, that birds seldom travel by day at elevations much exceeding 2000 feet, and that their velocity of flight, with a few exceptions, rarely exceeds 50 miles per hour. But on the very scanty evidence available, it is dangerous to theorise ; but it is in the hopes

of gleanings further information that I ask for notes on the following, where any observations have been made:—

1. Date and place of observation.
2. Species or type of bird.
3. Direction of flight.
4. Altitude of flight.
5. Ground velocity of flight.
6. Direction of wind and weather conditions.
7. Whether single birds, a small or large flock, or numerous small flocks were observed.

Many officers of the R.A.F. possess such material, and we want to get it while it is still fresh in their memory, though I quite realize that many officers who have done a large amount of flying may never have seen birds much above the level of the earth. In my own experience of some hundred hours in the air in East Africa, Palestine, and France I have only on three occasions seen birds, though I secretly regarded their observation of more importance than the real object of my flight.

It is in the hope of persuading officers of the R.A.F. to contribute their notes to science, and that in future they may record any observations in these columns, that I write this letter.

Yours very truly,

R. MEINERTZHAGEN.

British Delegation,

Paris.

26 February, 1919.

The Names of the Song-Thrush and the Redwing.

DEAR SIR,—Among all changes of names which have been made in accordance with a stricter application of the law of priority, there can hardly be any which has provoked more displeasure and dissension than the alteration of the names of the birds mentioned above, and probably this difference in opinion may still last a very long time. The cause of this is, of course, that Linnæus had thoroughly mixed up the two species. In *Syst. Nat.* ed. 10, 1758,

'*Turdus iliacus*' is provided with two characteristics, the first of which, "alis subtus flavescentibus," belongs to the Song-Thrush. the second, "rectricibus tribus lateralibus apice utrinque albis," applies to the Missel-Thrush.

'*Turdus musicus*,' again, receives a diagnosis which evidently is taken from a Redwing, viz., "alis subtus ferrugineis, linea superciliorum albicante." If, however, we follow Linnæus' quotation of himself in the '*Fauna Suecica*,' no. 189, we find there a diagnosis and a description of the Redwing, but at the same time some additional notes which quite as clearly point to the Song-Thrush, viz., "Ova 6 cæruleo-viridia maculis nigris variis." The quoted vernacular names, "*Smolandis* Klera, *Ostrogothis* Kladra," belong also to the Song-Thrush.

It is not much better in the second edition of '*Fauna Suecica*,' 1761. The short diagnosis of '*Turdus musicus*,' "remigibus basi interiore ferrugineis," contains, of course, only a characteristic of the Redwing. The diagnosis and description of '*Turdus iliacus*' are similar to that of the first edition. In the same way the notes about eggs and vernacular names referring to the Song-Thrush are the same as in the first edition: there is only one more vernacular name added, viz., "*Westmannis* Taltrast," and this belongs just as much to the Song-Thrush.

In Syst. Nat. ed. 12, the diagnosis of '*Turdus iliacus*' is clearly that of the Redwing, and that of '*Turdus musicus*' applies also to the Redwing with the words "remigibus basi interiore ferrugineis."

To sum up, it appears most probable that, although Linnæus knew the biology of the Song-Thrush, admired its singing power, and had seen its nest and eggs, he never had examined, at least not accurately, such a bird. A Redwing, on the contrary, he had evidently had in his hands, and correctly perceived its characteristics, but he took it to be the bird which he had heard singing, and the eggs of which he had seen. He had from the literature understood that there were two species, but he mixed them up, and partly also the Missel-Thrush.

The result of this is that, although the specific names

by common consent and custom have been fixed so that ornithologists for generations have used the specific name *musicus* for the Song-Thrush and *iliacus* for the Redwing, it cannot be disputed, when a strict regulation of the nomenclature according to the law of priority is observed, that the current usage is incorrect.

The best course would, no doubt, be that both these names by international consent should be declared as "nomina conservanda," but at the present time there is not much hope for such an agreement.

The present state of affairs is rather a deplorable confusion.

For the Song-Thrush alternatively are used the following names:—

Turdus musicus Linn.

Turdus iliacus Linn.

Turdus philomelus Brehm.

For the Redwing:—

Turdus iliacus Linn.

Turdus musicus Linn.

This is the more confusing, as for both species both names are used with the name of Linnæus as author. If it is found impossible to fix the names formerly used for these species as "nomina conservanda," I think the only way out of the confusion would be to discard both names (*musicus* as well as *iliacus*), and call the Song-Thrush *Turdus philomelus* Brehm, and the Redwing *Turdus mauvis* P. L. S. Müller. If the Gordian knot cannot be solved, it is better to have it cut than to have it as a cause of permanent discord.

Yours truly,

Riksmuseet,
Stockholm.

EINAR LÖNNBERG.

18 February, 1919.

The Indian Peregrine Falcon.

DEAR SIR,—With reference to the letters of Messrs. H. Whistler and E. C. Stuart Baker on the Indian Peregrine Falcon, the following notes of mine may help to solve the question.

I have a great personal knowledge of the North-West

Frontier Province from Peshawar to Baluchistan and the whole of the Punjab, having spent some thirty years in almost every Station there as far south as Quetta. During the whole time I watched carefully for nests of both *Falco peregrinus peregrinator* and *F. p. babylonicus*.

Along the foot of the hills from Jhelum to Peshawar on through Kohat to the borders of Afghanistan at Parachinar, both birds are to be found during the breeding-season. I visited two eyries near Kohat, and found both birds were undoubtedly *F. p. peregrinator*. The Pathans, who are keen falconers, recognize the difference and speak of *F. p. babylonicus* as the Red-headed Shahin. They do not take the young of *F. p. babylonicus*, as they say they are not so good for hawking purposes as *F. p. peregrinator*.

I obtained the eggs from one eyrie near Kohat through Mr. Donald. Now Mr. Donald, as quoted by Mr. Whistler, was a keen falconer, but, I may add, knew well the difference between these two birds, and he stated that they were eggs of *F. p. peregrinator* and not *F. p. babylonicus*. My observations were confirmed by Captain Phillott of 3rd Punjab Cavalry, also a keen falconer. I saw their birds, so am sure of their identification. Another falconer, Major Biddulph of 19th Cavalry, who was also a good naturalist, spoke to me about these birds; he had with him at Jhelum an old bird of *F. p. peregrinator* that he had obtained from an eyrie at Mian Quale, near Kohat. This is one of the eyries visited by me and from which eggs were obtained for me by Mr. Donald. These birds had bred at Mian Quale for many years, and the eyrie was carefully guarded by the headman of the tribe near, and it was from here he obtained his young birds.

This is the evidence I have referring to *F. p. peregrinator*, but more south, in the Gumal Pass, near Dera Ismail Khan, the only breeding birds were *F. p. babylonicus*. One nest is mentioned by Captain Phillott in Blanford's 'Birds,' vol. iii. I also saw a nest of *F. babylonicus* with young near the same place. This nest was shown to me by a Pathan, who spoke of it as the "Red-headed Shahin."

I took eggs from an eyrie at Fort Munro in Baluchistan, with certainty identifying the birds and their light heads, as they passed within twenty yards of and below me, while the eggs were being taken.

I again saw a nest with young near Jhelum that was certainly *Falco p. babylonicus*. These birds were at Fort Sandeman, Baluchistan, during the breeding-season, though I did not find the eyrie.

From this I can safely say that I have found *Falco p. peregrinator* the common breeding-bird in the northern part of the Punjab and the North-West Frontier Province, and *Falco p. babylonicus* south of Kohat and in Baluchistan.

Yours truly,

Tonbridge, Kent.

12 January, 1919.

R. H. RATTRAY (Colonel),

M.B.O.U.

Gannet Settlements in Newfoundland.

DEAR SIR,—It is good news to hear from Mr. P. A. Taverner of the Geological Survey, Ottawa, that he has received information of another Gannetry, not heretofore recorded. It lies off Cape St. Mary, southern Newfoundland, where the Gannets are said to have chosen an isolated rock, of some three or four acres extent. This, however, may not, after all, be the first Gannetry for Newfoundland, as long ago there appears to have been one on Funk Island.

Yours truly,

Keswick, Norfolk.

11 January, 1919.

J. H. GURNEY.

Annual Meeting of the American Ornithologists' Union.

The 36th Annual Meeting of the American Ornithologists' Union was held in New York City, 11 November, 1918. Owing to the epidemic of influenza the public meetings for the presentation of papers were omitted and the sessions were limited to business meetings of the Council and Fellows and Members. The election of officers resulted in the choice of the following officers for the ensuing

year :—*President*, John H. Sage, Portland, Conn.; *Vice-Presidents*, Dr. Witmer Stone, Philadelphia, and Dr. George Bird Grinnell, New York; *Secretary*, Dr. T. S. Palmer, 1939 Biltmore Street, Washington, D.C.; and *Treasurer*, Dr. Jonathan Dwight, New York. Five additions were made to the list of Honorary Fellows, and 14 foreign ornithologists were enrolled as Corresponding Fellows, including E. C. Stuart Baker, W. E. Collinge, Tom Iredale, F. C. R. Jourdain, and N. F. Ticehurst. The Honorary Fellows were Dr. Roberto Dabbene of Buenos Aires; Dr. Alwyn K. Haagner of Pretoria, Transvaal; Dr. Einar Lönnberg of Stockholm, Sweden; M. Auguste Menegaux of Paris; and Dr. Peter Suschkin of Kharkov, Russia. Five new Members, Dr. Harold C. Bryant, George K. Cherrie, Lieut. Ludlow Griscom, Lieut. J. L. Peters, and R. W. Williams, and 147 Associates were added to the rolls.

Although the Union has had seventy-five of its younger and more active members in military and naval services, it has survived the war without suffering any decrease in its membership, its income, or in the size of its journal. It has not found it necessary to increase its dues, and the past year has proved one of the most prosperous in its history.

The next meeting in 1919 will be held in New York City.

Annual General Meeting of the British Ornithologists' Union.

The Annual General Meeting of the British Ornithologists' Union for 1919 was held on Wednesday, 12 March, at the Offices of the Zoological Society of London.

Dr. W. Eagle Clarke, President, was in the Chair.

There were forty-six Members present.

The Minutes of the last Annual Meeting were read and confirmed.

The Committee recommended that Mr. W. L. Slater, M.A., be re-elected Editor of '*The Ibis*' for the succeeding series, and that Mr. H. J. Elwes, F.R.S., be elected a

member of the Committee in the place of Lord Rothschild, F.R.S., who retires by seniority.

These recommendations were confirmed by the meeting.

The Annual Report of the Committee was read as follows:—

“The Committee have pleasure in being able to report that the financial situation on the 1st of January, 1919, was very satisfactory.

“Our credit balance was, on that date, £140 as against £236 on the 1st of January, 1917, but in that year we had an outstanding account of a little over £45, whereas this year we have an outstanding asset of just under £50. Really, therefore, our balance is roughly £185 as against £190 in 1917.

“There is, however, another item which calls for remark in this year's account, and that is the payment of £115 on account of paper, as against under £50 in 1917. This is because we were obliged to buy at a very high figure sufficient paper to supply the issue of ‘The Ibis’ for 1918 and to leave a certain reserve in hand for 1919. Before the exhaustion of this supply, we anticipate a large drop in the cost of paper and a corresponding decrease in our payments on account of the production of ‘The Ibis.’

“The accounts have been audited by Mr. Munt, and are shown in the circular issued to all members.

“The total receipts in 1918 have been £716 as against £850 in the previous twelve months. The reasons for the decrease are principally the reduction in the sales of ‘The Ibis,’ roughly £70, and the Jubilee Supplement, £50. The cost of ‘The Ibis’ has been £688 17s. 10d. as against £523 6s. 6d. in 1917. The reason for the greatly increased cost is primarily, as already shown, due to the high price of paper, but also on account of the increased cost of every item connected with printing and publication.

“The present volume is the sixtieth and completes the final volume of the tenth series. It contains 748 pages and is illustrated with five coloured plates, five uncoloured plates, and twelve text-figures.

"The sale of 'The Ibis' has been well maintained, although this year we have had no large demand for the older back numbers. There continues to be a certain demand for the B. O. U. List of British Birds, and a few copies have also been sold of the General Index, and Jubilee Supplement.

"The Committee regret to report the deaths of the following members since the last Annual General Meeting:—Professor Dr. L. Brasil, Mr. N. Chaplin, the Marchese G. Doria, Mr. F. Du Cane Godman, Colonel W. V. Legge, Mr. J. C. McLean, Dr. G. Martorelli, Messrs. L. E. Mouritz, T. A. Dorrien-Smith, and F. Sharman.

"Owing to the War and the loss of communications, no information was received until recently of the death of the Marchese G. Doria, which occurred in 1913.

"We would especially wish to place on record at this Annual General Meeting our profound regret at the great loss sustained by the British Ornithologists' Union together with the whole scientific world, in the death of Mr. F. Du Cane Godman, so many years Secretary and President of the Union, of which he was one of the founders.

"The following gentlemen have resigned:—Messrs. J. Backhouse, A. Chapman, W. W. Fowler, Rev. H. E. Fox, J. E. Harting, W. Hartman, P. J. C. McGregor, G. A. MacMillan, A. H. Macpherson, W. R. Ogilvie-Grant, W. P. Pyecraft, and W. C. Wright.

"The names of Messrs. G. A. Booth, R. Patterson, and J. Sargent have been removed from the List of Members under Rule 6.

"The membership of the Union is given below in comparison with the previous five years:—

		1919.	1918.	1917.	1916.	1915.	1914.
Ordinary	Members...	418	423	416	420	441	433
Extraordinary	..	1	1	1	1	1	1
Honorary	..	7	8	9	9	9	7
Hon. Lady	..	8	8	9	8	6	6
Colonial	..	9	9	10	10	10	
Foreign	..	13	20	19	19	20	19

“There are 13 candidates for Ordinary Membership, 2 for Honorary Membership, 4 for Foreign Membership, and 1 for Colonial Membership.”

Arising from the Report, Mr. A. Trevor-Battye moved that it was desirable that there should be a memorial in the Natural History Museum to the memory of the late Mr. F. Du Cane Godman, and that the Committee of the Union, together with Lord Rothschild and Mr. J. G. Millais, should meet to consider how best this matter could be carried out.

This was seconded by Mr. H. J. Elwes, who suggested that the name of Mr. Salvin, for so many years the scientific partner of Mr. Godman, should be associated with that of Mr. Godman.

The motion was carried.

Mr. E. C. Stuart Baker then moved that the Union should found a medal to be given from time to time for distinguished Ornithological work, in memory of Messrs. Godman and Salvin, and that the medal be called the “Godman-Salvin” medal.

This was seconded by Mr. E. Bidwell, and supported by Lord Rothschild.

After some discussion it was agreed that this second motion referred to the Union alone, but in the case of the Memorial in the Museum, the other Scientific Societies and bodies with which Mr. Godman was connected would probably wish to join with the Union in carrying out the Memorial.

The motion was carried unanimously.

Messrs. G. H. Lings and H. Massey were appointed Scrutineers to superintend the Ballot.

The following 13 candidates for Ordinary Membership were then balloted for and elected :—

Geoffrey Frances Archer, C.M.G.

Edward Carleton Arnold.

Thomas Porter Backhouse.

Captain William Kenneth Bigger, R.A.M.C.

Captain H. Brocklebank.

Edgar P. Chance.

Walter Edward Collinge, D.Sc., M.Sc., F.L.S.,
F.E.S.

Nina Johnstone Douglas.

Captain Tom George Longstaff.

The Rt. Hon. E. S. Montagu, M.P.

Wesley Theodore Page, F.Z.S.

Theodore Richard Robinson.

The Hon. Guy Lawrence Wemyss-Charteris.

Mr. Leonhard Stejneger, C.M.Z.S., a Foreign Member,
was elected Honorary Member.

M. A. Menegaux was elected an Honorary Member.

Mr. Outram Bangs, Dr. Roberto Dabbene, Dr. Joseph
Grinnell, and Count Nils Gyldenstolpe were elected Foreign
Members.

Mr. Percy A. Taverner was elected a Colonial Member.

Mr. W. L. Slater announced that the Committee of the
British Ornithologists' Union had appointed a Special Com-
mittee to prepare and publish a new List of the Birds of the
World in conjunction with the American Ornithologists'
Union.

The Special Committee proposed are:—

Messrs. E. C. Stuart Baker, C. Chubb, W. Eagle
Clarke, E. Hartert, T. Iredale, G. M. Mathews,
Lord Rothschild, and W. L. Slater.

The Committee has already met on several occasions and
has been in communication with the Secretary of the
American Ornithologists' Union, who has replied that his
Union will gladly co-operate with the B. O. U. in preparing
the work. It is proposed to publish a series of six volumes
under the title of '*Systema Avium*,' containing a list of
the birds of the six zoo-geographical regions, *i. e.* Palæarctic,
Indian, Ethiopian, Australian, Nearctic, and Neotropical.

A fuller notice of the proposed '*Systema Avium*' will

be found in the January number of this year's 'Ibis' on page 164.

The scheme met with the cordial approval of the members present.

Mr. H. M. Wallis made some remarks in regard to the constitution of the Union, and stated that he believed that it was the wish of a considerable body of the members that the Committee of the Union should be enlarged and at least three additional members appointed.

The statement was supported by the Rev. F. C. R. Jourdain and others.

The Chairman announced that this matter would receive the careful consideration of the Committee, and that the matter would be discussed at the next Annual Meeting.

Dr. Coltart proposed a vote of thanks to the Zoological Society for the use of their Meeting Rooms.

This was seconded by Mr. E. Bidwell and carried unanimously.

A vote of thanks to the Auditor, Mr. Munt, was proposed by Mr. H. Matthews and carried unanimously.

Mr. Meade Waldo proposed a vote of thanks to the Chairman, which was also carried unanimously.

The usual dinner was held later in the evening at Pagani's Restaurant in conjunction with the British Ornithologists' Club, and was largely attended.

The Ogilvie collection of British Birds.

The fine mounted collection of British Birds made by the late Mr. Fergus Monteith Ogilvie, who died last year at Oxford, has been presented by his widow to the Ipswich Museum. The birds are all set up in separate cases on much the same plan as those in the Booth Museum now at Brighton. These cases are 238 in number, and the birds contained in about 150 of them were obtained in Suffolk.

They are beautifully mounted by Mr. Gunn of Norwich with the natural backgrounds and surroundings.

Minute details of the circumstances of the capture of each specimen were recorded by Mr. Ogilvie in a MS. catalogue, and it is proposed to prepare a printed catalogue from this for publication. The collection is a most valuable addition to the Ipswich Museum and will greatly add to its attractiveness.

At the same time Mr. Ogilvie had made a very extensive collection of British Birds in skin, chiefly among the Shore- and Water-birds. This collection, consisting of over 1200 specimens, has been presented to the British Museum by Mrs. Ogilvie, and is a most valuable addition to the bird-room. The collection of British Birds in skin in the British Museum has never been worthy of that institution, and the Ogilvie collection will certainly do much to remedy this defect.

AN INDISPENSABLE WORK.

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IN EIGHTEEN PARTS

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Communications intended for publication in 'The Ibis' should be addressed to the **Editor**, 10 Sloane Court, Chelsea, S.W. 1.

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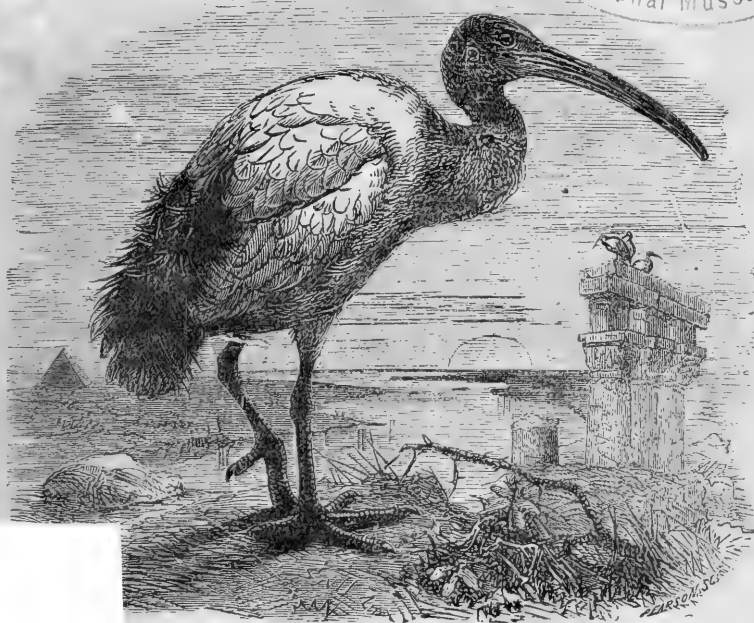
THE IBIS,

A

QUARTERLY JOURNAL OF ORNITHOLOGY.

EDITED BY

WILLIAM LUTLEY SCLATER, M.A.



PUBLISHED BY THE
BRITISH ORNITHOLOGISTS' UNION

AND SOLD BY
**WILLIAM WESLEY & SON, 28 ESSEX STREET, STRAND,
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THE IBIS.

ELEVENTH SERIES.

VOL. I. No. 3. JULY 1919.

XXI.—*A preliminary Study of the Relation between Geographical Distribution and Migration with special reference to the Palæarctic Region.* By Lieut.-Col. R. MEINERTZ-HAGEN, M.B.O.U.

IN studying the migration of birds we cannot confine ourselves to a narrow view of dates of arrival, weather-influence on migration, routes of migration, etc., but are necessarily compelled to enquire into other ornithological problems which directly influence migration, such as the questions of Moulting, Sustenance on Migration, and others, among which the problem of Geographical Distribution is all-important.

Until quite recently the study of migration was built on a sea of theories, sometimes based on no evidence and at other times based on insufficient data. Many authors had generalized on purely local facts, and attempted to apply to all birds a principle which was only manifest in a single species at some isolated lighthouse or on some island-observatory. The interpretation of facts was often attempted before those facts were themselves accurately known, and opinion was in many cases based not on knowledge, but on conjecture. The result is that many distinguished authors did, and do still, hold opposite views on similar migration-problems.

By applying existing theories to migration in general, it was found that they were usually only applicable to a particular species at one particular spot, and it became apparent that until a fairly comprehensive grasp could be got of the migration of each species throughout its range, we should not progress to any great degree.

The rules governing the migration of a species in Great Britain need not necessarily apply to that same species when passing from its summer quarters in other parts of the world to, say, India or Egypt. Each species contains many communities, and even very small local colonies, whose summer and winter homes and routes of migration are governed by laws which are almost individualistic. Not only each species and subspecies, but every small colony or family of birds presents on occasions a separate problem, the solution of which may differ in accordance with the many varied laws governing the migratory habit. In this connection it is interesting to quote Whitlock ('Migration of Birds,' final paragraph):—

“Every species, nay, every little clan of birds has its own migratory history, resembling as a whole the story of the common flight, but on the other hand differing in many points in its minor details.”

Before, then, the migration of any species can be studied as a whole, a detailed knowledge of its Geographical Distribution will be necessary, and in grappling with this question we are at once confronted with the question of Subspecies or Geographical Representatives.

A Subspecies is an incipient species and is evolved *ab initio* from exactly the same causes as a species. The causes of variation in species or subspecies may be roughly summarized as follows:—We may attribute variation in size to the quantity or quality of food, variation in structure to some essential habit developed in the daily search for food (it is hoped to show at some future date that length of wing is not dependent on length of migration, but on daily habit), special decorative development to courtships necessitating

nuptial display, the thickness or extent of the feathered regions to climate, and variation in colour to climate or local surroundings or food. A high temperature, a dry atmosphere, and a bright light seem to produce that bleached effect usual in desert forms. A temperate climate, moist air, and a dull sky tend to dark plumage. Alpine and Arctic forms display more white than is noticeable in the same bird from farther south or from lower altitudes; though we see in the case of *Corvus cornix capellanus* the brilliant glare of the Persian Gulf having the same effect on plumage as the glare from the Arctic snows has on many northern forms.

It is curious that it is the influence of the breeding-quarters which causes differentiation, the winter-quarters and regions traversed on migration having little effect on coloration or structure. Wide-ranging and common species show the most variation, so long as their breeding-area is not restricted, as in some of the Polar breeding-species. It therefore seems likely that it is the nursery which tends to differentiation. This is most remarkable in such birds as *Cuculus canorus* and *Micropus apus*, whose nursery-life scarcely extends to a quarter of the whole year, and among which several well-marked geographical forms exist which in some cases share a common winter-quarters.

But it seems by no means proved that the breeding-quarters of a species is necessarily its real home, though it is undeniable that the present breeding-quarters of a species produces the homing influence on spring migration. Seebohm (Geogr. Dist. of the Charadriidæ) has already pointed out that it is possible that the present winter-quarters of migratory birds breeding in northern latitudes coincide with the old breeding-quarters of the same bird's ancestors in the Post-Pliocene Glacial Period. It seems probable that a species with a confined breeding-area and an extensive range in winter had its original home in the confined breeding-area to which it is most attached, for this area is much more exact and local in influencing the bird's life, and becomes the focus of its migrations. On the other hand, it may be that a species with a wide breeding-range and a

confined winter-quarters was originally evolved in its present winter-quarters, which retains the hereditary attraction due to the love of a bird for its old home. In this and in other ways geographical distribution, when closely studied, will be found to be most suggestive of a bird's past migratory history.

In this connection it is interesting to note that, though a particular form of bird chooses for its winter-quarters an infinite variety of climate, in most cases the breeding-quarters in the breeding-season show no great variation of climate, though these may cover a vast latitudinal area.

The much-debated question of trinomials is outside the scope of this paper. The value, however, of subspecies to the student of migration is immense, and the more a species can be split into geographical forms the easier becomes its migration problem and the determination of its correct geographical distribution. Throughout the southern part of the Palæarctic Region we frequently find more than one form of a single species wintering in the same area, and with the help of subspecific differences, however small or distasteful to the conservative binomial ornithologist, we can at once recognize the breeding-area of the bird in question and its probable migration-route, provided we have reliable information regarding its geographical distribution.

Geographical distribution includes, in the case of migratory birds, the breeding-area, the winter-quarters, and the routes of migration connecting these areas in spring and autumn. Very few species in the Palæarctic Region can be classified as true residents throughout all seasons, though many might appear to fulfil the conditions of a resident species until their movements are closely studied. A disregard of the importance of a species' distribution at all seasons has largely discounted the value of many ornithological works and papers, for the mere mention of a species occurring at a certain locality, without date or further detail, does not really advance our knowledge of the geographical distribution of that species, but rather confuses it and encourages misleading deductions.

In writings on the birds collected in a certain area we frequently see a great amount of detailed description of the birds collected, their wing-measurements, etc., and, except for the number of specimens obtained and their sexes, no further detail. A rough guess can be made at the date of collection from the time of year during which the collection was made, but this even is often impossible. There is rarely any indication as to whether the species was common or whether the specimens collected were the only ones observed, whether the bird was resident, on passage, or in winter-quarters. Again, how frequently the major value of a paper is lost by failure to grasp the importance of assigning subspecific value to those specimens which represent geographical races. The occurrence of the Song-Thrush in Portugal is of little value without knowledge as to whether the bird is of the British or Continental race; or, again, the passage of the Redstart in Egypt or Palestine loses its importance without a determination of its subspecific rank, which alone helps us in studying the bird's distribution and migration.

It is perhaps ungenerous thus to criticise the great efforts made by Field and Museum Naturalists, but the writer himself being an offender in this respect, reference is made to this most important point in the hopes of stimulating further effort to gain the maximum results from the slaughter of such beautiful creatures as birds, to enable us to interpret correctly the many and varied facts with which Nature presents us, and to solve the complex problems of distribution and migration. No killing of birds can be justified merely to compile a list of species obtained in a certain locality. Careful field-notes by the collector and an accurate determination of subspecific rank (where this exists) by the man who works out the collection can alone justify its formation. A mere list of birds likely to be found in almost any part of the world could be compiled by any studious ornithologist in the library of the Zoological Society in Regent's Park, without a visit to the locality in question and without taking the life of a single bird.

Neither are we dealing with a science which is stationary.

Geographical distribution and migration have been in the past, are now, and always will be fluctuating, sometimes imperceptibly, sometimes by leaps and bounds. The same applies to the geographical races of a species. As distribution and migration alter, so do subspecies become evolved, usually very gradually, but sometimes within the lifetime of man. But the problems remain constant, and the laws which govern these problems change but little.

The extent of the geographical distribution or range of a species, on which largely hinges the differentiation in both species and subspecies, is due to :—

1. Gradual expansion or contraction.
2. Periodic and regular migration.
3. Sporadic migration, invasion, or extensive wanderings.
4. Human agency, direct or indirect.

A few cases will be taken to illustrate these problems which so closely link Distribution, Migration, and Differentiation among birds.

1. *Gradual expansion or contraction.*

Birds have been known to gradually extend their range into every point of the compass, and it will probably be found that normal expansion radiates from the bird's original home. It is interesting to note that the Charadriidæ are believed by Seebohm to have originated in the north, and the Swallows have been credited with an early home not far removed from the tropics.

But it is more recent and current movement which now concerns us.

An example of gradual expansion to the south is well illustrated by the range of the Crested Lark (*Galerida cristata* and its subspecies), whose original home was probably central and western Asia. This species has now amplified its distribution from France to Corea, and south to Sierra Leone and Senegambia on the west coast of Africa and Abyssinia and Somaliland on the east coast, and to Ceylon. It would appear from an examination of this

distribution that expansion has followed coast-lines, which, as pointed out by Hartert (Novit. Zool. xx. 1913, p. 76), is a tendency not only among migratory but among such sedentary species as the White Owl, Chough, Cirl-Bunting, and others. But here, in the case of *Galerida cristata*, we see expansion and differentiation progressing concurrently; and there can be little doubt that the Crested Lark, a hardy species capable of residence in the snows of central Europe and Asia or in the heat of the Red Sea littoral, will not check its expansion till the Cape Seas arrest its progress. Its advent on the west coast of Europe is probably of comparative recent date, for it has never established itself in Great Britain, though there can be little doubt it would have done so during the last century if its efforts had not been checked by the greed for rare birds.

The Shore-Lark (*Eremophila alpestris flava*), which in comparatively recent times has become a common breeding-species in Arctic Norway, affords a good illustration of gradual expansion to the west. At the same time as expansion of breeding-range, these birds opened out a new line of migration about 1847 (Gaetke) and became a common bird of passage at Heligoland in spring and autumn. This fact is of particular interest, as other northern species (*Phylloscopus borealis borealis*, *Anthus gustavi*, and *Emberiza pusilla*) have, in spite of westward extension of their breeding-range, rigidly adhered to their ancient migration-route and winter-quarters in south-east Asia. Cooke ('Migration of Birds,' p. 6) further illustrates the phenomenon of westward extension in the Bobolink, which species rigidly adhered to its ancient migration-route though adding 1000 miles to its line of flight.

Gradual expansion to the north can be found in the case of the Greater Spotted Woodpecker in Great Britain and in the case of *Passer moabiticus moabiticus*. This latter bird, formerly confined to the south end of the Dead Sea, is now commonly found in the Jordan Valley at the north end of the Dead Sea and will doubtless extend to Galilee.

Eastward expansion, though the example must be taken

from outside the Palearctic Region, is well illustrated by the Grey Parrot in Equatorial Africa. This bird, formerly unknown much east of Uganda, has rapidly extended its range across the Mau Plateau and Rift Valley, and will ere long find itself on Mount Kenya and thence to the east coast of Africa.

Gradual contraction of range from natural causes may be due to meteorological or climatic conditions. Gaetke ('Birds of Heligoland') quotes the erosion of the Heligoland cliffs as partly destroying the breeding-haunts of the Guillemot and Razorbill. A cyclone in Mauritius almost exterminated the local species of Martin. The sudden rising of water on an artificial lake in Baluchistan completely destroyed many dozens of nests of a Grebe, together with many hundreds of their eggs, and the whole colony of breeding-birds moved that night and have not since returned to that lake as a breeding-species.

Or contraction may be due to inability to establish a migratory habit, which we see after severe winters among some of our own resident forms; or to an insufficiently developed migratory habit, as with certain communities of Redwings, Fieldfares, and Starlings, who perish in the south of England and Ireland in very severe weather rather than continue their passage to south-western Europe, as do other communities of the same species who have developed an increased migratory line of flight.

Or contraction may be due to expansion in range of some other species which becomes an evicting factor. The Jackdaw is believed to have been largely responsible for driving the Chough from the cliffs of southern and western England. The House-Sparrow, in extending its range in Russian Turkestan, has supplanted the Tree-Sparrow, and has evicted the House- and Sand-Martin from many nesting-haunts in England. The Puffin has replaced the Manx Shearwater in some of the islands of the Inner Hebrides.

Food-supply will also contract the range of a species, though this is usually only a temporary inconvenience.

Gradual contraction among non-migratory species will eventually produce interrupted distribution, extermination, or isolation. Of the first of these conditions *Sitta canadensis* occurring in Corsica, China, and America, *Cyanopica cyanus* in Spain and Eastern Asia, and *Pyrrhocorax pyrrhocorax* with its reported isolated colony in Abyssinia, afford good examples.

Isolation will in its turn most assuredly produce differentiation. In these three above-quoted cases, there can be little doubt that the isolated colonies emanated from the same parental stock and that they primarily emigrated from the same area. As in Mesopotamia we find derelict remains of ancient civilization, such as the banks of some Babylonian canal, cropping up at sometimes great intervals and only giving us a general clue to a once-huge work, so we find among some species, derelict groups or forms cropping up in widely-separated parts of the world as landmarks of some bygone migration or continuous distribution.

Such gradual movements as are outlined above, when undertaken by what are commonly believed to be resident species, represent in fact incipient migration or movements from which a strong migratory habit has since developed in other species.

2. *Periodic and regular migration.*

We see periodic and regular migration effecting changes in breeding-area in certain species of Palæarctic birds. We find the Bee-eater (*Merops apiaster*) taking advantage of South African conditions and establishing breeding-colonies there (Stark and Selater, 'Fauna of South Africa, Birds,' iii. p. 59). That this species breeds regularly in Algeria and Egypt is beyond question, and it seems possible that it also breeds in the northern Sahara (Novit. Zool. xviii. 1911, p. 524, xx. 1913, p. 60). It is not then surprising to find them nesting in South Africa, where conditions are more favourable than in North Africa. But it is not inferred that this bird breeds twice a year, once in its normal summer haunts and again in its winter haunts. It is more likely that the

colonies which breed in South Africa are resident communities who have dropped the migratory habit as redundant to their life.

Again, we find the Sandpiper (*Totanus hypoleucus*) nesting in tropical East Africa (Van Someren), and the writer observed the young of this species with their parents on the Kajiado River near Nairobi in 1915. The Pratincole is reported to have bred in a colony near Durban in November 1917 (Ibis, 1908, p. 385), Geoffroy's Sand-Plover is suspected of breeding in Somaliland (Archer) and the Swallow (*Hirundo r. rustica*) in Uganda and on Kilimanjaro.

It is held that these cases of expansion of the breeding-range are directly attributable to migration, as they all occur among species in which the migratory instinct is strongly developed. Whether or no these instances are cases of incipient isolation remains to be seen. If this is the case, we shall get differentiation, as in the case of *Corvus cornix*, the Hooded Crow, which has two communities, in Egypt and on the Persian Gulf, both of which have lost the migratory habit, and one of which has assumed considerable differentiation.

It has been stated (Eagle Clark, 'Migration of Birds,' i. pp. 15-17) that southern tropical regions are not suited as a nursery for the hardy northern birds, and if breeding were attempted in such regions the species would become extinct.

Facts do not entirely support this view, though doubtless it is true as a broad principle. We have already referred to the Hooded Crow, an essentially hardy northern species and one of the few birds remaining in Arctic Norway in winter, as breeding under one form (*Corvus capellanus*) on the shores of the Persian Gulf, one of the hottest parts of the world and eclipsing the heat of any part of tropical Africa, while yet another undifferentiated form is resident in Egypt and northern Sinai. We find a Swallow (*Hirundo savignii*) breeding in Egypt, various forms of the White Owl and Kestrel throughout the tropics of Asia and Africa, and other birds such as *Saxicola torquata*, the Stonechat, with geographical races equally at home from the Arctic Regions to Cape Town.

All such distribution, as illustrated in this last paragraph, is due either to gradual emigration or to a regular migratory habit at some remote period, and has depended for its success on the initial capacity of a species to adapt itself to new surroundings, which was possibly a case of necessity in the earliest attempt.

In this connection it would be interesting to ascertain whether the same species, when nesting in tropical countries, lays fewer eggs in the clutch and rears more broods in the season than the same bird in more northern climes. The Blackbird is said (Chapman, 'Wild Spain') to lay but three eggs in Spain, to raise three broods in Tangier (Favier), whilst in the Canaries the local Blackbird (*Turdus m. cabreræ*) lays very few eggs in the clutch (Ibis, 1912, p. 597). The Wren (*Troglodytes*), a prolific breeder in northern climes, appears to lay but four eggs in the normal clutch in Sicily (Ibis, 1912, p. 171). Is such the case among other species which have tropical representatives? The point is submitted to the many distinguished zoologists whose vast collections might help to solve the problem. Is the normal clutch regulated by the capacity of the parents to feed the young (or water the young, in the case of Sand-Grouse), or by the limits of brooding-surface on the parent's abdomen, or by the normal mortality in the species, or by what? Even such questions have influence on migration and distribution, for it is by no means certain whether birds go to the Arctic Regions for reproduction, on account of their ancient love for home, or to enable them to get sufficiently long days to collect a satisfactory supply of food for their offspring, or whether merely because the Arctic Regions offer a more prolific food-supply than more southern regions. If either of the two latter causes are correct, we should expect to find the Charadriidæ and Anatidæ which breed in the tropics to lay fewer eggs in the clutch than those which breed in northern Europe. We know that a plethora of food reflects itself on reproduction (*cf.* Snowy Owls and Rough-legged Buzzards in Lemming-years in Scandinavia, and the increase of Hyænas after wholesale deaths among natives in East Africa).

3. *Sporadic migration, invasion, or extensive wanderings.*

The well-known invasions of *Syrrhaptes* need no comment. That they would lead to eventual permanent colonization is almost certain, but so far the species has never had a fair chance. There is no reason, however, why the wide distributions of *Pterocles arenarius* or *P. senegallus* should not have been initiated by colonization after sudden invasion, for the Sand-Grouse as a group are essentially wanderers in search of suitable and rather specialized food, seeming to pride themselves on erratic movement and ignoring any seasonal lines of flight, which, generally speaking, constitutes migration; though in some spots they are particularly regular on migration, as is the case with *P. arenarius* of northern India.

The Rose-coloured Starling, aptly described as a veritable gipsy among birds, gives us a further illustration of colonization (in Italy and elsewhere) after invasion; and the various subspecific colonies of the Crossbill (*Loxia curvirostra*) in the Mediterranean region might equally be due to colonization after irruption at some remote date, as opposed to either gradual expansion or regular migration, though the accuracy of such a theory to account for their present distribution is by no means certain.

4. *Human agency, direct or indirect.*

The introduction of such species as the Pheasant, Goldfinch, and Starling to various parts of the world will suffice to illustrate expansion of range due to direct human agency. In the case of the Goldfinch, we find in the Bermudas that the bird has already established for itself a differentiation entitling it to subspecific rank. In the case of the introduction of the Starling to Cape Town, it is interesting to note that the species has abandoned the migratory habit and has become a pure resident, not even congregating into flocks in winter.

Contraction of distribution under this heading is the sad story of extermination, being generally confined to species

having a very local breeding-area, such as the Passenger-Pigeon, Esquimaux Curlew, and Labrador Duck, or to species which, having a large range, are unable to resist slaughter at all seasons. Systematic egg-stealing under the cloak of science, but which in reality is the travesty of science, is also responsible for such contraction of range, as in the case of so many birds which have within the last century ceased to be included among British breeding-species.

Indirect human agency has increased the breeding-range of certain species, though only in a minor degree. The re-afforestation of land and artificial sheets of water have, no doubt, helped in this manner, though in most cases it has been a case of re-establishment. The carrying of migratory birds on ships comes under this heading.

In like manner has interference with terrain, such as the draining of the Fens, contracted the breeding-range of birds. The introduction of a destructive element has had similar effect, as in the case of the arrival of the pig in Mauritius which completed the sad fate of the Dodo, or the great mortality among sea-birds from the torpedoing of a tank-steamer and the resultant film of oil spread over vast areas of sea.

From these examples it will readily be seen how closely related are migration, distribution, and differentiation among birds. Without the framework of distribution the study of migration can only lead to theory. Each separate species or subspecies must be studied, if possible throughout its range, and then we shall arrive at facts from which the whole narrative of migration can be read. No two species which have a similar geographical distribution are known to have similar migratory habits. We even get, among birds of the same species, vast differences in migratory habit, hence the great importance of detailed study.

The task is gigantic, and though no one human life can hope to complete the work, a combined effort by all field-naturalists and collectors, with the very great assistance supplied by the various organizations in Britain, America,

and on the Continent for the study of local movement, not to mention that most valuable of all schemes—the “ringing” of birds,—will go far to building up an edifice grounded on solid facts, whose completion we must leave to future generations of enthusiasts.

Finally, it must be clear to any reader of this rather fragmentary paper that no exhaustive or complete study of the subject has been attempted. Many points connected with the relation between distribution and migration have been merely suggested, in the hopes that such preliminary mention will stimulate ideas on this, the most attractive phase of an absorbing science.

XXII.—*On Birds from South Annam and Cochin China.*

Part I. PHASIANDÆ—CAMPOPAGIDÆ. By HERBERT C. ROBINSON, M.B.O.U., and C. BODEN KLOSS, M.B.O.U.

(Plates VII.–XI. & Text-figure 3.)

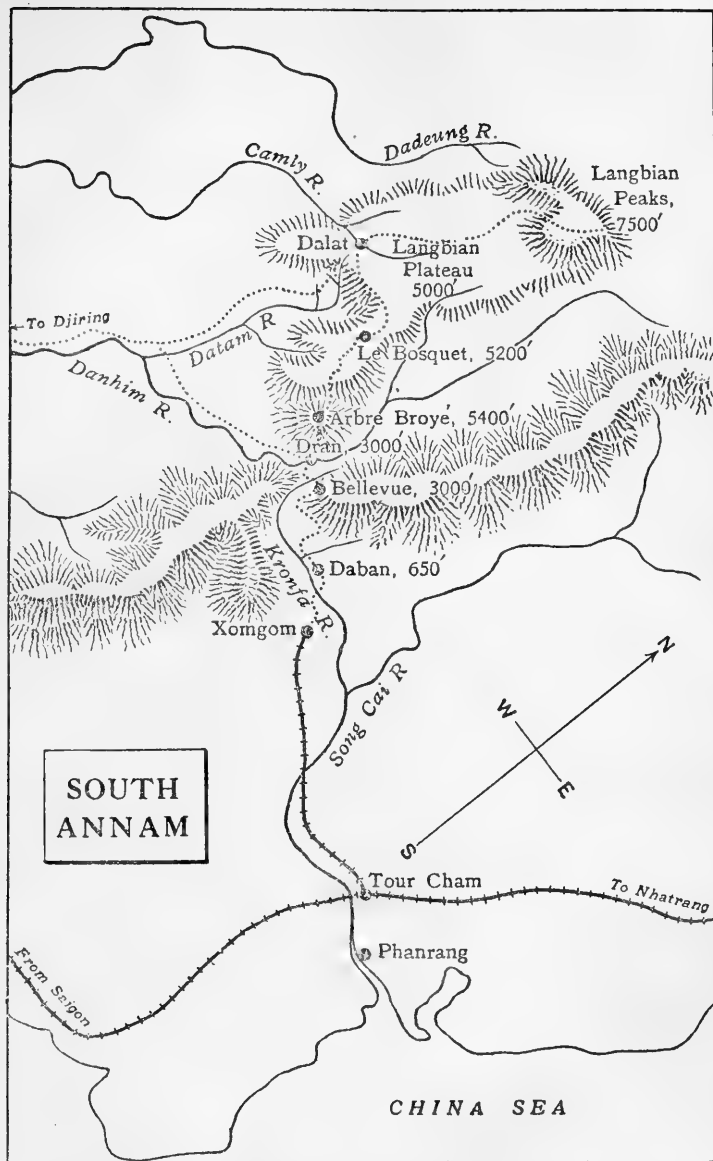
Narrative of the Journey.

By C. BODEN KLOSS.

It is now several years ago since I determined some day to pay a visit to the Langbian region in French Indo-China, partly because it is evidently a most attractive country, little known to English travellers, and partly because there is to be found there that mountain-area, still zoologically unexplored, which is most remote from the fairly well-known upland regions of Burma and Yunnan. I hoped, as the few specimens secured by Mrs. Vassal seemed to indicate and as has proved to be the case, that a rich harvest of novelties would be obtained by the first serious zoological explorer. Early in 1918 my opportunity came with three months' local leave.

The Langbian Plateau (text-figure 3) is situated in southern Annam, and Dalat, the little settlement at its southern side, is about 45 miles distant from Phanrang, a coast town of some local importance in lat. $11^{\circ} 35' N.$, $51^{\circ} W.$

Text-figure 3.



Sketch-map of part of southern Annam to show the localities visited by Mr. Kloss.

After two or three days in Saigon, occupied with local arrangements, I left with three Dyak collectors on 9 March, 1918, in company with my friend Dr. Malcolm Smith, who had come from Bangkok to obtain a change of air and to collect reptiles and batrachians. He brought two native assistants, so that with our boys we were a party of nine and had with us a great quantity of baggage of various kinds—camping-outfit, collecting-apparatus and materials, food, and some warm clothing for the mountains. Late at night we reached Tour Cham, a railway-station some 200 miles from Saigon and four or five inland from Phanrang. The farther north-east we got from Saigon the drier the country and the less luxuriant the vegetation became, until towards the end of the day's journey it was strongly reminiscent of South African scenery.

At Tour Cham we stopped a couple of nights to make arrangements for further progress and do a little collecting; and on my way homewards I remained there from the 19th to the 24th of May for the latter purpose and also to visit Nhatrang farther north along the coast, where there is a famous Cham temple and the Pasteur Institute directed by Dr. Yersin. At Nhatrang had lived also Dr. and Mrs. Vassal, to whom we owe the first knowledge of the fauna of the Langbian Hills. It was the latter's interesting book 'On and off Duty in Annam' which gave me the idea of visiting this region.

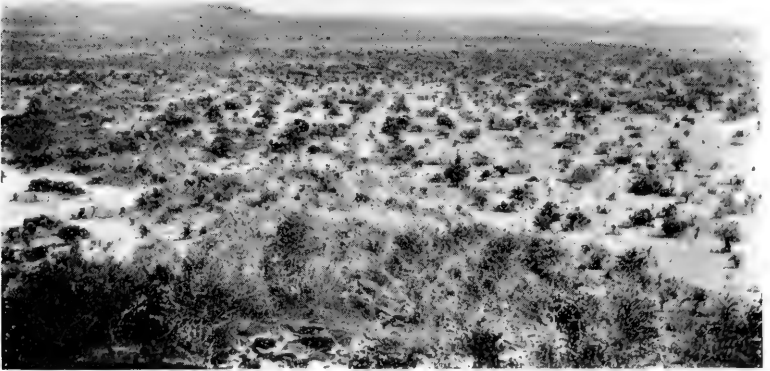
In May the dry season was just ending at Tour Cham, and the time was very unfavourable for collecting; the heat (over 90° F. in the shade), after our rapid descent from the cool climate of the mountains, was very oppressive and the country was much burnt up. The cracked earth was covered with short dry grass, grey-brown in colour and slippery to walk on, and was dotted with small, thorny, almost leafless shrubs; the hills in the neighbourhood were rocky and almost bare, and one might best compare the general aspect with some portions of Mashonaland. This is the appearance of the country for some distance south of Phanrang, with, in addition, sand-dunes along the coast.



NEAR TOUR CHAM, PHANRANG, SOUTH ANNAM.



FOREST AT DABAN, 650 ft., PHANRANG, SOUTH ANNAM.



LANGBIAN PEAKS AND PLATEAU, SOUTH ANNAM.



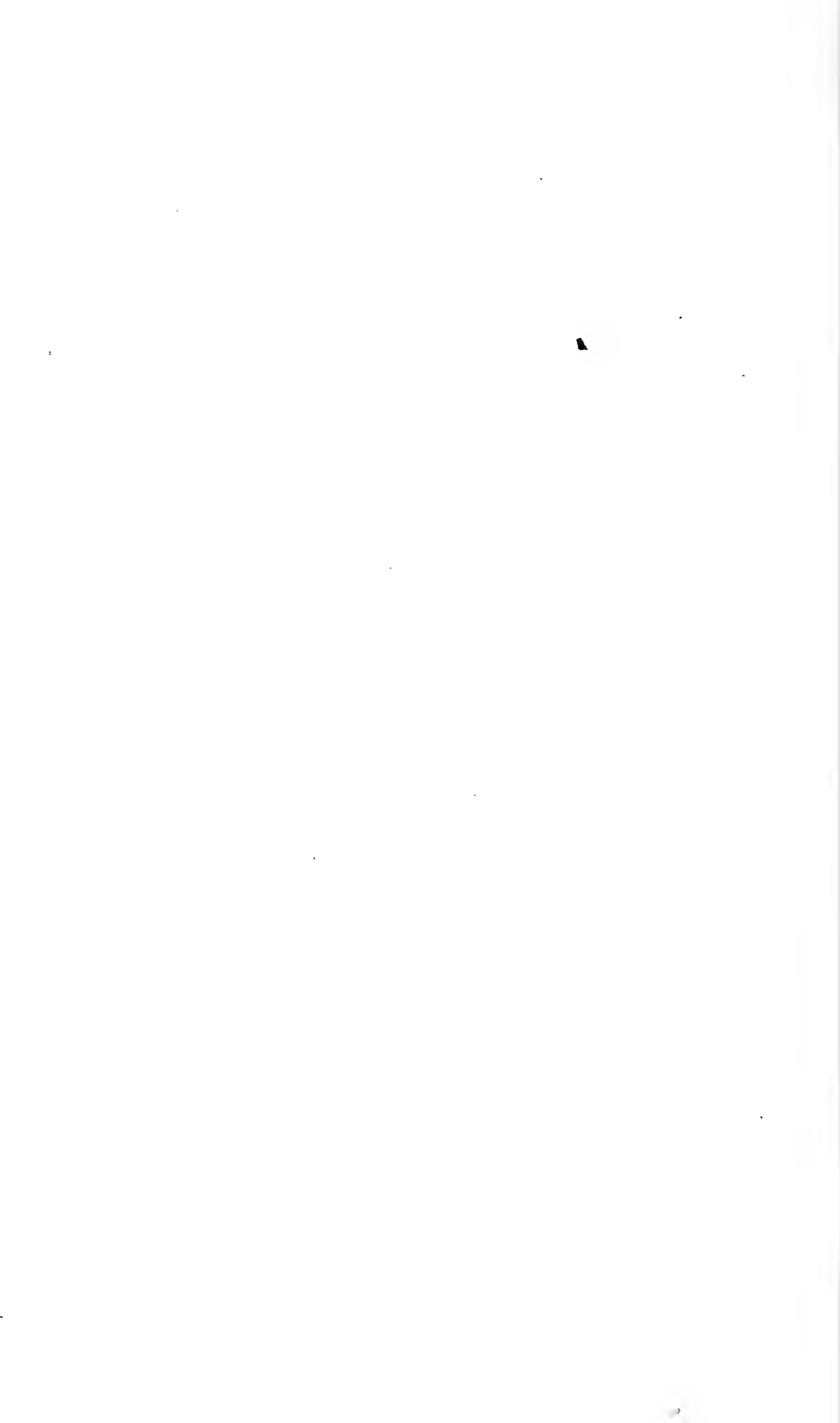
PART OF THE LANGBIAN PLATEAU, SOUTH ANNAM.



CAMP AT DALAT, 5,000 ft., LANGBIAN PLATEAU.



CAMP ON THE LANGBIAN PEAKS AT 6,000 ft.



These are inhabited by enormous numbers of the beautiful lizard *Liolepis belliana*, which the Annamites trap for food; towards Nhatrang the country improves.

Birds were not numerous in species, of which 29 were obtained, though some were numerous in individuals; such were:—

Turnix pugnax rostrata, *Pycnonotus blanfordi*, *Mixornis rubricapilla connectens*, *Copsychus saularis musicus*, *Crypsirhina varians*, *Buchanga atra cacoetha*, *Sturnia malabarica nemoricola*, *Æthiopsar cristatellus brevipennis*, *Graculipica nigricollis*, *Passer flaveolus*, and *Mirafra assamica marionæ*.

The little Minivet, *Pericrocotus peregrinus*, had been quite common in March, but in May we only succeeded in obtaining two examples.

From Tour Cham the route to Dalat lay in a general north-westerly direction all the way. We left at daybreak on 12 March and travelled by a little branch railway running towards the mountains and terminating after twenty-five miles at Xomgom. I had been rather perturbed by the appearance of Tour Cham, but as we proceeded the vegetation improved until at Xomgom we were in forest: though tropical, it was not equatorial, and it appeared quite open and penetrable after the dense Malayan jungle from which I had just come, as there was no crowded undergrowth.

After some hours' delay and a good deal of walking about under the midday sun, we obtained some bullock-wagons and hand-carts for the baggage and continued onwards for four miles to the Annamite village of Daban, situated within the foot of the mountain-range at a height of 650 ft. Here we pitched our camp on the bank of the Kronfa River, which rises on the plateau of Dran above and enters the sea at Phanrang, and remained there for a fortnight. The early morning temperature was about 65° F., and though in the afternoon it sometimes rose to 90° in the shade this was not unpleasant owing to the dryness of the air.

Birds were fairly numerous, but some of them, like Woodpeckers, were hard to get, as the forest was so open and so carpeted with dead dry leaves, which cracked beneath the

feet, that they would take to flight while beyond gunshot. Along the river there was some green undergrowth, but it was almost deserted; the prevailing colour of the foliage was yellow and pink, but when I came back in May everything was clothed with a beautiful tender green.

We got 102 species here, some of which came from heights up to 1500 ft. Jungle-fowl and the Pheasant, *Diardigallus diardi*, were numerous, as was the Collared Dove; on the hill sides I shot two specimens of the beautiful Pygmy Hawk *Microhierax eulomus*, and the little Owl *Glaucidium cuculoides* sometimes perched in the branches above the camp. A common, but hitherto rarely collected bird was the Great Barbet, *Megalæma lagrandieri*; I got here also *Gecinulus grantia*, which has only once been recorded from French Indo China, *G. erythropygius*, and *Chrysophlegma flavinucha pierrei*. Other interesting occurrences were *Thereiceryx flavostrictus*, *Chloropsis aurifrons inornata*, a new form of *Xanthiscus flavesceus*, *Iole olivacea cinnamomeoventris*, *Garrulax moniliger mouhoti*, a new race of *Herpornis xantholeuca*, *Ampeliceps coronatus*, and *Æthopyga siparaja tonkinensis*.

On 29 March I started to transfer my camp some five or six miles uphill, but, owing to an insufficient supply of carriers (Moi men and women from the mountains), two journeys had to be made.

Above Daban the mountains rise steeply, and at 2700 ft. the first pine occurs; at 3000 ft. is reached the edge of the first plateau or shelf in the mountains, and from a spot called Bellevue at the edge a glorious view is obtained down the slopes and across the plain to the coastal hills and the sea. The country at and above 3000 ft. is principally pine-forest (*Pinus Khasya* and *Pinus Merkusii*) and grass-land, but in the gulleys occur stretches of leafy non-coniferous jungle.

With pine-clad hills rising to 4000 ft. close by to the north, from which a few specimens came, we settled down in an empty house in the Annamite village of Suoi-kat, about a mile and a half from Bellevue; but I have labelled all my collections as made at Dran, which is a Government

post about four miles farther west across the level country, because, while the surroundings are similar, it is a much better known place than Suoi-kat, a place-name which also occurs frequently in Annam.

I collected in this pleasant locality and climate on the first occasion from March 29 to April 1, and then, in order to escape as much as possible of the coming wet season at high levels, left for Dalat; but on the return journey we worked this station again from May 9 to 18, when it seemed much warmer and there was almost constant rain from midday to midnight.

Ninety-seven species of birds were obtained altogether, more or less at the 3000 ft. level. A number of them were similar to those collected at Daban; but amongst interesting forms secured at this altitude, many of which were also taken higher up before I came back to Dran and worked it the second time, were *Sphenocercus sphenurus*, *Pitta nepalensis soror*, *Pitta cyanea*, *Volvocivora polioptera*, *Hemixus davisoni*, *Garrulax vassali*, *Pyctorhis sinensis*, *Dryocataphus ignotus cinnamomeus*, *Henicurus guttatus*, *Calliope calliope*, *Suya crinigera cookei*, *Parus monticolus*, *Sitta nagaensis*, *Chalcopteryx singalensis koratensis*, and new species or races of *Arboricola brunneipectus*, *Pyrotrogon erythrocephalus*, *Cyanops oorti*, *Niltava grandis*, *Garrulax*, *Stactocichla merulinus*, *Pomatorhinus olivaceus*, *Turdinulus epilepidotus*, *Alcippe nepalensis*, *Stachyris nigriceps*, *Siva sordida*, *Cutia nepalensis*, *Pterythius æralatus*, *Mesia argentaurus*, *Ægithaliscus*, *Loria curvirostris*, and *Æthopyga sanguineipectus*.

Dran is situated on the Danhim River, one of several headwaters of the Donnai, all of which rise near the Langbian Peaks, while the Donnai enters the Saigon River just above that town. From Dran a road of 45 miles runs to Djiring, 3000 ft., which lies about W.S.W. $\frac{1}{2}^{\circ}$ S. and for more than half the way follows the Danhim River, which it crosses at an altitude of about 2700 ft. While at Dalat, Smith and I made a flying trip to Djiring for the purpose of seeing the country. We dropped rapidly down the mountain-side to Prenn at 3000 ft., and after a few miles along the valley of

the Datam River arrived at the Danhim near the junction of the Dran and Dalat roads. From Dran to Djiring the road runs through a broad continuous valley and plateau, undulating very slightly and passing through grass-land, scrub, and many kinds of forest. In the neighbourhood of Djiring, which is a large Moi* centre, there are considerable areas under rice and much scrub-land, apparently the result of former cultivation. Here I picked up three birds not met with elsewhere:—*Caprimulgus macrurus albonotatus*, *Urocissa occipitalis magnirostris*, and *Pavo muticus*.

It is possible that the fauna of this district differs somewhat from that of Dran, and I would recommend it to anyone who contemplates a visit to the Langbian region. Djiring is connected by a good road of fifty miles with the railway near Phantiet: to the north is the mountain of Tao Duong, a fine hill which is quite isolated and appears to be of larger area than the Langbian Peaks and possibly higher; it rises from the plateau of Cagne, 3000 ft., north of the Donnai River, and its foot is within two days' march.

Two routes led from Dran to Dalat, the valley road along the Danhim and Datam Rivers mentioned above, and a second and shorter track ascending immediately from Dran and running in a north-westerly direction over the hills for about twenty-one miles. Along the latter we marched through pines on 2 April, rising in about four miles to 5400 ft. at Arbre Broyé.

At this spot there was a stretch of green mixed forest, and, as I was told later that a species of Pheasant occurred there which I had not obtained, one of my collectors worked the place while I was staying for the second time at Dran, but he failed to secure the Pheasant or any birds we did not meet with elsewhere.

From Arbre Broyé there is a gradual descent, with slight undulations to Le Bosquet, 5200 ft., where we spent the night in a wayside hut for travellers. Here, during the halt on the return journey, about a score of birds were obtained.

* The name given by the Chinese Annamites to the Indonesian aborigines of the mountains.

On 3 April we walked the remaining eight miles into Dalat along a slightly undulating road, and from a hill within two or three miles of the settlement got a splendid view over the heart of the plateau region: in the foreground open pine forest stretching away to the Langbian Peaks to the north, on the left the open grass-covered plateau about eight by five miles in extent with an average altitude of 5000 ft., undulating and nearly surrounded by low wooded hills. Dalat consists of the houses and offices of half a dozen Government officials, a post-office, a little hotel, two or three bungalows, and a small Annamite village.

We camped for ten days in the pine-woods a few hundred yards from the settlement, and on my return from the Peaks I spent a further week (30 April to 6 May) near some mixed forest a short distance beyond the falls of the Camby River, another headwater of the Donnai. The temperature in the early mornings was about 55°, in the afternoon between 70° and 80°; the evenings were so cool that large camp-fires of pine logs were thoroughly enjoyable.

Some of the more interesting birds, not obtained below Dalat, Le Bosquet, and Arbre Broyé, were *Gennæus annamensis*, *Syrnium newārense*, *Digenia submōniliger*, *Muscicapula melanoleuca*, *Pericrocotus griseigularis*, *Stachyridopsis ruficeps*, *Brachypteryx carolinæ*, *B. nipalensis*, *Malacias desgodinsi*, *Tesia cyaniventris olivæ*, *Geocichla citrina innotata*, *Cichloselys sibiricus*, *Oreocinclā aureus angustirostris*, *Zoothera marginata*, *Turdus obscurus*, *Oreicola ferrea*, *Luscinola luteiventris*, *L. taczanowskia*, *Machlolophus spilonotus*, while new species or subspecies were secured of *Arboricola rufogularis*, *Cyanops franklini*, *Dendrobiastes hyperythra*, *Cryptolopha castaneiceps*, *C. tephrocephala*, *Hemixus tickelli*, *Xanthiscus flavescens*, *Trochalopteron*, *Rimator*, *Pnoepyga pusilla*, *Certhia discolor*, and *Æthopyga gouldiæ*.

Altogether 89 species were obtained at heights between 4500 and 5500 ft.

From Dalat we moved across the open plateau on 14 April and made a camp among oak trees of the Langbian Peaks at 6000 ft., where the highest permanent

water was to be found. Pines were scarce in the neighbourhood, and the south-western face of the Peaks, where collections were principally made, was covered with mixed forest with some undergrowth; on the ridges and the Peaks themselves (7500 ft.) occurred pines, oaks, and dense small forest and shrub.

We had a very unpleasant time setting up camp in a severe rain-storm when the hill side was flooded with running water, but for the next week the weather was fine; it changed, however, when Smith left for Bangkok on the 21st, and the remaining week of my stay was made unpleasant by heavy rain regularly after midday. The early morning temperature was about 52° and that of the afternoon 65°; cold winds prevailed at night.

The Langbian massif is not large and there were no hills of equal heights in the neighbourhood, while the area of forest is too small perhaps to shelter many high-level species. The following were, in my experience, confined to heights above 6000 ft., and I do not think that future ornithological visitors will add much to the list:—*Chalcophaps indica*, *Muscicapa strophilata*, *Cochoa viridis*, *Sylviparus modestus*, *Dicaeum ignipectus*, and new species of *Cryptolopha*, *Pseudominla*, and *Cissa*.

Between 5500 ft. and the summit of the Peaks, 7500 ft., a total of fifty-seven species was obtained in a fortnight's sojourn.

From the Peaks I returned to Saigon, stopping to collect again as narrated above, at Dalat, Dran, and Tour Cham.

The Langbian region lies very near the southern extremity of the Annamite mountain-chain, which except for several narrow gaps, the most important of which lie behind Quang-Binh, Quang-Tri, and Cape Varella, maintains a respectable height throughout its course from where it leaves the elevated regions of northern Laos and Yunnan. At several points it rises to over 8000 ft.

Of collecting-grounds known to British ornithologists the plateau perhaps most closely resembles—in its pine and oak forests, bracken, and open grass stretches—the Shan States;

but I found a smaller Shan element in its avifauna than its conditions would lead one to expect. Its investigation has, nevertheless, greatly extended the known range of a considerable number of species, and besides obtaining many new forms it was a great pleasure to discover the farthest south of such typically holarctic birds as the Cross-bill and Tree-creeper.

I did not, as I had hoped, meet with a Bullfinch nor with the wonderful Pheasant *Rheinardius ocellatus*, but I was shown a set of the tail-feathers of the latter, the centre pair seven feet long, which was stated to have come from the mountains behind Nhatrang.

The rainy season at Dalat is from April to October, and this is also the period of most equable temperature. The dry season lasts from mid-November to mid-April, and though the nights are considerably colder than in summer the days are also hotter. In February three or four degrees of frost are sometimes experienced, and in that month and March the diurnal range of temperature may be between 30° and 90° F., whereas in August and September it is between about 50° and 80° F. The winter season is much the pleasanter time for a visit.

It was not originally my intention to do any collecting in Cochin-China, but an opportunity arose after returning to Saigon, as, owing to changes in steamer movements, we were delayed there for a fortnight. When travelling to Annam I had noted an area of high green forest surrounding the station of Trang Bom, some thirty-two miles from Saigon by rail and twelve east of Bienhoa on the Donnai River. Collecting was carried on here from 30 May to 6 June. The forest seemed to cover at most a few square miles of flat land: it consisted of high trees—perhaps the highest met with on the trip—and fairly dense undergrowth, but work was made easy by the existence of many straight rides which had been cut through it.

The avifauna was very different from that of Tour Cham: fifty-one species were obtained, the most interesting being

Tropidoperdix chloropus, *Hypotrionchis severus*, *Megalama lagrandieri*, *Thereiceryx lineatus*, *Dendrocopus analis*, *Chrysophlegma flavinucha pierrei*, *Graucalus macei siamensis*, *Ægithina lafresnayeii xanthotis*, *Dryonastes chinensis germaini*, *Garrulax moniliger monhoti*, *Cissa hypoleuca*, and a new form of *Pomatorhinus tickelli*.

Altogether in seventy collecting-days 1525 specimens were obtained, representing 235 species, 34 of which appear to be new. I fear that this excursion will prove to be my ornithological acme, but must consider myself fortunate to have found a district so little known and yet so easily accessible and pleasant to work.

Introduction and List of Literature.

The avifauna of French Indo-China in general, and to an even greater extent that of Annam in particular, has been comparatively little studied by ornithologists, and but little has been written of it even in French journals.

The most important contribution is that of Oustalet, "Les Oiseaux du Cambodge," which includes a full synonymy up to the date at which it was written, but unfortunately only two parts were completed.

The following is a list of the principal publications on the subject:—

OUSTALET, E.—Les Oiseaux du Cambodge, du Laos, de l'Annam et du Tonkin. Part i. *Nouv. Arch. Mus. Paris*, 4th ser. i. 1899, pp. 221–296, pls. ix., x. Part ii. *Ibid.* v. 1903, pp. 1–94, pls. i.–viii.

This work we have quoted for the sake of brevity as "Oustalet."

OGILVIE-GRANT, W. R.—Description of Three new Birds from Annam; collected by Dr. J. J. Vassal. *Bull. Brit. Orn. Club*, xix. 1906, pp. 12–13.

KURODA, N.—A Collection of Birds from Tonkin. *Annot. Zool. Japon.* ix. 1917, pp. 217–254.



ARBORICOLA RUFOGULARIS ANNAMENSIS.

TIRAUT, G.—Les Oiseaux de la Basse Cochin-Chine. Bull. du Comité agricole et industriel de la Cochin-Chine, i. no. 1, 1879.

OUSTALET, E. et MENEGAUX, A.—Catalogue des Oiseaux de la Basse Cochin-Chine. Bull. Soc. Nat. d'Acclim. France, 1905, pp. 169–184; 1907, pp. 43–51, 83–86, 148–154.

The present collection shows that our knowledge of the birds of Indo-China has been, and is certainly still, far from complete, and we have therefore attempted no analysis of the avifauna of the region.

The great majority of those species which are not typically Indo-Chinese (*i. e.* whose true home is east of the Brahmaputra) are distinctly Himalayan. The occurrence of such Malayan species as *Cyanops oorti* is rather a surprise, but in the lowlands certain Malayan birds appear to attain the known limit of their range. We might have expected some of the more typical Chinese forms to have occurred in the Langbian Highlands, but such does not appear to be the case.

List of Species obtained.

1. *Arboricola rufogularis annamensis*, subsp. nov. (Pl. X.)

Most nearly allied to *A. r. rufogularis* Blyth*, from Burma and Tenasserim (type from lower Sikkim), but with the crown almost uniform dark olive-brown, the feathers only very obscurely and narrowly edged with black. Rufous of the chin and upper throat succeeded by a pure white band with narrow black tips to the feathers; this band again separated from the grey of the upper breast by a narrow black band formed by a broad median black bar to the feathers.

Forehead dark grey, lores almost blackish; a narrow grey superciliary stripe with black shaft-stripes to the feathers, broadening and becoming paler on the nape; a narrow white stripe from the nostril to the ear-coverts, the feathers beneath the eye with black tips; ear-coverts ashy brown bordered above with a blackish line, lower cheeks and a

* Journ. Asiat. Soc. Bengal, xviii. 1849, p. 819.

stripe from the gape to the ear-coverts pure white; chin whitish with black tips to the feathers; lower chin and throat and a large patch, brightening on the sides of the neck, rufous chestnut, with clear black tips to the feathers, heavier on the sides of the neck; lower throat pure white with black tips to the feathers; beneath this a narrow black band separating the throat from the underparts. Crown and nape dark bistre slightly squamated with black; mantle, back, rump, and upper tail-coverts lighter, more olive, the rump and tail-coverts with triangular black spots; the mantle obscurely edged with blackish and with fine dark shaft-stripes. Lesser upper wing-coverts olive, outer ones black edged with chestnut on the outer webs and tipped with greyish olive; secondary coverts and tertiaries edged with rich chestnut, a large greyish-olive spot on the outer web and a large black one on the inner web, many of the feathers with clear white shaft-stripes. Primaries brownish black with pale tips, secondaries the same, the outer webs with a chestnut-buff border, the extreme edge lighter, broadening into buffy on the tips. Quill-lining dark grey, outer coverts black, inner greyish white; axillaries greyish white with sooty black bases. Upper breast dark grey, abdomen buffy white; under tail-coverts black, basally barred with ochraceous and with silky white tips; many of the feathers with an ochraceous patch on each web. Flanks grey, the pectoral feathers edged with bistre, the abdominal ones with clear chestnut; most of the feathers with a clear white shaft-stripe broadening towards the tips; thighs greyish tipped with rufous. Tail-feathers above dull bistre vermiculated with black and with a triangular black subterminal patch; beneath dark grey with a black subterminal band and a lighter grey tip. "Iris dull brown, orbital skin and gape dull carmine, feet coral-red, bill black."

Total length 280; wing 142; tail 54; tarsus 38 approx. bill from gape 25 mm.

The adult female does not appear to differ appreciably from the male, but has the upper throat rather white. Soft parts as in the male.



ARBORICOLA BRUNNEPECTUS ALBIGULA.

Total length 270; wing 132; tail 50; tarsus 37·5; bill from gape 24 mm.

4 ♂ ad., 2 ♀ ad. Langbian Peaks, 6-7500 ft., S. Annam. 15-16 April, 1918.

1 ♂ vix ad., 1 ♀ ad. Arbres Broyés, 5400 ft., S. Annam. 15 May, 1918.

3 ♂ ad., 1 ♂ vix ad., 1 ♂ juv., 1 ♀ ad. Dalat, 5000 ft., S. Annam. 12 April-2 May, 1918.

Types. ♂ ♀. Langbian Peaks, 7200 ft. 16 April, 1918.

Males. Total length 280, 290, 285, 280, 285, 290, 285, 282, 285; wing 142, 147, 146, 144, 143, 147, 146, 147, 147, 137; tarsus 38, 41, 39, 41, 39, 41, 41·5, 41, 41, 39, 38·5 mm.

Females. Total length 280, 270, 275, 260; wing 132, 132, 134; tarsus 37·5, 39, 37, 38 mm.

Birds that appear rather less adult have elongated white shaft-stripes on the feathers of the side of the breast: in a half-grown bird with the down still on the throat they are larger and more evenly distributed over the whole of the lower surface.

Arboricola rufogularis, to which this bird is closely allied, has not been recorded from farther east than the hills of the Burmo-Chinese border and in the south from the Muleyit range in Tenasserim.

We have compared this series with a specimen from Toruputu Peak, Daffa Hills (*Godwin-Austen*), and one from Loi San Pa, South Shan States (*Bingham*), and find our birds to differ in the very much greater extent of white on the throat and fore-neck and in the lesser extent of the chestnut of the flanks, which is paler in tint.

2. *Arboricola brunneipectus albigula*, subsp. nov. (Pl. XI.)

Differs from *A. b. brunneipectus* * Tick., of Burma and Tenasserim, in having the forehead and superciliary stripes mingled white and buff and the throat pure white; and from *A. b. hewici* † Oust., of Tonkin and northern Annam,

* Tickell, in Blyth, Journ. Asiat. Soc. Bengal, xxiv. 1855, p. 276.

† Oustalet, Bull. Mus. Paris, ii. 1896, p. 317; Nouv. Arch. Mus. Paris (4) i. 1899, pl. ix.

in the presence of superciliary stripes and the absence of a rufous chin and chestnut forehead.

Adult male. Forehead greyish white tinged with buff and narrowing into a purer white superciliary stripe terminating on the nape in pure white feathers with black tips; lores, a stripe surrounding the eyes, and a patch on the sides of the neck superior to the ear-coverts, and the nape deep black; crown and sinciput also black, the bases of the feathers of the crown olive-brown as the back; back, mantle, rump, and upper tail-coverts olive-brown regularly barred with black; outer wing-coverts olive-grey mottled with black on the outer webs, and washed with chestnut and with large black spots on the inner webs; secondary coverts and tertiaries light olive-grey on the outer webs, the inner webs broadly tipped with black subterminally and tipped and edged with rich chestnut; primaries brownish black, the tips mottled with rufous buff on the outer webs, the secondaries the same, broadly edged with pale chestnut externally; quill-lining grey, the inner coverts whitish, the outer blackish, the axillaries dark grey broadly edged with whitish grey. Chin, lower cheeks, and upper throat pure white, lower throat sparsely feathered, pure white with terminal guttate black tips to the feathers, ear-coverts whitish tinged with brown posteriorly, chest olive-buff with a reddish tinge more marked on the sides of the breast; middle of the abdomen whitish, flanks greyish olive, each feather with a large ovate white spot subterminally and a black tip; thighs olive-brown; central under tail-coverts with dark fuscous bases and buffy-white tips, the outermost olive-brown on their outer webs barred with black; tail-feathers olive-brown irregularly barred and mottled with black. "Iris brown, bare skin of head and neck red, bill black, feet dull pale coral-pink."

Total length 290; wing 143; tail 50; tarsus 42; bill from gape 26 mm.

1 ♂. Dran, 3000 ft., S. Annam. 11 May, 1918 (Type).

3 ♂ ad., 1 ♀ vix ad. Dran, 3000 ft., S. Annam. 1 April-12 May, 1918.

1 ♂. Arbre Broyé, 5400 ft., S. Annam. 15 May, 1918.

1 ♂. Le Bosquet, 5000 ft., S. Annam. 8 May, 1918.

Males. T. L. 290, 285, 275, 295, 290, 285; W. 143, 135, 138, 143, 145, 138; Ts. 42, 39, 40, 44, 42, 40 mm.

Female. T. L. 272; W. 138; Ts. 38 mm.

The series is fairly uniform; some birds, apparently rather younger, have the sides of the breast less olive, more tinged with rufous, and a greater proportion of olive-brown in the feathers of the crown. The female, which is a good deal younger, has the forehead and supercilia brownish buff.

In its pure white throat free from any tinge of buff it is evident that this form is distinct, though not very markedly so from the typical *A. b. brunneipectus*, which has not been recorded from farther east than north-western Siam. From *A. b. henrici*, if the published description and figure by Oustalet are to be relied on, it is much further removed.

3. *Tropicoperdix chloropus* Tick.

Tropicoperdix chloropus Tick.; Blyth, Journ. Asiat. Soc. Bengal, xxviii. 1859, p. 415; Robinson, Ibis, 1915, p. 721 (S.E. Siam).

1 ♀. Trang Bom, Cochin China. 1 June, 1918.

T. L. 270; W. 143; Ts. 34.

Apparently quite typical.

4. *Francolinus chinensis* (Osbeck).

Ogilvie-Grant, Cat. Birds Brit. Mus. xxii. 1893, p. 136; Kloss, Ibis, 1918, p. 81.

4 ♂, 2 ♀ ad. Dran, 3000 ft., S. Annam. 30 March-14 May, 1918.

1 ♂ ad. Arbre Broyé, 5400 ft., S. Annam. 14 May, 1918.

1 ♂, 1 ♀ ad. Langbian Peaks, 6-7500 ft., S. Annam. 17 April, 1918.

Male. "Iris hazel; bill black; feet ochraceous."

Female. "Iris hazel; maxilla black, sides of base fleshy grey; mandible fleshy grey, tip black; feet deep ochraceous."

Males. T. L. 330, 335, 320, —, 310, —; W. 147, 143, 141, 143, 140, 138; Ts. 38, 38, 38.5, 38, 37, 39 mm.

Females. T. L. 303, 303, —; W. 137, 138, 126; Ts. 37, 39, 37 mm.

5. *Gennæus annamensis* Ogilvie-Grant.

Gennæus annamensis Ogilvie-Grant, Bull. Brit. Orn. Club, xix. 1906, p. 13.

Gennæus nycthemerus annamensis Baker, Journ. Bombay Nat. Hist. Soc. xxiii. 1915, p. 686.

1 ♀ ad. Dalat, 5000 ft., S. Annam. 8 April, 1918.

6 ♂ ad., 6 ♀ ad., 1 ♀ imm., 1 pull. Langbian Peaks, 6–7500 ft., S. Annam. 25–27 April, 1918.

Adult male. "Iris hazel to brown, facial skin etc. blood-red; maxilla blackish, sides at the base greenish horn; mandible dull pale green, blackish at the tip; tarsi cerise, soles dull yellow, claws olive-brown."

Adult female. "Iris bright ochre, hazel, or brown, facial skin blood-red; bill and feet as in male."

Immature female. "Iris dull brown, facial skin dull pale red; maxilla blackish with pale edges; mandible greenish fleshy with olive tip; tarsi and toes pale cerise."

Pull. "Iris grey; bill dull brownish fleshy; feet dull pink."

Males. T. L. 650, 645, 730, 700, 745, 685; W. 225, 240, 235, 240, 225, 240; Ts. 82, 84, 85, 92, 91, 85 mm.

Females. T. L. 560, 560, 620, —, 625, 585, 600; W. 205, 202, 218, 210, 230, 225, 230; Ts. 80, 77, 75, 75, 78, 77, 79 mm.

Greatest length of tail, male 355; female 255 mm.

The males of the above series are all fully adult, though one specimen has the facial wattle less developed than in the others. They are very uniform, the only variation being in the white lines on the inner secondaries, which in two specimens are somewhat wider apart, giving a darker appearance to the upper surface. One specimen has the thighs partially barred black and white, these being entirely black in the other birds.

The adult females from the Langbian Peaks are also very uniform, the only difference being in the tail, which varies considerably in the amount of vermiculation; this is almost absent in some specimens. In the bird from Dalat, however, the vermiculations are very much coarser and there are also oblique buffy black-edged bars. The inner primaries and secondaries are also somewhat coarsely vermiculated with narrow ochreous-buffy bars, black-edged towards their tips; and the upper surface generally is extremely finely vermiculated. Failing further evidence we are, however, unable to accept this bird as representing another form.

A half-grown female from the Langbian Peaks resembles the adults, but has the remains of a younger plumage, of which the feathers of the back are more rufescent, clearly and boldly barred with black and with pale buff tips. Beneath, the centre of the belly is more greyish than in the adults. The throat is dull white and there are two distinct rounded dirty white malar patches.

The chick in down is pale lemon-yellow beneath; head rufous buff; mantle black with rufous tips; thighs rufous externally, lemon-white internally.

Three species of this genus have been described from Annam, viz., the present form, *Gennæus beli* *, from the neighbourhood of Hue, which, as Stuart Baker points out, is very close indeed to the present form, and *Gennæus edwardsi* †, from Kuang-Tri, slightly farther to the north. The figure of this species [Nouv. Arch. du Muséum, 4th series, Mémoires, vol. i. pl. 10], which seems to have escaped Stuart Baker's notice, shows that it belongs to a totally distinct section of the genus, and that there can be no question of its identity with either of the other forms.

6. *Diardigallus diardi* (Bp.).

Lophura diardi (Bp.); Ogilvie-Grant, Cat. Birds Brit. Mus. xxii. 1893, p. 290; id. Bull. Brit. Orn. Club, xix. 1906, p. 14; Kloss, Ibis, 1918, p. 80.

* Oust. Bull. Mus. Paris, 1898, pp. 258, 261.

† Oust. Bull. Mus. Paris, 1896, 1 p. 316-317.

2 ♂ ad., 1 ♂ vix ad., 3 ♀ vix ad. Daban, 650 ft., S. Annam. 14-15 March, 1918.

1 ♀ ad. Trang Bom, Cochin China. 6 June, 1918.

Adult male. "Iris orange or vermilion, facial skin blood-red, throat-skin deep pink; bill pale horny; tarsi cerise, spurs horny."

Subadult male. "Iris hazel, facial skin blood-red, throat-skin deep pink; bill pale grey with a brown cere; tarsi cerise, spurs horny."

Subadult female. "Iris orange-brown to bright hazel, facial skin blood-red, throat-skin deep pink; maxilla blackish, mandible paler below; tarsi cerise, spurs horny."

The not quite adult males differ from the adult in having the grey of the breast and back less clear and slightly vermiculated with blackish, the shining edges to the feathers of the belly less developed, and the gold of the back with grizzled grey patches similar to the mantle. The fully adult female has the chestnut of the upper and under surface deeper, the lower mantle not vermiculated, the tail darker, more finely vermiculated, while the barred effect which becomes progressively more marked in younger birds shows a tendency to disappear.

Males. T. L. 790, 765, 640; W. 240, 245, 225; Ts. 95, 90, 91 mm.

Females. T. L. 530, 560, 565, —; W. 207, 209, 218, 215; Ts. 75, 78, 78, 76 mm.

Greatest length of tail, male 390; female 240 mm.

7. *Polyplectrum bicalcaratum germaini* Elliot.

Polyplectrum germaini Elliot; O.-Grant, Cat. Birds Brit. Mus. xxii. 1893, p. 357; id. Bull. Brit. Orn. Club, xix. 1906, p. 14; Baker, Journ. Bombay Nat. Hist. Soc. xxiv. 1916, p. 221.

2 ♂ ad. Daban, 650 ft., S. Annam. 16-22 March, 1918.

"Iris brown, orbital skin dull crimson; maxilla horny, mandible fleshy, sides of bill dull pink; feet leaden black."

T. L. 590, 595; W. 220, 195 (worn); T. 325, 335; Ts. 70, 66.

This form seems little more than a subspecies of *P. bicalcaratum* from the eastern Himalayas, of which *P. b. chinquis* is the Burmese representative.

8. *Gallus gallus* (Linn.).

Kloss, Ibis, 1918, p. 81.

1 ♂, 2 ♀. Trang Bom, Cochin China. 1-6 June, 1918.

3 ♂, 2 ♀. Daban, 650 ft., S. Annam. 18-23 March, 1918.

Male. "Iris orange to brown, ear-lappet bluish white; maxilla horny brown, mandible horny yellow or brownish grey; feet leaden black."

Males. W. 215, 220, 211, 222 mm.

Females. W. 192, 195, 190, 195 mm.

9. *Pavo muticus* Linn.

Ogilvie-Grant, Cat. Birds Brit. Mus. xxii. p. 371.

1 ♀ vix ad. Djiring, 3000 ft., S. Annam. 10 April, 1918.

T. L. 1050; W. 425 mm.

"Lower eyelid greenish, edge of eyelids dull black; bill black, base of lower mandible bluish grey; bare skin surrounding the eyes turquoise tinged with cobalt; lower and posterior bare areas gamboge-yellow finely vermiculated with green; feet black."

Peacocks were seen on the river-banks between Xomgom and Daban.

10. *Turnix pugnax rostrata* Swinh.

Turnix rostrata Swinhoe, Ibis, 1865, pp. 542-544.

Turnix pugnax atrogularis Baker (nec Eyton), Journ. Bombay Nat. Hist. Soc. xxiii. 1905, p. 405.

2 ♂ ad., 1 ♂ imm., 1 ♀ vix ad. Tour Cham, Phanrang, S. Annam. 20-21 May, 1918.

1 ♀ ad. Dran, 3000 ft., S. Annam. 15 May, 1918.

Male. "Iris yellowish white; maxilla blackish, edges plumbeous; mandible pale plumbeous; feet fleshy grey."

Female. "Iris yellowish white; maxilla pale grey, base

and tip darker; mandible pale grey; feet pale grey blotched yellowish and bluish."

Male. T. L. 150, 155; W. 80, 83; Ts. 21, 23 mm.

Female. T. L. 150, 177; W. 78, 86; Ts. 23, 25 mm.

We have followed Mr. Stuart Baker (*loc. cit.*) in his arrangement of the subspecies of *T. pugnax*, but have not adopted his name of *T. p. atrigularis* for this race. *Hemipodius atrigularis* Eyton was founded on a Malayan specimen, as a reference to the original description (P. Z. S. 1839, p. 107) will show.

Quail were met with in the open grass-land of the Langbian Plateau at 5000 ft., when travelling between Dalat and the Peaks, but none were obtained.

11. *Sphenocercus sphenurus* (Vig.).

Salvad. Cat. Birds Brit. Mus. xxi. p. 8; Oustalet, Bull. Mus. Paris, 1896, p. 185; Stuart Baker, Indian Pigeons and Doves, 1913, p. 80.

1 ♂ ad. Dran, 3000 ft., S. Annam. 31 March, 1918.

1 ♂ ad., 1 ♀ imm. Langbian Peaks, 5-7500 ft., S. Annam. 18-23 April, 1918.

Male. "Iris, inner ring sky-blue, outer pink; bill greyish blue, tip of upper mandible slightly greenish, cere at sides sky-blue; feet cerise, claws yellowish green."

Males. T. L. 303, 300; W. 160, 167; T. 122, 128 mm.

Female. T. L. 265; W. 153; T. 109 mm.

Though these specimens are rather small, we can detect no difference in coloration between them and the descriptions of Salvadori, Blanford, and Stuart Baker. The orange tinge on the forehead is not perceptible, and there is only the faintest trace of orange-pink on the sides of the breast. The maroon-colour of the scapulars does not extend to the mantle. It may here be noted that, contrary to the statements of most authorities, the third primary is distinctly sinuate on the inner web--at any rate, in males.

The species has not previously been recorded from Cochin China. Oustalet (*loc. cit.*) has listed it from the collections of Prince Henri d'Orléans obtained in Yunnan.

12. *Treron curvirostra nipalensis* (Hodgs.).

Treron nipalensis (Hodgs.) ; Salvad. t. c. p. 34 ; Baker, Indian Pigeons and Doves, 1913, p. 66, pl. 5.

Treron curvirostra nipalensis Robinson, Ibis, 1915, p. 721 ; id. Journ. Fed. Malay States Mus. vii. 1917, p. 135 ; Kloss, Ibis, 1918, p. 82.

1 ♂ ad. Trang Bom, S. Annam. 1 June, 1918.

1 ♂, 1 ♀ ad. Tour Cham, S. Annam. 21 May, 1918.

1 ♂. Dran, 3000 ft., S. Annam. 31 March, 1918.

2 ♂, 2 ♀. Daban, 5000 ft., S. Annam. 14-18 March, 1918.

Male. "Iris ochreous, orbital skin apple-green ; bill pale yellowish, base blood-red ; feet cerise."

Female. "Iris pinkish yellow, orbital skin pale emerald-green ; bill greenish ivory-yellow ; cere and feet cerise."

Males. T. L. 270, 277, 275, 275, — ; W. 143, 141, 147, 148, — mm.

Females. T. L. 260, 265, 255 ; W. 143, 143, 138 mm.

These birds are paler and decidedly larger than the Sumatran form *T. c. curvirostra* (Gm.), which, as Stuart Baker correctly points out, is found in Borneo, Sumatra, and the southern extremity of the Malay Peninsula. Birds from the Langkawi and Terutau Islands and Trang, southern peninsular Siam, are intermediate, having the wing about 137 mm. The fulvous tint on the breast is very marked on three out of the five males listed, but not more so than in specimens in the F. M. S. Museums from Terutau I. and from Mapor I. in the Rhio Archipelago, south-east of Singapore.

13. *Ducula insignis griseicapilla* (Wald.).

Carpophaga griseicapilla Salvad. t. c. p. 217 ; O.-Grant, P. Z. S. 1900, p. 501 (Hainan).

Carpophaga insignis griseicapilla Stuart Baker, Indian Pigeons and Doves, 1913, p. 104, pl. 8.

1 ♂, 1 ♀. Dran, 3000 ft., S. Annam. 29 March, 1918.

3 ♂. Dalat, 5000 ft., S. Annam. 12 April-4 May, 1918.

"Iris white, or pale grey tinged with yellowish, eyelid

black ; bill and cere livid red, tip of upper mandible grey or brownish ; feet livid crimson or purplish crimson."

Males. T. L. 465, 445, 475, 470 ; W. 243, 233, 242, 240 ; T. 196, 192, 196, 205 mm.

Female. T. L. 450 ; W. 228 ; T. 187 mm.

The sexes are similar. These birds are perfectly typical *D. i. griseicapilla*, having the crown pure grey to behind the level of the ear-coverts, sharply defined from the vinaceous nape. Though recorded from Hainan, where it seems to occur intermixed with the true *D. i. insignis* Hodgs., it has not hitherto been noticed in French Indo-China, though Grant records *Ducula badia* from south-west Yunnan (Ibis, 1900, p. 605).

14. *Cenopelia tranquebarica humilis* (Temm.).

Turtur humilis Salvad. t. c. p. 434.

Cenopelia tranquebarica humilis Stuart Baker, Indian Pigeons and Doves, 1913, p. 234, pl. 23 ; Kloss, Ibis, 1918, p. 84.

1 ♂ ad. Tour Cham, Phanrang, S. Annam. 22 May, 1918.

1 ♀, 1 ♀ imm. Daban, 650 ft., S. Annam. 22 March, 1918.

2 ♂, 1 ♀ ad. Dran, 3000 ft., S. Annam. 29 March, 1918.

Male. "Iris dark, orbital skin grey, bill and feet black."

Female. "Tarsi purplish black or brownish leaden."

Immature female. "Tarsi dark crimson-brown."

Males. T. L. 240, 245 ; W. 132, 143, 137 mm.

Females. T. L. 230, 235 ; W. 132, 133 mm.

The bird from Tour Cham is slightly paler, less vinaceous beneath than the other specimens.

15. *Streptopelia suratensis tigrina* (Temm.).

Turtur tigrinus Salvad. t. c. p. 440.

Streptopelia suratensis tigrina Stuart Baker, Indian Pigeons and Doves, 1913, p. 121, pl. 11 ; Robinson, Ibis, 1915, p. 724 ; Kloss, Ibis, 1918, p. 83.

1 ♂, 3 ♀ ad. Daban, 650 ft., S. Annam. 14-18 March, 1918.

1 ♀ ad. Dran, 3000 ft., S. Annam. 14 May, 1918.

Male. "Iris pinkish yellow, bill black, feet cerise."

Female. "Iris pinkish yellow, orbital skin grey, maxilla dull grey, mandible black, feet livid red."

Male. T. L. — ; W. 146 mm.

Females. T. L. 300, 307, 314, — ; W. 139, 142, 145, 140 mm.

About the same size as birds from the northern Malay Peninsula, smaller than those from Siam.

16. *Chalcophaps indica* (Linn.).

Chalcophaps indica Salvad. t. c. p. 514 ; Hartert, Nov. Zool. xvii. 1915, p. 195 (Hainan).

4 ♂ imm., 1 ♀ imm. Langbian Peaks, 6–7500 ft., S. Annam. 24–25 April, 1918.

“Iris dark brown, orbital skin dark grey ; bill, tip reddish brown, base purplish brown ; feet livid.”

These birds are all immature with remains of the juvenile barred plumage on the under surface and with much rufous chestnut on the wing-coverts.

Total length : males, 235, 240, 240, 245 ; female 230 mm.

17. *Sarcogrammus indicus atrinuchalis* (Jerd.).

Sarcogrammus atrinuchalis (Jerd.) ; Sharpe, Cat. xxiv. 1896, p. 152 ; Robinson, Ibis, 1915, p. 725 ; Kloss, Ibis, 1918, p. 85.

1 ♀ ad. Tour Cham, Phanrang, S. Annam. 20 May, 1918.

“Iris red, eyelid edge and cere red ; bill, tip black, base red ; feet greenish yellowish.”

Female. T. L. 313 ; W. 204 ; Ts. 72 mm.

The Wattled Plover was also observed near Dàlat at 5000 ft.

18. *Gallinago stenura* (Bp.).

Sharpe, t. c. p. 619.

1 ♂ ad., 1 ♀. Dàlat, 5000 ft., S. Annam. 7–12 April, 1918.

T. L. 255, 260 ; W. 123, 129 ; Ts. 30, 34 ; bill from gape, 55, 64 mm.

Snipe were also seen near Dran.

19. *Ardeola grayi* (Sykes).

Kloss, Ibis, 1918, p. 86.

1 ♀. Daban, 650 ft., S. Annam. March 1918.

Wing 205 ; tarsus 54 ; bill from gape 74 mm.

20. *Ardeola bacchus* (Bp.).

1 ♂. Daban, 650 ft., S. Annam. 18 March, 1918.

"Iris lemon, facial skin yellow and olive; maxilla black, base and sides yellow and olive; mandible yellow and olive tipped with black; feet yellowish olive."

T. L. 520; W. 213; Ts. 57; bill from gape 79 mm.

21. *Dendrocygna javanica* (Horsf.).

Salvad. Cat. xxvii. 1895, p. 156.

1 ♂, 1 ♀ ad. Tour Cham, Phanrang, S. Annam. 23 May 1918.

Male. T. L. 410; W. 183 mm.

Female. T. L. 378; W. 184 mm.

22. *Pseudogyps bengalensis* (Gm.).

Oustalet, p. 229.

1 ♀. Dran, 3000 ft., S. Annam. 16 May, 1918.

"Iris dark, neck grey; bill black, tip of maxilla yellowish grey; feet blackish leaden."

T. L. 820. Expanse 2000 mm.

23. *Astur badius poliopsis* (Hume).

Oustalet, p. 238; Kloss, Ibis, 1918, p. 87.

Accipiter badius poliopsis Hartert, Nov. Zool. xvii. 1910, p. 207.

1 ♀ ad. Trang Bom, Cochin China. 5 June, 1918.

3 ♂ ad., 2 ♀ imm. Daban, 650 ft., S. Annam. 21-27 March, 1918.

Male. "Iris pale crimson, cere yellow-olive; bill black, sides at base grey; feet dull yellow."

Males. T. L. 310, 310, 315; W. 184, 195, 199 mm.

Females. T. L. 340, 340, 350; W. 210, 205 (imm.), 202 (imm.) mm.

Agreeing fairly well with specimens from peninsular Siam and the northern parts of the Malay Peninsula.

24. *Spilornis cheela rutherfordi* (Swinh.).

Hartert, Nov. Zool. xvii. 1910, p. 212; Robinson, Ibis, 1915, p. 729.

1 ♂, 1 ♀ ad. Trang Bom, Cochin China. 5-6 June, 1918.

Male. T. L. 600 ; W. 423 mm.

Female. T. L. 625 ; W. 418 (worn) mm.

Without very much larger material than is available it is impossible to discuss the races of Serpent-Eagle inhabiting Indo-China and the Malay Peninsula ; at least three and probably four forms appear to occur in the area.

25. *Baza lophotes* (Temm.).

Kloss, Ibis, 1918, p. 88.

1 ♂, 1 ♀. Daban, 650 ft., S. Annam. 13-15 March, 1918.

"Iris dark ; bill lavender-grey, tip blackish ; feet plumbeous or greenish plumbeous."

Male. T. L. 320 ; W. 226 ; crest 47 mm.

Female. T. L. 315 ; W. 236 ; crest 55 mm.

The female is apparently not quite adult and has the black patch on the abdomen barred and edged with buffy and the brown bars on the flanks very distinct.

26. *Microhierax eulolmus* (Blyth).

Microhierax caerulescens Oustalet, p. 235.

2 ♂ ad. Daban, 650 ft., S. Annam. 18-23 March, 1918.

"Iris brown ; bill and cere black, base greenish grey ; feet blackish leaden."

T. L. 168, 158 ; W. 102, 97 mm.

These specimens represent nearly the southern limit of the species ; it is not found in Hainan.

27. *Hypotriorchis severus severus* (Horsf.).

Falco severus Horsf. ; Blanf. Faun. Brit. Ind., Birds, iii. 1895, p. 423 ; McGregor, Man. Philipp. Birds, i. 1909, p. 243.

1 ♂ ad., 1 ♂ vix ad., 1 ♀ vix ad. Trang Bom, Cochin China. 1-2 June, 1918.

Male. T. L. 280 (ad.), 275 (vix ad.) ; W. 218, 217 mm.

Female. T. L. 270 ; W. 216 mm.

All three specimens are nearly adult, though those we have recorded as hardly so are streaked and spotted with black beneath ; the primaries are narrowly tipped and edged

with buffy white, and the tail-feathers barred with rufous buff on their inner webs and tipped with the same colour. The species seems very rare in Malaya and Indo-China. In fifteen years we have never seen a specimen from the Malay Peninsula, though Blyth records it from Malacca, but we have examined a bird obtained by Mr. Williamson near Bangkok. The species in a broad sense has a very wide range eastwards to New Britain. Meyer and Wigglesworth have separated the Indian Peninsula bird as *H. s. indicus*, and Meyer that from south-east New Guinea as *H. s. papuanus*. The typical form was described from Java, and the present birds almost certainly belong to it.

28. *Syrnium newarensis* (Hodgs.).

Syrnium newarensis subsp. (an *caligatus*?) Hartert, Nov. Zool. xvii. 1910, p. 205.

1 ♀ ad. Dalat, 5000 ft., S. Annam. 2 May, 1918.

"Iris dark brown; maxilla dull greenish white, cere tinged with blue; mandible dull greenish white washed with bluish; feet pale bluish blotched with yellowish grey."

T. L. 530; W. 375 mm.

This specimen has the top of the head, mantle, and inner scapulars and facial ruff deep sooty brown, between "clove" and "bone-brown" of Ridgway, with no tinge of ochraceous; under parts with bars of brown and buffy white, the former rather narrower.

Quite distinct in size and colour from *S. n. maingayi* Hume, of the Malay Peninsula, but apparently agreeing with birds described from Hainan (Hartert, *loc. cit. supra*), except that the lower parts are more broadly barred.

29. *Glaucidium cuculoides cuculoides*.

Gyldenstolpe, Kungl. Sv. Vet.-Akad. Handl. lvi. no. 2, 1916, p. 122; Kloss, Ibis, 1918, p. 89.

Athene cuculoides Oustalet, p. 244.

2 ♂, 2 ♀. Trang Bom, Cochin China. 1-5 June, 1918.

4 ♂, 1 ♀. Daban, 650 ft., S. Annam. 17-18 March, 1918.

Male. "Iris lemon; bill olive-yellow, cere olive; feet pale olive."

Female. "Iris lemon; bill bright yellowish olive; feet dull brownish-yellow olive."

Males. T. L. 204, 205, 220, 215, 220, 227; W. 143, 145, 141, 133, 139, 131 mm.

Females. T. L. 215, 230, 230; W. 143, 138, 146 mm.

The series is fairly constant and shows no approach to the large *G. c. whitleyi* Swinh., of China, or to the rufous *G. c. persimile* Hartert (Nov. Zool. xvii. 1910, p. 205) described from Hainan. We have no access to the description of *Athene cuculoides bruegeli* Parrot, described from Siam. The series from Daban and one female from Cochin China are less rufous on the flanks and greyer on the head, scapulars, and back than the others from Cochin China and two from peninsular and eastern Siam, as noted by Oustalet (*loc. cit.*). The bars on the tail are five to six in number, excluding the basal one and the tip.

30. *Loriculus vernalis* (Sparrm.).

Salvad. Cat. xx. 1891, p. 517; Oustalet, p. 227.

1 ♂ ad., 1 ♂ vix ad. Daban, 650 ft., S. Annam. 17-24 March, 1918.

"Iris whitish or pale lemon, maxilla deep orange, mandible pale orange, feet ochreous."

T. L. 146, 142; W. 89, 85 mm.

31. *Palæornis rosa* (Bodd.).

Salvad. Cat. xx. p. 453; Oustalet, p. 224; Kloss, Ibis, 1918, p. 90.

1 ♀ imm. Tour Cham, Phanrang, S. Annam. May 1918.

2 ♂ ad. Daban, 650 ft., S. Annam. 22 March, 1918.

Male. "Iris yellow; maxilla pale orange, cere black; mandible black, or yellow with black edge; feet dark olive-brown."

Males. T. L. 277, 297; W. 135, 138 mm.

Female. T. L. —; W. 131 mm.

The males differ from those collected at Koh Lak, peninsular Siam (Kloss, *l. c. s.*), in being darker green, less

yellowish beneath, and in having the under wing-coverts and axillaries more tinged with verditer-green; they are, however, in very worn plumage. The colour of the mandibles seems variable, as one of the above males and the female have it clear wax-yellow, while in one of the Koh Lak males it is also largely yellow.

32. *Palæornis fasciata* (P. L. S. Müll.).

Salvad. Cat. xx. p. 465; Oustalet, p. 225; Robinson, Ibis, 1915, p. 730; Kloss, Ibis, 1918, p. 90.

1 ♂ ad., 2 ♂ vix ad., 3 ♂ imm., 1 ♀ ad., 1 ♀ imm. Trang Bom, Cochin China. 31 January–14 June, 1918.

3 ♂ ad. Daban, 650 ft., S. Annam. 14 March, 1918.

1 ♂ imm., 1 ♀ ad., 1 ♀ imm. Dalat, 5000 ft., 7–11 April, 1918.

Males. T. L. 330, 330, 360, 363; W. 147, 156, 159, 157 mm.

Females. T. L. 280, 270; W. 148, 156 mm.

“Iris white or pale lemon, cere dull olive; feet pale yellowish olive or dirty green.”

The changes in the colour of the bill appear to be somewhat complicated in this species. Quite young birds of both sexes have both mandibles orange-red; this changes to black in both mandibles in the adult female and also in the semi-adult male, which finally assumes a blood-red upper mandible with a yellow tip when fully adult.

33. *Eurystomus orientalis orientalis* (Linn.).

Sharpe, Cat. xvii. 1892, p. 33; Oustalet, p. 295.

1 ♂, 1 ♀. Trang Bom, Cochin China. 31 May, 1918.

1 ♂, 1 ♀. Daban, 650 ft., S. Annam. 27–28 March, 1918.

1 ♀. Dalat, 5000 ft., S. Annam. 5 May, 1918.

“Iris dark; bill deep orange, extreme tip of maxilla black; feet brownish olive.”

Males. T. L. 285, 295; W. 185, 181 mm.

Females. T. L. 275, 297, 292; W. 192, 189, 190 mm.

The differences between the reputed northern subspecies *E. o. calonyx*, stated to breed in China, and the tropical

resident form *E. o. orientalis*, are sufficiently obvious in these specimens. Before, however, one can feel fully confident that the subspecies have any real existence, it should be demonstrated that no specimens answering to *E. o. orientalis* are ever found north of the Yangtze.

34. *Eurystomus orientalis calonyx* Sharpe.

Gyldenstolpe, Kungl. Sv. Vet.-Akad. Handl. lvi. No. 2, 1916, p. 118.

1 ♂. Trang Bom, Cochin China. 3 June, 1918.

T. L. 288 ; W. 187 mm.

35. *Coracias affinis* McClell.

Oustalet, p. 296 ; Kloss, Ibis, 1918, p. 91.

Coracias affinis theresiae Parrot, Verh. Orn. Gesellsch. Bayern, viii. 1911, p. 97.

1 ♀. Tour Cham, Phanrang, S. Annam. 21 May, 1918.

1 ♀. Dran, 3000 ft., S. Annam. 9 April, 1918.

"Iris dark, bill black, feet brown."

T. L. 320, 320 ; W. 170, 180 mm.

Parrot has separated the Siamese bird from the typical form on two specimens as being smaller with a wing of 176-178 mm.

A male from Bangkok measures 188 and another from Lat Bua Kao 184, so it appears that no case has as yet been made out for separating this highly migratory bird into races.

36. *Carcineutes pulchellus* (Horsf.).

Sharpe, Cat. xvii. 1892, p. 198 ; Robinson, Ibis, 1915, p. 732.

2 ♂. Daban, 650 ft., S. Annam. 15-19 March, 1918.

"Iris dark, edge of eyelid and bill blood-red, feet greenish ochre."

T. L. 233, 238 ; W. 86, 88 mm.

These birds differ from a large series from the Malay Peninsula and Sumatra in having the sides of the breast and flanks a very much paler ochreous buff. They are by far the most easterly specimens recorded.

37. *Halcyon smyrnensis fusca* (Bodd.).

Kloss, Ibis, 1918, p. 92.

Halcyon smyrnensis Sharpe, Cat. xvii. p. 222; Oustalet, p. 288.

1 ♀ imm. Tour Cham, Phanrang, S. Annam. 20 May, 1918.

2 ♀ ad. Daban, 650 ft., S. Annam. 13-14 March, 1918.

1 ♂ ad. Dran, 3000 ft., S. Annam. 18 May, 1918.

Adult. ♂ & ♀. "Iris dark or brown, bill dark blood-red, feet bright blood-red."

Immature. "Bill brown and yellow, feet yellowish washed with brown."

Male. T. L. 277; W. 116 mm.

Females. T. L. 275, 280; W. 113, 113 mm.

38. *Ceryle rudis leucomelanura* (Reichenb.).

Ceryle leucomelanura Reichenb. Handb. Alced. 1851, p. 24, Taf. 409. B, fig. 3488; Hartert, Nov. Zool. xvii. 1910, p. 216.

Ceryle rudis varia Sharpe, Cat. xvii. p. 112; Oustalet, p. 284.

Ceryle rudis leucomelanura, Gyldenstolpe, Kungl. Sv. Vet.-Akad. Handl. lvi. No. 2, 1916, p. 114.

2 ♂ ad. Tour Cham, Phanrang, S. Annam. 23 May, 1918.

T. L. 270, 270; W. 130, 128; T. 73, 67; bill from gape, 72, 69.5 mm.

The bills of these specimens do not appear to be larger than those from Siam. They do not, therefore, belong to the form described as *C. r. insignis* by Hartert (*loc. cit. supra*) from Hainan and presumably China.

39. *Upupa epops longirostris* Jerdon.

Kloss, Ibis, 1918, p. 921.

1 ♀ ad. Daban, 650 ft., S. Annam. 23 March, 1918.

1 ♂ ad. Dalat, 3000 ft., S. Annam. 10 April, 1918.

"Iris dark; bill black, base fleshy; feet deep brownish grey."

Male. T. L. 274; W. 140; bill from gape 65 mm.

Female. T. L. 285 ; W. 135 ; bill from gape 59 mm.

In both specimens the first primary is immaculate and the crest without a subterminal white band.

40. *Melittophagus leschenaulti swinhoei* (Hume).

Melittophagus swinhoei Sharpe, Cat. xvii. p. 55 ; Oustalet, p. 292 ; Robinson, Ibis, 1915, p. 734.

Melittophagus leschenaulti swinhoei, Kloss, Ibis, 1918, p. 93.

1 ♀ juv. Tour Cham, Phaurang, S. Annam. 22 May, 1918.

1 ♂, 1 ♀ ad. Daban, 650 ft., S. Annam. 17-27 March, 1918.

1 ♀ ad. Dran, 3000 ft., S. Annam. 11 May, 1918.

"Iris crimson, bill black, feet leaden."

Male. T. L. 215 ; W. 108 mm.

Females. T. L. 215, 212 ; W. 104, 107 mm.

These birds have rather shorter bills than the majority of specimens from Siam and the northern parts of the Malay Peninsula, but the difference is not very constant.

41. *Nyctiornis athertoni* (Jard. & Selby).

Sharpe, Cat. xvii. p. 88 ; Oustalet, p. 294 ; Hartert, Nov. Zool. xvii. 1910, p. 217 (Hainan) ; Kloss, Ibis, 1918, p. 94.

2 ♂ ad. Daban, 650 ft., S. Annam. 14-18 March, 1918.

"Iris yellow ; bill black, base grey ; feet pale olive."

T. L. 350, 345 ; W. 138, 137 ; T. 142, 143 mm.

These specimens show no sign of the shortened tail noted by Hartert in Hainan birds.

42. *Caprimulgus macrurus ambiguus* Hartert.

Caprimulgus macrurus, var *albonotatus* Oustalet, p. 3.

Caprimulgus ambiguus Hartert, Ibis, 1896, p. 373.

Caprimulgus macrurus ambiguus Hartert, Nov. Zool. xvii. 1910, p. 223 ; Robinson, Ibis, 1915, p. 735 ; Kloss, Ibis, 1918, pp. 94-95.

♂ vix ad. Djiring, 3000 ft., S. Annam. 9 April, 1918.

Total length 315 ; W. 207 ; T. 169 mm.

This specimen is considerably larger than any we have

seen from the Malay Peninsula or southern Siam, but is not pale enough to be considered to belong to the western race *C. m. albonotatus*.

43. *Caprimulgus indicus innominatus* Hume.

Caprimulgus innominatus Hume, Stray Feathers, iii. 1875, p. 318, note.

Caprimulgus jotaka O.-Grant, P. Z. S. 1900, p. 486.

Caprimulgus indicus jotaka Hartert, Nov. Zool. xvii. 1910, p. 223; Robinson, Journ. Fed. Malay States Mus. vii. 1917, p. 154-5.

1 ♀ imm. Dran, 3000 ft., S. Annam. 29 March, 1918.

1 ♀. Langbian Peaks, 6-7500 ft., S. Annam. 17 April, 1918.

"Iris dark, bill blackish, feet brown."

T. L. —; W. 190; T. 128 mm.

In view of these specimens and Grant's remarks on two birds obtained by Whitehead in Hainan, we think that Hume's *C. innominatus*, originally described from Mergui, may fairly be revived for the Indo-Chinese form of this Goatsucker. It will be distinguished from *C. indicus indicus* from the Indian Peninsula and Ceylon by its somewhat larger size, and from *C. indicus jotaka* of Japan and China by darker colouring and smaller size. Not impossibly it is a resident form, as is *C. i. indicus*; while *C. i. jotaka*, which is found in the Malay Peninsula, Borneo, Java, and Sumatra in the winter, is certainly migratory.

44. *Pyrotrogon erythrocephalus annamensis*, subsp. nov.

Adult male. Separable from the typical *P. e. erythrocephalus* (seven specimens from the Malay Peninsula compared) by having the back, rump, and upper tail-coverts more ochraceous brown, not rich rufous chestnut; wing-coverts much coarser and bolder in their vermiculations, almost approaching regular barring. From *P. e. yamakensis* Rickett it is separated by the colour of the head and breast and the normal length of the white tips to the tail-feathers, and from *P. e. flagrans* of Sumatra by its larger size. Total length 325; W. 146; T. 175; bill from gape 28 mm.

Adult female. Separable from typical *P. e. erythrocephalus* (seven specimens from the Malay Peninsula compared); by the much more ochraceous, less chestnut-brown head and mantle, and by the bolder and more regular vermiculations of the wing-coverts, the black element present in much larger proportion, the pale element lighter, more ochraceous brown. Total length 320; W. 146; T. 178; bill from gape 28 mm.

1 ♂, 1 ♀ ad. Dran, 3000 ft., S. Annam. 29 March, 1918.
Types of the subspecies.

3 ♀ ad. Langbian Peaks, 55-7500 ft., S. Annam.
23-27 April, 1918.

Male. "Iris scarlet, orbital skin violet; bill—tip, culmen, and edges black, median portion cobalt, gape violet; feet deep fleshy-pink tinged with blue."

Female. "Iris scarlet, hazel-red or pale hazel; bill as in the male; feet pinkish fleshy or dull fleshy."

Male. T. L. 325; W. 146; T. 175 mm.

Females. T. L. 320, 317, 326, 325; W. 146, 141, 148, 143; T. 178, 173, 176, 174 mm.

The character of the wing-coverts, which are of some differential importance in the Trogons, sufficiently distinguish this race from the western typical form.

45. *Pyrotrogon oreskios uniformis* Robinson.

Pyrotrogon oreskios Kloss, Ibis, 1918, p. 97.

Pyrotrogon oreskios uniformis Robinson, Journ. Fed. Malay States Mus. vii. 1917, p. 149.

1 ♂ ad. Daban, 650 ft., S. Annam. 22 March, 1918.

"Iris dark, eyelid cobalt; bill dull cobalt, culmen, tip, and edges black; feet dull pinkish blue."

T. L. 300; W. 124 mm.

This example agrees well with other mainland specimens and differs from typical Javan birds in having the rump entirely uniform, free from any wash of xanthine-orange. (Kloss's paper, though written before Robinson's, was issued later, owing to delay in publication.)

46. *Surniculus lugubris dicruroides* (Hodgs.).

Stresemann, Nov. Zool. xx. 1913, p. 340; Robinson, Journ. Fed. Malay States Mus. vii. 1917, p. 157; Kloss, Ibis, 1918, p. 97.

1 ♂ ad. Dran, 3000 ft., S. Annam. 30 March, 1918.

"Iris dark, bill black, feet leaden."

T. L. 245; W. 132; T. (middle) 132 mm.

The races of this Drongo-Cuckoo have been dealt with at length in the papers quoted above. The species has not previously been recorded from Annam, though it is known from Hainan and Szechuan.

47. *Hierococcyx sparveroides* (Vig.).

1 ♂. Dran, 3000 ft., S. Annam. 29 March, 1918.

"Iris and eyelids yellow; maxilla black, post-nasal area grey; mandible grey, tip black, gape yellowish; feet yellow."

T. L. 400; W. 227 mm.

48. *Cuculus micropterus* Gould.

Hartert, Nov. Zool. xvii. 1910, p. 220 (Hainan).

2 ♂ ad. Dran, 3000 ft., S. Annam. 9-11 May, 1918.

"Iris brown; eyelids pale olive, edges broadly yellow; upper mandible black, edges at base yellow; lower mandible yellow, tip greenish, edged with black; feet yellow."

T. L. 330, 335; W. 204, 207 mm.

49. *Chalcococcyx maculatus* (Gm.).

Ogilvie-Grant, P. Z. S. 1900, p. 484; Robinson & Kloss, Ibis, 1911, p. 41.

1 ♂. Daban, 650 ft., S. Annam. 26 March, 1918.

"Iris dark, edge of eyelid red; bill ochreous, the tip black; feet black."

T. L. 172; W. 103 mm.

50. *Centropus sinensis intermedius* (Hume).

Stresemann, Nov. Zool. xx. 1913, p. 322; Robinson, Journ. Fed. Malay States Mus. vii. 1917, p. 157; Kloss, Ibis, 1918, p. 100.

1 ♂, 1 ♀ ad. Trang Bom, Cochin China. 31 May-4 June, 1918.

1 ♂ ad. Tour Cham, Phanrang, S. Annam. 22 May, 1918.

1 ♂. Daban, 650 ft., S. Annam. 24 March, 1918.

1 ♀ ad. Dran, 3000 ft., S. Annam. 16 May, 1918.

"Iris crimson; bill and feet black."

Males. T. L. 495*, 465, 480; W. 204*, 185, 207; T. 257*, 243, 260 mm.

Females. T. L. 450, 510; W. 203, 207; T. 265, 268 mm.

51. *Rhopodytes tristis hainanus* Hartert.

Hartert, Nov. Zool. xvii. 1910, p. 218; Robinson, Ibis, 1915, p. 737; Kloss, Ibis, 1918, p. 100.

Rhopodytes tristis Oustalet, p. 274.

3 ♂, 3 ♀ ad. Trang Bom, Cochin China. 1-6 June, 1918.

2 ♂, 2 ♀ ad. Daban, 650 ft., S. Annam. 14-20 March, 1918.

Male. "Iris crimson, orbital skin and nostrils dull crimson; bill dull apple-green; feet leaden." *Female.* "Iris dark."

Males. T. L. 570, 540, 530, 550, 580; W. 157, 149, 155, 148, 155 mm.

Females. T. L. 570, 550, 520, 595, 560; W. 157, 154, 153, 161, 152 mm.

Oustalet (*loc. cit.*) states that one of the types of *R. t. tristis* Lesson was collected in Cochin China by Diard in 1824, while the other was sent from Bengal by Duvauzel in 1825. Cochin China and Hainan birds are undoubtedly identical, so that if the first-mentioned specimen is taken as the type, it would be necessary to re-name the western bird. To avoid this inconvenience, we here definitely select Bengal as type-locality of *R. t. tristis*.

The above series, when compared with a similar number from Siam and the Malay Peninsula, show a progressive increase in the size of the bill as we proceed west and south, but the difference is not sufficient to constitute an intermediate subspecies. In the southern part of the Malay Peninsula, the bird is strictly confined to high altitudes.

* Probably wrongly sexed.

52. *Cyanops oorti annamensis*, subsp. nov.

Cyanops oorti Oustalet (nec Müll.), p. 248.

Separable at a glance from typical *Cyanops oorti* from Sumatra (many specimens examined) by having crown and the throat much paler, varying from "pale greenish yellow" to "picric-yellow" of Ridgway, against pale "cadmium-yellow." The crown of the Sumatran bird is also deeper, less greenish yellow. The feathers in front of the eye and the periocular region are blue, like the cheeks, or at most slightly tinged with green anteriorly, not distinctly apple-green.

Types. Ad ♂. Dalat, 5000 ft., S. Annam. 6 April, 1918.

Ad ♀. Dalat, 5000 ft., S. Annam. 4 May, 1918.

Dimensions. ♂. T. L. 218; W. 97; Ts. 25; bill from gape 32 mm. ♀. T. L. 228; W. 97; T. 65; Ts. 25; bill from gape 32 mm.

1 ♂, 4 ♀. Dran, 3000 ft., S. Annam. 10-17 May, 1918.

3 ♂, 2 ♀. Dalat, 5000 ft., S. Annam. 5-9 April, 4 May, 1918.

"Iris brown, orbital skin brownish olive; bill black, base grey; feet olive."

Males. T. L. 220, 233, 218, 215; W. 94, 97, 97, 94; T. 64, 68, 64, 65 mm.

Females. T. L. 220, 230, 222, 224, 223, 228; W. 89, 90, 93, 90, 91, 97; T. 63, 62, 65, 67, 65, 65 mm.

The Malay race also differs, but very slightly and only in average characters, from the typical Sumatran form.

53. *Cyanops franklini auricularis*, subsp. nov.

Differs from typical *C. franklini franklini* from the eastern Himalaya in having beneath the yellowish grey of the lower throat an incomplete gorget of black blue-tipped feathers; ear-coverts black tipped with violet-white posteriorly, bordered behind with a broken line of bluish violet.

Types. ♂ ♀. Langbian Peaks, 5500-6500 ft., S. Annam. 26 April, 1918.

♂. T. L. 230; W. 92; T. 63; Ts. 25.5; bill from gape 32.5 mm.

♀. T. L. 226; W. 93; T. 64; Ts. 24; bill from gape 30 mm.

“Iris dark, bill black with base grey, feet olive.”

1 ♀, 1 ? imm. Dalat, 5000 ft., S. Annam. 5 May, 1918.

2 ♂, 1 ♀. Arbres Broyés, 5400 ft., S. Annam. 12 May, 1918.

7 ♂, 3 ♀, 1 ♂ imm. Langbian Peaks, 6-7500 ft., S. Annam. 15-26 April, 1918.

Males. T. L. 207, 224, 228, 217, 222, 225, 235, 233, 230; W. 91, 91, 93, 93, 92, 94, 92, 92 mm.

Females. T. L. 236, 205, 228, 222, 226; W. 96, 92, 97, 93, 93 mm.

This subspecies is extremely well marked and by many ornithologists would be given full specific rank. We have based our diagnosis on descriptions and the examination of a somewhat indifferent specimen from Darjiling.

54. *Megalæma lagrandieri* (Verr.).

Shelley, Cat. xix. 1891, p. 75.

1 ♂, 1 ♀. Trang Bom, Cochin China. 3 June, 1918.

3 ♂, 3 ♀. Daban, 650 ft., S. Annam. 13-21 March, 1918.

3 ♂, 2 ♀. Dran, 3000 ft., S. Annam. 31 March-16 May, 1918.

♂ ♀. Arbres Broyés, 5400 ft., S. Annam. 12 May, 1918.

“Iris dark, orbital skin brownish black; maxilla, culmen and median parts black, remainder grey; mandible grey, extreme base bluish; feet olive-green.”

Males. T. L. 294, 310, 335, 330, 305, 318, 335; W. 135, 128, 126, 131, 134, 130, 136 mm.

Females. T. L. 300, 325, 325, 340, 328, 327, 328; W. 125 (worn), 126, 122, 135, 134, 140, 139 mm.

This very distinct Barbet appears to be only represented by a few specimens in the French Museums and may, with advantage, be redescribed here.

Adult male. General colour green with a slight bluish tinge on the wing-coverts and tertiaries; mantle and scapulars olive-green; underparts yellowish green, the middle of the abdomen washed with blue. Crown and nape dark brown,

the feathers with ill-defined paler edges, in worn plumage pale brownish buff, with dark shaft-stripes. Throat dull ashy-brown indistinctly margined, washed with greenish or bluish or sometimes very faintly with orange-red. Frontal plumes greenish at the base, tipped with red, succeeded by a narrow frontal band. Crown-feathers broadly tipped with sky-blue and a marked eyebrow of the same colour; lores and a stripe below the eye to the anterior ear-coverts pale ashy, tipped with blue; posterior ear-coverts pale ashy, sometimes washed with blue, on each side of the neck a series of narrow shining blue streaks; feathers of the posterior nape and upper mantle tipped with bright maroon. Under tail-coverts scarlet; tail beneath bluish green; under wing-coverts and axillaries and interior edging of quills yellowish buff.

Female. Similar.

55. *Thereiceryx flavostrictus flavostrictus* (Temm.).

Cyanops phaeostriata Shelley, Cat. Birds, xix. 1891, p. 76; Oustalet, p. 248.

Cyanops faiostricta saigonensis Neumann, Bull. Brit. Orn. Club, xxiii. 1908, p. 31.

Thereiceryx phaeostriata Robinson, Ibis, 1915, p. 737.

Thereiceryx flavostrictus Kloss, Ibis, 1918, p. 100.

4 ♂, 5 ♀. Daban, 650 ft., S. Annam. 17–24 March, 1918.

“Iris hazel or crimson; maxilla black, sides of base grey; mandible black at the tip, base grey; feet olive.”

Males. T. L. 255, 255, 268, —; W. 107, 109, 109, 104 mm.

Females. T. L. 246, 260, 247, —, —; W. 109, 107, 111, 102, 111 mm.

56. *Thereiceryx lineatus lineatus* (Vieill.).

Cyanops lineata Shelley, Cat. xix. p. 80; Oustalet, p. 248.

Thereiceryx lineatus Kloss, Ibis, 1918, p. 100.

2 ♂, 1 ♀. Trang Bom, Cochin China. 1 June, 1918.

Males. T. L. 270, 270; W. 123, 117 mm.

Female. T. L. 270; W. 118 mm.

These specimens, and others from Siam, are precisely intermediate in size between the large form *T. l. hodgsoni* (Bp.) type from Nepal and the typical *T. l. lineatus* from Java. For these the name *Megalaima maclellandi*, Moore (Cat. Birds E. I. Co. Mus. ii. 1856-8, p. 637), from north-eastern Bengal, or more probably Assam, is available if desired.

57. *Mesobucco duvauceli orientalis* Robinson.

Robinson, Ibis, 1915, p. 738.

1 ♂ ad. Trang Bom, Cochin China. 1 June, 1918.

1 ♂ ad. Daban, 650 ft., S. Annam. 24 March, 1918.

"Iris dark, bill black, feet dull pale olive,"

T. L. 170, 180; W. 83, 83 mm.

These specimens agree well with three specimens of the original typical series, with which we have compared them.

Count Nils Gyldenstolpe obtained one young specimen of this species in northern Siam at Koon Tau (K. Svenska Vet.-Akad. Handl. Bd. lvi. No. 2, 1916, p. 100); as it was so young as to be almost uniformly green, we are at a loss to understand how the author was able to identify it subspecifically at all. Furthermore, he is in error in stating that the above subspecies was founded on a single specimen from Koh Mehshi, as a verification of the original reference would have shown.

58. *Xantholæma hæmatocephala* (P. L. S. Müll.).

Oustalet, p. 250; Kloss, Ibis, 1918, p. 101.

1 ♀. Daban, 650 ft., S. Annam. 22 March, 1918.

"Iris dark, orbital skin dull red; maxilla black, sides of base pale grey; mandible black, fleshy beneath; feet dull crimson."

T. L. 170; W. 80 mm.

59. *Gecinus erythropygius erythropygius* Elliot.

Gecinus erythropygius Oustalet, p. 257; Kloss, Ibis, 1918 p. 102.

2 ♂, 3 ♀. Daban, 650 ft. S. Annam. 13-27 March, 1918.

"Iris lemon-yellow; bill greenish yellow sometimes tinged with blackish on the culmen; feet dull olive."

Males. T. L. 330, 330; W. 155, 154 mm.

Females. T. L. 325, 320, 313; W. 155, 156, 154 mm.

A male *G. e. nigrigenis* from Siam (W. 152 mm.) only differs in having a blackish bill, a rather larger red occipital patch, and a white postorbital stripe.

60. *Gecinus vittatus vittatus* (Vieill.).

Gecinus vittatus Oustalet, pp. 252-253 (partim).

1 ♂ ad., 1 ♂ imm., 2 ♀ ad. Trang Bom, Cochin China. 2-6 June, 1918.

Males. T. L. 306, 275; W. 131 (worn), 130 (worn).

Females. T. L. 308, 300; W. 135 (worn), 129 (worn).

There is no doubt that these specimens should be placed with the typical race of the species from Java, with which agree specimens from Sumatra and the southern third of the Malay Peninsula. Under *G. v. eisenhoferi* (Gyldenstolpe) of northern Siam should be placed all those birds with a wing of more than 135 mm.

61. *Gecinus vittatus eisenhoferi* (Gyldenstolpe).

Ornith. Monatsb. 1916, p. 28; Kloss, Ibis, 1918, p. 103; Robinson, Journ. Fed. Malay States Mus. vii. 1917, p. 164.

Gecinus vittatus Oustalet, pp. 252, 253 (part.); Robinson, Ibis, 1915, p. 738.

1 ♂, 1 ♀. Daban, 650 ft., S. Annam. 18-20 March, 1918.

"Iris crimson, orbital skin leaden; maxilla black, mandible greenish yellow, tip and base black; feet olive."

Male. T. L. 325; W. 141; T. 117 mm.

Female. T. L. 330; W. 137; T. 118 mm.

These specimens agree with the Siamese and Cambodian birds in being of slightly larger average size than *G. v. vittatus*. In addition they are distinctly brighter in colour than the former, especially on the sides of the neck. The female has a few feathers at the base of the crest tinged with orange-red, but this is not impossibly abnormal.

62. *Gecinus canus occipitalis* (Vig.).

Gecinus occipitalis Oustalet, p. 254.

Gecinus canus hessei (Gyldenstolpe); Kloss, Ibis, 1918, p. 101.

2 ♂, 1 ♀. Trang Bom, Cochin China. 2-5 June, 1918.

1 ♂, 2 ♀. Daban, 650 ft., S Annam. 18-27 March, 1918.

1 ♀. Dran, 3000 ft., S. Annam. 10 May, 1918.

1 ♀. Dalat, 5000 ft., S. Annam. 30 April, 1918.

"Iris crimson, orbital skin dull blue or leaden; bill blackish, base of mandible sometimes grey or greenish; feet greyish plumbeous."

Males. T. L. 323, 335, 345; W. 142, 150, 148 mm.

Females. T. L. 324, 340, 320, 340, 338; W. 140, 145, 145, 144, 147 mm.

There seems to be no material difference in size between specimens from the western Himalaya, ranging through Assam, the Shan States, and Siam to Cochin China and Annam. Siamese specimens on which Gyldenstolpe founded *P. c. hessei* are certainly, on the dimensions given by the author, not smaller than birds from the Himalaya, so that any distinction would have to be based on colour alone: for the present we are not inclined to regard this race as even subspecifically distinct.

63. *Brachylophus chlorolophus* (Vieill.).

Gecinus chlorolophus Oustalet, p. 256.

Brachylophus chlorolophoides Gyldenstolpe, Ornith. Monatsber, 1916, p. 29; id. Kungl. Sv. Vet.-Akad. Handl. lvi. No. 2, 1916, p. 90, pl. 2. fig. 3.

Brachylophus chlorolophus chlorolophoides Kloss, Ibis, 1918, p. 105.

1 ♀ ad. Trang Bom, Cochin China. 31 May, 1918.

1 ♀ ad. Daban, 650 ft., S. Annam. 3 March, 1918.

2 ♂ ad. Dran, 3000 ft., S. Annam. 18 May, 1918.

1 ♂ ad., 2 ♂ imm. Dalat, 5000 ft., S. Annam. 7 April, 1918.

1 ♀ ad., 1 ♀ imm., 1 ♂ imm. Dalat, 5000 ft., S. Annam. 5 May, 1918.

"Iris crimson ; maxilla black, sides of base yellow ; mandible greenish yellow, tip black ; feet olive-brown."

Males. T. L. 260, 268, 262, 265 ; W. 132, 131, 131, 133 mm.

Females. T. L. 255, 260, 265 ; W. 132, 130, 131 mm.

We can detect no difference between these birds and descriptions of *B. chlorolophus*. In size birds in the Indian Museum ranging from Nepal to the Southern Shan States have wings from 129–138 mm. The Annam birds are certainly not *B. c. longipennis* (Hartert) of Hainan, which has the crown red with large green patches. In view of the fact that *B. c. chlorolophus* has been recorded by Gyldenstolpe from the same locality as his *B. chlorolophoides* (type unique), which is described as having the crown greenish grey broadly tipped with bloody red and the tail-feathers with broad yellowish-red margins, the validity of the latter remains to be established. If further specimens are forthcoming it requires comparison with *B. longipennis*, which has been unfortunately named owing to reference to the very small southern Indian form *B. c. chlorigaster*. The wing is not larger than in many specimens of typical *B. c. chlorolophus*. The female recorded as *B. c. chlorolophoides* by Kloss from eastern Siam is absolutely indistinguishable from the present series. Quite young birds have the breast and fore-neck almost uniform grey and the flanks markedly barred with the same ; crown greyish instead of green, the feathers in the male tipped with crimson.

64. *Gecinulus grantia* McClell.

Hargitt, Cat. xviii. 1890, p. 134 ; Oustalet, p. 259.

1 ♀. Daban, 650 ft., S. Annam. 26 March, 1918.

"Iris crimson ; bill greyish white, darkest at base ; feet dirty olive."

T. L. 275 ; W. 134 mm.

This specimen appears to be a perfectly typical example of *G. grantia* and cannot be referred to the allied *G. viridanus* Slater of Fokien.

65. *Iyngipicus canicapillus* (Blyth).

Oustalet, p. 262.

4 ♂, 3 ♀. Daban, 650 ft., S. Annam. 14-23 March, 1918.

2 ♂, 2 ♀. Dran, 3000 ft., S. Annam. 1 April-11 May, 1918.

1 ♂, 1 ♀. Dalat, 5000 ft., S. Annam. 6 April-7 May, 1918.

"Iris dark, bill brownish black, feet dull olive."

Males. T. L. 143, 147, 132, 138, 145, 142, 137; W. 81, 84, 85, 80, 85, 82, 85 mm.

Females. T. L. 130, 148, 146, 150, 147, 139, 145; W. 85, 85, 83, 90, 84, 82, 89 mm.

Many of this series are not fully adult, but the adults agree with a series from all parts of the Malay Peninsula.

66. *Dendrocopus analis* Horsf.

Dendrocopus analis longipennis Hesse, Ornith. Monatsb. xx. 1912, p. 82.

Dryobates analis Stresemann, Nov. Zool. xx. 1913, p. 349.

1 ♀. Tour Cham, Phanrang, S. Annam. 22 May, 1918.

T. L. 170; W. 100; T. 60; Ts. 20; exposed culmen 22.5 mm.

We agree with Stresemann (*l. c. s.*) that only one form of this bird is recognizable, ranging from Burma and Annam to Java and Bali, with wings varying from 92 to 102 mm. The supposed differences in the length of the wings relied on by Hesse are individual and not geographical.

The Annam specimen has been compared with a large series from Java.

67. *Hypopicus hyperythrus* Vig.

Oustalet, p. 259.

3 ♂, 2 ♀. Daban, 650 ft., S. Annam. 20-27 March, 1918.

"Iris crimson (male), brown (female); maxilla black, or greenish yellow with the culmen narrowly black; mandible greenish yellow, the tip yellow; feet very dark olive or pale leaden."

Males. T. L. 225, 231, 225 ; W. 125, 123, 122 mm.

Females. T. L. 223, 225 ; W. 119, 121 mm.

One male, in which the upper mandible is almost entirely yellow, has a patch of crimson on the sides of the neck behind the ear-coverts, which is one of the characters assigned to *H. h. marshalli* (Hartert), Vög. paläarkt. Faun. ii. 1912, p. 926, from the western Himalaya, which, however, is a larger bird (wing 126–136 mm.). The character is probably developed in fully adult birds. We are not convinced that the birds from eastwards of the Shan States are strictly conspecific with the typical form from Nepal and Sikkim, but the question can remain open for the present. They show but little affinity to the western and northern Chinese bird *H. h. subrufinus* (Cab. & Heine) = *H. h. poliopsis* Swinh.

68. *Pyrrhopicus pyrrhotis* (Hodgs.).

Hargitt, Cat. B. xviii. p. 380.

1 ♂ vix ad. Dran, 3000 ft., S. Annam. 29 March, 1918.

1 ♀ ad., 1 ♀ imm. Dalat, 5000 ft., S. Annam. 9–11 April, 1918.

1 ♂ ad., 3 ♂ imm., 1 ♀ ad. Langbian Peaks, 6–7500 ft., S. Annam. 17–27 April, 1918.

“Iris dull crimson, orbital skin olive-brown; bill yellow, base tinged with green; feet olive-brown to brownish black.”

Males. T. L. 280, 283, 280, 280, 280 ; W. 141, 146, 141, 141, 146 mm.

Females. T. L. 290, 263, 275 ; W. 140, 136, 146 mm.

The adult males of this series appear to agree fairly well with adults from the mountains of the Malay Peninsula, except that the latter have a strong claret flush on the mantle. Immature birds agree exactly with the description of *P. sinensis* (Rickett)* and suggest that that race is founded on young examples; *P. p. hainanus* (Grant)† appears to be somewhat smaller.

* Bull. Brit. Orn. Club, vi. 1897, p. 1; Ibis, 1897, p. 603.

† Ibis, 1899, p. 585.

69. *Chrysophlegma flavinucha pierrei* Oustalet.*Chrysophlegma pierrei* Oustalet, p. 258.

1 ♂ ad., 2 ♂ imm., 1 ♀ imm. Trang Bom, Cochin China.
30 May–3 June, 1918.

4 ♂ ad., 1 ♀ ad. Daban, 650 ft., S. Annam. 17–26 March,
1918.

2 ♂ ad. Dran, 3000 ft., S. Annam. 30 March–3 May,
1918.

1 ♂ imm., 2 ♀ vix ad. Dalat, 5000 ft., S. Annam. 4 April–
4 May, 1918.

“Iris crimson, orbital skin olive; maxilla black, sides of
base grey; mandible grey, tip and edges black; feet dull
olive.”

Males. T. L. 320, —, 328, 325, 315, 340, 337, 340, —,
300; W. 146, 146, 155, 157, 152, 163, 155, 157, 153,
147 mm.

Females. T. L. 290, 336, 320, 330; W. 141, 156, 144,
151 mm.

This race is evidently only a subspecies of *C. flavinucha*,
like all the other continental races. It is generally greyer
below than the other forms, with the yellow of the throat of
the male more restricted. The first four specimens listed
are practically topotypes. Young birds of both sexes are
alike and resemble the adult female, but have the chestnut
malar stripe much less pronounced and the top of the head
greener. We have seen examples of this bird from eastern
Siam.

70. *Tiga javanensis intermedia* (Blyth).*Tiga javanensis* Oustalet, p. 265.*Tiga javanensis intermedia* Kloss, Ibis, 1918, p. 109.

1 ♀ imm. Dran, 3000 ft., S. Annam. 18 May,
1918.

T. L. 280; W. 141 mm.

This immature bird evidently belongs to the northern race
named by Blyth, and not to the typical Malayan form in
which the wing does not exceed 136 mm.

71. *Chrysocolaptes guttacristatus guttacristatus* (Tick.).

Chrysocolaptes guttacristatus Oustalet, p. 266.

Chrysocolaptes guttacristatus guttacristatus Kloss, Ibis, 1918, p. 111.

Chrysocolaptes guttacristatus indomalayicus Hesse, Ornith. Monatsb. 1911, p. 182; Robinson, Journ. Fed. Malay States Mus. vii. 1917, p. 161.

1 ♀ ad. Trang Bom, Cochin China. 3 June, 1918.

1 ♂, 2 ♀ ad. Daban, 650 ft., S. Annam. 16–18 March, 1918.

1 ♂. Dran, 3000 ft., S. Annam. 17 May, 1918.

1 ♂, 1 ♀ subad. Dalat, 5000 ft., S. Annam. 7 April, 1918.

“Iris pinkish yellow, orbital skin black; bill brownish black; feet dirty olive. Immature female, iris greyish yellow and the feet plumbeous olive.”

Males. T. L. 300, 303, 315; W. 152, 151, 164 mm.

Females. T. L. 290, 315, 305, 313; W. 158, 155, 151, 159 mm.

After examination of the large series in the Federated Malay States Museums and in the Indian Museum, Calcutta, with additional material from Siam we are forced to the conclusion that, excluding the races in southern India and the extreme south of the Malay Peninsula, which are quite distinct, no more than two Himalayan and Indian and Indo-Chinese races can be maintained, namely:—a large Himalayan race, *C. g. sultaneus* Hodgs., ranging from Nepal through Assam and the Daffa Hills to Bhamo (wing about 168–190 mm.) and the typical *C. g. guttacristatus*, originally described from Chota Nagpur, which extends from the Konkan in western India across central India and Burma to Cochin China and also south through Tenasserim to the Langkawi Is., but no farther (wing about 168–154 mm.). *C. g. indomalayicus* Hesse, of which we have examined a series of actual topotypes, is within the range of these dimensions and should therefore be suppressed.

72. *Hemicercus canente* (Less.).

Oustalet, p. 267.

3 ♂, 3 ♀. Daban, 650 ft., S. Annam. 14-24 March, 1918.

"Iris dark, orbital skin black, bill and feet black or leaden-black."

Males. T. L. 170, —, 160; W. 96, 97, 99 mm.

Females. T. L. 160, 165, 155; W. 95, 90, 98 mm.

73. *Alophonerpes pulverulentus harterti* (Hesse).

Hemilophus pulverulentus Oustalet, p. 268.

Mulleripicus pulverulentus harterti Hesse, Ornith. Monatsb. xix. 1912, p. 182; id. Mittheil. Zool. Mus. Berlin, vi. 1912, pp. 231-232.

Alophonerpes pulverulentus harterti Robinson, Journ. Fed. Malay States Mus. vii. 1917, p. 163.

1 ♂. Trang Bom, Cochin China. 3 June, 1918.

1 ♂, 1 ♀. Daban, 650 ft., S. Annam. 20, 27 March, 1918.

1 ♂, 1 ♀. Dran, 3000 ft., S. Annam. 11 May, 1918.

"Iris dark; bill grey tipped with black on culmen, base of lower mandible bluish or plumbeous; feet dull plumbeous to blackish."

Males. T. L. 458, 470, 510; W. 220, 223, 232; T. 159, 169, 175 mm.

Females. T. L. 450, 467; W. 221, 220; T. —, 166 mm.

Hesse described his race, of which the type came from Pya, Upper Chindwin, as being lighter grey than the typical race with a rather longer tail. The typical locality is Java, from whence we have no specimens, but the above series is certainly greyer than birds from Pahang and Borneo with which we have compared them. The specimen from Cochin China is, however, much darker than the others, but is in worn plumage.

74. *Miglyptes jugularis* Blyth.

Oustalet, p. 391.

1 ♂, 1 ♀. Trang Bom, Cochin China. 30 May-6 June, 1918.

1 ♂, 2 ♀. Daban, 650 ft., S. Annam. 17-24 March, 1918.

"Iris dark, bill black, feet dull olive."

Males. T. L. 175, 182; W. 101, 101 mm.

Females. T. L. 170, 190, 195; W. 103, 101, 104 mm.

These specimens seem perfectly similar to those from Arakan and Tenasserim.

75. *Thriponax feddeni* (Blanf.).

Oustalet, p. 268.

1 ♂, 1 ♀. Trang Bom, Cochín China. 3 June, 1918.

1 ♂ imm. Daban, 650 ft., S. Annam. 13 March, 1918.

1 ♂, 1 ♀. Dalat, 5000 ft., S. Annam. 2 May, 1918.

"Iris pale yellow, bill black, feet dull plumbeous. *Imm.* Iris bluish, feet lavender-grey."

Males. T. L. 412, 430, 375; W. 201, 207, 197 mm.

Females. T. L. 380, 395; W. 206, 201 mm.

76. *Picumnus innominatus malayorum* Hartert.

Vög. paläarkt. Faun. ii. 1912, p. 937.

2 ♀. Dran, 3000 ft., S. Annam. 14 May, 1918.

1 ♂. Dalat, 5000 ft., S. Annam. 1 May, 1918.

"Iris dark, orbital skin black; bill plumbeous, tip black; feet plumbeous."

Males. T. L. 101; W. 54 mm.

Females. T. L. —, —; W. 55, 56 mm.

These specimens agree well with a series from the mountains of the Malay Peninsula, separated by Hartert under the above name.

77. *Sasia ochracea reichenowi* Hesse.

Ornith. Monatsb. xix. 1911, p. 181; Kloss, Ibis, 1918, p. 113.

1 ♂. Daban, 650 ft., S. Annam. 16 March, 1918.

"Iris carmine, orbital skin dull crimson; maxilla black, mandible grey; feet orange."

T. L. 86; W. 51 mm.

This specimen appears to agree with the diagnosis of this slightly differentiated subspecies described from Tavoy, Tenasserim.

78. *Psarisomus dalhousiæ* (Jameson).

Oustalet, p. 62.

4♂, 4♀. Dran, 3000 ft., S. Annam. 13 March, 14 May, 1918.

1♀. Dalat, 5000 ft., S. Annam. 7 April, 1918.

"Iris, inner ring pink and outer blue; orbital skin yellow, edges of the eyelids green; maxilla apple-green, tip pale blue and a blue patch behind the nostril; mandible deep yellow tipped with blue, edges green; feet green."

Males. T. L. 260, 263, 262, 268; W. 98, 98, 98, 99; T. 125, 126, 131, 119 mm.

Females. T. L. 265, 265, 270, 268, 245; W. 98, 99, 99, 99, 93; T. 130, 124, 128, 127, 105 mm.

The difference between the mainland and insular forms of *Psarisomus* is very slight indeed, Sumatran birds having the tail slightly longer. No constant differences in colour can be detected when sufficiently large series are compared.

79. *Eurylæmus ochromelas harterti* van Oort.

Notes Leyden Mus. xxxi. 1909, p. 209.

1♂, 1♀. Trang Bom, Cochin China. 5 June, 1918.

3♂, 1♀. Daban, 650 ft., S. Annam. 14-15 March, 1918.

"Iris cobalt; maxilla proximally blue, distally apple-green, edge black; mandible blue, edge black; feet fleshy blue."

Males. T. L. 222, 233, 220, 226; W. 113, 108, 105, 106 mm.

Females. T. L. 215, 218; W. 102, 103 mm.

These specimens have been compared with topotypes of the subspecies from the Deli District, north-eastern Sumatra, with which they exactly agree.

80. *Corydon sumatranus sumatranus* (Raffles).

Oustalet, p. 63.

1♂, 1♀. Trang Bom, Cochin China. 5 June, 1918.

4♂, 1♀. Daban, 650 ft., S. Annam. 13-23 March, 1918.

"Iris dark, orbital skin livid red; bill livid red tipped with bluish grey; feet black."

Males. T. L. 255, 285, 270, 280, 270; W. 130, 134, 131, 135, 137 mm.

Females. T. L. 250, 270; W. 127, 132 mm.

The concealed back spot in all these specimens is orange-red or flame-colour, whereas in most Malayan and Sumatran specimens it is pale yellow, sometimes tinged with orange, but deep-coloured patches also occur. The difference is not associated either with sex or with locality.

81. *Cymborhynchus macrorhynchus malaccensis* Salvad.

Kloss, Ibis, 1918, p. 114.

Cymborhynchus macrorhynchus Oustalet, p. 63.

1 ♀ ad. Trang Bom, Cochin China. 2 June, 1918.

T. L. 215; W. 97 mm.

Tail with the outer three pairs of feathers barred with white on the inner webs, the white reaching to the shaft on the outer pair.

82. *Pitta nipalensis soror* Wardl. Rams.

Sclater, Cat. xiv. 1888, p. 415.

1 imm. Dran, 3000 ft., S. Annam. 21 March, 1918.

1 ♂, 1 ♀. Langbian Peaks, 6-7500 ft., S. Annam. 15-18 April, 1918.

"Iris dark; bill (male) deep fleshy streaked with dark brown, (female) maxilla dark brown, mandible pinkish fleshy washed with brown; feet salmon washed with brown. Bill of young bird pale fleshy throughout."

Male. T. L. 240; W. 122 mm.

Female. T. L. 230; W. 109 mm.

The adult male only differs from that sex in *P. nipalensis douglasi* Grant, as described by Hartert (Nov. Zool. xvii. 1910, p. 224), in having the whole of the occiput and nape rich rufous, not merely with cinnamon-rufous superciliaries. The feathers of the crown are dark and have very faint obscure black edgings; black bases to the feathers of the fore-neck form an irregular gorget. Rump and upper tail-coverts dull peacock-green not blue. The female differs from

the male in having no tinge of rufous on the head, the pink wash on the chest and fore parts of the head and throat almost absent, and the mantle and scapulars duller, more olivaceous-green. The young bird, sex doubtful, agrees with the type-description, having a distinct patch of ashy-blue on the nape. It is probably a male, as the pink wash on the chest and head is already strongly marked.

83. *Pitta cyanea* Blyth.

Robinson, Ibis, 1915, p. 742.

2 ♂. Dran, 3000 ft., S. Annam. 31 March, 1 April, 1918.

"Iris dark, bill black, feet bluish-lilac."

T. L. 240, — ; W. 118, 114 mm.

84. *Muscicapā strophciata* (Hodgs.).

Hartert, Vög. paläarkt. Faun. i. p. 484.

Siphia strophciata Stuart Baker, Ibis, 1906, p. 270.

6 ♂, 8 ♀. Langbian Peaks, 5500–7500 ft., S. Annam.
15 April, 27 April, 1918.

"Iris dark ; bill black ; feet dull yellow or fleshy washed with brown."

Males. T. L. 140, 140, 130, 144, 133, 142 ; W. 72, 73, 68, 72, 70, 74 mm.

Females. T. L. 137, 144, 146, 133, 132, 135, —, — ; W. 69, 69, 70, 69, 69, 67, 68, 69 mm.

A nest and three eggs obtained entirely confirms Mr. Osmaston's notes (*cf.* Stuart Baker, *loc. cit.*), the only previous record for the nidification. They were taken at the height of about five feet in a shallow hole in a large tree. The nest is cup-shaped, built of moss, and lined with fine fern-tendrils. It contained three eggs, pure white elongated ovals. Dimensions 19 × 13.5 mm.

85. *Alseonax latirostris* (Raffles).

Oustalet, p. 51 ; Kloss, Ibis, 1918, p. 190.

1 ♂, 2 ♀. Dran, 3000 ft., S. Annam. 10–18 May, 1918.

"Iris dark ; maxilla black, mandible yellow with a black tip ; feet dark brown."

Male. T. L. 134 ; W. 69 mm.

Females. T. L. 129, 134 ; W. 69, 71 mm.

86. *Cyornis rubeculoides rubeculoides* (Vig.).*Siphia rubeculoides* Sharpe, Cat. iv. p. 445.2 ♂ ad., 1 ♂ imm., 2 ♀ ad. Dran, 3000 ft., S. Annam.
10-18 May, 1918.

"Iris dark, bill black, feet violet-brown."

Males. T. L. 148, 141, 138 (imm.); W. 72, 70, 72 mm.*Females*. T. L. 147, 143; W. 69, 67 mm.

These specimens are very pale below in the male, thereby differing from *C. r. dialilæma* Salvad. The females differ from those of *C. sumatrensis* in being tinged with rufous above, lacking any bluish-grey. They are considerably lighter below with the flanks less infuscated than the females of *C. r. dialilæma*.

87. *Cyornis sumatrensis* Sharpe.

Kloss, Ibis, 1918, p. 189.

2 ♀. Daban, 650 ft., S. Annam. 22-26 March, 1918.

"Iris dark, bill black, feet dull fleshy-grey."

T. L. 136, 137; W. 65, 65 mm.

Underparts tinged with greyish blue, belly pure white.

88. *Digenea submoniliger* Hume.Stray Feathers, v. 1877, p. 105; Sharpe, P. Z. S. 1888,
p. 246.2 ♂, 1 ♀. Dalat, 5000 ft., S. Annam. 5 April-7 May,
1918.1 ♂, 1 ♀. Arbre Broyé, 5400 ft., S. Annam. 15 May,
1918.

"Iris dark, bill blackish brown, feet pale fleshy."

Males. T. L. 128, 126, 130; W. 63, 62, 64 mm.*Females*. T. L. 130, 120; W. 65, 63 mm.

Four specimens have faint indications of the black line separating the white gorget from the breast, one has none. Eyebrow and lores pale ochraceous buff; primaries edged externally with rufous.

89. *Niltava grandis decorata*, subsp. nov.

2 ♂. Dran, 3000 ft., S. Annam. 13-16 May, 1918.

4 ♂, 2 ♀. Dalat, 5000 ft., S. Annam. 4-8 April, 1918.

6 ♂, 5 ♀, 1 ♀ imm. Langbian Peaks, 6-7500 ft. 15-23 April, 1918.

"Iris dark, bill and feet black, sometimes dull brown washed with bluish."

Males. T. L. 210, 208, 207, 188, 200, —, 210, —, 208, 208, 205, 212; W. 102, 99, 98, 96, 94, 101, 101, 101, 99, 99, 103, 104 mm.

Females. T. L. 205, 210, 205, 208, —, —, 210, 170 (juv.); W. 97, 97, 99, 98, 95, 95, 98, 89 (juv.).

Male. Similar to *N. g. decipiens* from Sumatra, but slightly larger.

Females. Like that of *N. g. decipiens*, but the primaries, rump, upper tail-coverts, and tail much duller, less rufous; crown and occiput shining cobalt-blue, very much brighter and clearer than in *N. g. decipiens*, where it is merely a diffused wash of duller blue.

Types, ♂ and ♀ from the Langbian Peaks, 6500 ft., 23 April, 1918.

Male. T. L. 212; W. 104; T. 98; Ts. 23; bill from gape 21 mm.

Female. T. L. —; W. 95; T. 91; Ts. 23; bill from gape 21 mm.

The bright cap of the female distinguishes this well-marked subspecies at a glance.

90. *Dendrobiastes hyperythra annamensis*, subsp. nov.

4 ♂. Dalat, 5000 ft., S. Annam. 7 April-3 May, 1918.

3 ♂, 2 ♀. Langbian Peaks, 6-7500 ft., S. Annam. 15-26 April, 1918.

"Iris dark, bill black, feet lilac-brown or fleshy."

Males. T. L. 120, 120, 120, 117, 132, 118, 131; W. 62, 64, 63, 63, 64, 61, 68 mm.

Females. T. L. 118, 108; W. 58, 58 mm.

Types. Adult male and female, Langbian Peaks, 6-7500 ft., South Annam, 20-22 April, 1918.

Male. T. L. 122; W. 64; T. 48; Ts. 19.5; bill from gape 14 mm.

Female. T. L. 108 ; W. 58 ; T. 48 ; Ts. 18·5 ; bill from gape 14·5 mm.

Male slate-colour above (Ridgway), intermediate between deep and dark Payne's grey. Female brownish olive above, slightly modified by the grey bases of the feathers. (The second female is very faintly tinged with slate on the lower back.)

The male differs from *D. h. vulcani* Robinson, of Java, in having the abdomen washed with buff ; it is much paler than *D. h. malayana* Grant, of the Malay Peninsula and Sumatra, and has white under tail-coverts.

The female is brighter below than *D. h. vulcani*, the throat and abdomen washed with buff (not whitish) and the breast and flanks not infuscated ; differs from *D. h. malayana* in being paler and brighter below, lacking infuscation on breast and flanks.

The following key, based on eighty specimens, indicates the differences between the Annam and Malayan races ; all apparently differ from *D. h. hyperythrus* of Darjiling in being darker and greyer above. No example of the species appears to have been met with between Manipur in the north-west and Annam and the Malay States in the south-east :—

Males.

- a.* Richer coloured throughout below, under tail-coverts tinged with buff *malayana.*
- b.* Paler throughout below, under tail-coverts white.
 - a'.* Abdomen whitish *vulcani.*
 - b'.* Abdomen suffused with fulvous *annamensis.*

Females.

- a.* Breast darker and duller, flanks infuscated.
 - a'.* Darker below, throat and abdomen tinged with fulvous *malayana.*
 - b'.* Paler below, throat and abdomen whitish *vulcani.*
- b.* Breast paler but brighter, flanks scarcely infuscated, throat and abdomen tinged with fulvous *annamensis.*

91. *Muscicapula melanoleuca* (Hodgs.).

3 ♂, 1 ♀. Dalat, 5000 ft., S. Annam. 8 April–8 May, 1918.

3 ♂, 2 ♀. Arbre Broyé, 5400 ft., S. Annam. 13-14 May, 1918.

4 ♂, 3 ♀. Langbian Peaks, 6-7500 ft., S. Annam. 19-22 April, 1918.

"Iris dark, bill and feet black."

Males. T. L. 117, 114, 124, 114, 117, 108, 116, 118, 115 (worn); W. 56, 57, 57, 60, 59, 55, 62, 59, 59, 58 mm.

Females. T. L. 114, 110, —, 110, 112; W. 57, 55, 58, 57, 55, 57 mm.

We have carefully compared this series with absolute topotypes of *M. m. westermanni* Sharpe, from which they differ in having the upper surfaces of the females paler, less bluish, grey, and the rump slightly washed with olivaceous. Males are exactly similar.

92. *Hypothymis azurea styani* (Hartl.).

Hypothymis azurea styani Stresemann, Nov. Zool. xx. 1913, p. 295; Kloss, Ibis, 1918, p. 190.

Hypothymis azurea Oustalet, p. 52.

1 ♀. Trang Bom, Cochin China. 21 May, 1918.

2 ♂, 1 ♂ imm., 2 ♀. Daban, 6500 ft., S. Annam, 14-23 March, 1918.

1 ♀. Dran, 3000 ft., S. Annam. 11 May, 1918.

"Iris dark; bill dull cobalt, tip and edges of maxilla black; feet dull cobalt to dark plumbeous."

Males. T. L. 164, —, 160; W. 70, 72, 70 mm.

Females. T. L. 163, 160, 162, 160; W. 63, 69, 67, 71 mm.

93. *Cryptolopha castaneiceps annamensis*, subsp. nov.

Differs from *C. c. castaneiceps* in having the abdomen entirely bright yellow, not white, mesially; and from *C. c. sinensis* Rickett (Ibis, 1898, p. 332) in having white on the inner webs of the two outer pairs of tail-feathers instead of on one pair only.

Types. ♂ from Langbian Peaks, 27 April; ♀ from Dalat, 3 May.

"Iris dark; maxilla blackish; edge and angle of bill yellow in the male; mandible ochreous; feet greenish and yellowish brown."

3 ♀. Dalat, 5000 ft., S. Annam. 4 April–3 May.

1 ♂. Langbian Peaks, 6–7500 ft., S. Annam, 27 April.

Male. T. L. 101*; W. 53*; T. 43*; Ts. 17·5*; bill from gape —*.

Females. T. L. 97, 104, 107*; W. 50, 51, 49*; T. 40, 42, 41*; Ts. 16, 16, 16*; bill from gape, 10, 7, 10, 7, 10, 7* mm.

94. *Cryptolopha malcolmsmithi*, sp. nov.

2 ♂, 5 ♀. Langbian Peaks, 6–7500 ft., S. Annam. 17–22 April, 1918.

Nearest to *C. poliogenys* (Blyth), but with the whitish grey beneath much more extensive, reaching the breast; remaining underparts pale yellow, rump also yellow; a black stripe from the lores passing through the eye and a white supercilium from the base of the bill to the nape, broadest over the eye; feathers below the eye white; three outer pairs of tail-feathers mainly white. Sexes similar.

Types. Adult male and female from the Langbian Peaks, 6–7500 ft., S. Annam, 21 & 19 April, 1918.

“Iris dark; bill black, base of lower mandible yellow; feet yellow washed with brown or greenish.”

Males. T. L. 92†, 94; W. 46†, 46; T. 32†, 33; Ts. 17†, 18; B. f. g. 10†, 10 mm.

Females. T. L. 95†, 95, 90, 92, 91; W. 47†, 49, 46, 45, 44; T. 33†, 36, 33, 36, 32; Ts. 17†, 17·5, 16, 16·5, 17·5; B. f. g. 10†, 9·5, 11, 9·5, 10 mm.

One bird, partially in moult, has the tips to the wing-coverts gamboge-yellow, much deeper than the other specimens.

This little Flycatcher was entirely confined to the upper parts of the peak above 6000 feet.

95. *Cryptolopha tephrocephala ocularis*, subsp. nov.

1 ♂, 2 ♀. Dalat, 5000 ft., S. Annam. 5–8 April, 1918.

9 ♂, 3 ♀. Langbian Peaks, 6–7500 ft., S. Annam. 16–26 April, 1918.

* Types of the subspecies.

† Types of the species.

Differs from *C. c. tephrocephala* (Anderson) and *C. t. intermedia* La Touche, Bull. Brit. Orn. Club, vii. 1898, p. xxvii, in having a conspicuous particoloured ocular ring, yellow in front, white below and behind, interrupted above by the greyish black of the head.

Types. Adult male and female from the Langbian Peaks, 5200–7200 ft., South Annam, 25 & 16 April, 1918.

“Iris dark; maxilla blackish brown, edges sometimes yellowish; mandible yellow, sometimes washed with brown.”

Males. T. L. 112, 113*, 116, —, —, 112, 118, 115, 118, 113; W. 56, 54*, 50, 55, 55, 56, 56, 56, 57, 55; T. 46*; Ts. 18*; B. f. g. 13.5* mm.

Females. T. L. 112, 113, 115*, 115, 111; W. 55, 54, 57*, 53, 56; T. 46*; Ts. 17*; B. f. g. 13* mm.

96. *Rhipidura albicollis albicollis* (Vieill.).

Oustalet, p. 53.

3 ♀. Dalat, 5000 ft., S. Annam. 5–11 April, 1918.

2 ♂, 2 ♀. Langbian Peaks, 6–7500 ft., S. Annam. 24–26 April, 1918.

“Iris dark, bill black, feet brown.”

Males. T. L. 200, 192; W. 81, 78 mm.

Females. T. L. 175, 190, 197, 190, 184; W. 75, 75, 81, 75, 72 mm.

These birds appear clearer grey, less blackish, than a series of *R. a. atrata* Salvad., from the typical locality. One male from Langbian Peaks has the white superciliaries united by a marked frontal band.

97. *Terpsiphone paradisi affinis* (Blyth).

Terpsiphone affinis Oustalet, p. 55.

1 ♀ imm. Daban, 650 ft., S. Annam. 26 March, 1918.

“Iris dark; maxilla pale lilac, mandible pale grey, tips and edges black; feet bluish plumbeous.”

T. L. 190; W. 80 mm.

98. *Culicicapa ceylonensis ceylonensis* (Swains.).

Culicicapa ceylonensis Oustalet, p. 55.

1 ♂, 1 ♀. Dalat, 5000 ft., S. Annam. 6–7 April, 1918.

* Types of the subspecies.

4 ♂, 5 ♀. Langbian Peaks, 6-7500 ft., S. Annam. 17-27 April, 1918.

"Iris dark; maxilla black, mandible fleshy tipped with black; feet yellowish brown."

Males. T. L. 132, 127, —, 132, 132; W. 66, 62, 64, 64, 62 mm.

Females. T. L. 122, 126, —, 126, 124, 126; W. 59, 59, 62, 61, 60, 58 mm.

Throughout the whole of its very extensive range, with the exception of Java and Bali, this Flycatcher shows but little local variation.

99. *Abornis superciliaris* (Tickell).

Oustalet, p. 57.

1 ♂. Daban, 650 ft., S. Annam. 20 March, 1918.

"Iris dark; bill black, edges of lower mandible fleshy; feet fleshy brown."

T. L. 113; W. 52 mm.

We have compared this specimen with one from the Abor Hills with which it agrees.

100. *Stoparola melanops* (Vig.).

Stoparola melanops Oustalet, p. 57.

3 ♂, 2 ♀. Dalat, 5000 ft., S. Annam. 10 April-4 May, 1918.

1 ♀. Arbore Broyé, 5400 ft., S. Annam. 14 May, 1918.

"Iris dark, bill and feet black."

Males. T. L. 160, 170, 174; W. 83, 84, 86 mm.

Females. T. L. 158, 165; W. 78, 78, 76 mm.

Differs from the southern form, *S. m. thalassinoides* Cab., in being larger. Alleged differences in colour are not confirmed by our large Malayan series.

101. *Graucalus macei siamensis* Stuart Baker.

Graucalus macei Oustalet, p. 43.

Graucalus macei macei Kloss, Ibis, 1918, p. 192.

Graucalus macei siamensis Stuart Baker, Bull. Brit. Orn. Club, xxxviii. 1918, p. 69.

2 ♂. Traung Bom, Cochin China. 1-6 June, 1918.

1 ♂, 2 ♀. Daban, 650 ft., S. Annam. 13-21 March, 1918.

2 ♂, 1 ♀. Dran, 3000 ft., S. Annam. 20 March, 17 May, 1918.

1 ♂, 1 ♀. Dalat, 5000 ft., S. Annam. 2 May, 1918.

"Iris dark (dull crimson in one bird), bill and feet black."

Males. T. L. 268, 265, 295, 288, 290, 282; W. 163, 158, 166, 159, 168, 165 mm.

Females. T. L. 277, 272, 280, 283; W. 160, 160, 159, 158 mm.

These specimens agree perfectly with one from Lat Bua Kao, eastern Siam.

In his recent review of the species (*l. c. s.*) Mr. Stuart Baker describes *G. m. siamensis* from Krabin, central Siam, and states that the Hainan bird is identical. If this is so the Indo-Chinese bird will have to be known as *Graucalus macei larvivorus* Hartert (Nov. Zool. xvii. p. 227), a name bestowed on Hainan examples in 1910. Baker may, however, be in error in including Hainan in the range of his race, as from Hartert's remarks and his comparison of *G. m. larvivorus* with *G. m. rexpineti* of Formosa, it might appear that the Hainan bird is darker on the throat-region and face, thus *siamensis* may possibly be good for the mainland form and we therefore use it for the present.

(The wing-length of 192 mm. given by Mr. Baker for a Siamese bird is the largest out of 184 specimens examined; either this is a misprint or the bird was a "wanderer" from the north-west.)

102. *Lalage saturata* (Swinh.).

Campophaga saturata Sharpe, Cat. Birds Brit. Mus. iv. 1879, p. 66.

5 ♂, 1 ♀. Dran, 3000 ft., S. Annam. 13 March-18 May, 1918.

2 ♀. Arbrey Broyé, 5400 ft., S. Annam. 7-14 May, 1918.

1 ♀. Dalat, 5000 ft., S. Annam. 1 May, 1918.

"Iris dark, bill and feet black."

Males. T. L. 213, 220, 216, 217, 220; W. 108, 111, 115, 111, 108 mm.

Females. T. L. 218, 220, 218, 215; W. 111, 112, 111, 112 mm.

These birds are darker throughout than the specimens from south-west Siam recorded as *Volvocivora polioptera* (Kloss, Ibis, 1918, p. 194). They have grey abdomens and less grey on the wings, while the under tail-coverts are either grey or greyish white with white tips. It is probable that they represent *V. saturata* Swinh., of Hainan, of which we have no examples with which to compare them.

All the females are banded below, but two of them show signs of becoming grey all over.

103. *Pericrocotus speciosus fraterculus* Swinh.

Pericrocotus elegans Oustalet, p. 46.

1 ♂. Trang Bom, Cochin China. 31 May, 1918.

6 ♂, 3 ♀, 1 ♀ imm. Daban, 650 ft., S. Annam. 13-26 March, 1918.

3 ♂, 3 ♀. Dran, 3000 ft., S. Annam. 30 March-18 May, 1918.

"Iris, bill, and feet black."

Males. T. L. 190, 194, 197, 200, 197, 205, 202, 205, 198, 200; W. 93, 93, 95, 92, 93, 95, 95, 93, 95, 94; T. 97, 94, 95, 91, 92, 98, 93, 95, 96, 94 mm.

Females. T. L. 195, 200, 200, 190 (imm.), 210, 205, 205; W. 88, 95, 93, 91, 94, 92, 94; T. 87, 91, 95, 94, 96, 94, 98 mm.

This series shows a tendency to intergrade with *P. speciosus speciosus* in which both webs of the central tail-feathers are black, and also with *P. xanthogaster flammifer* in which the first three, not the first two primaries only, are spotted with scarlet on the outer web.

104. *Pericrocotus brevirostris* Hume.

Pericrocotus brevirostris Oustalet, p. 48.

1 ♂. Dran, 3000 ft., S. Annam. 9 May, 1918.

7 ♂, 5 ♀, 1 ♀ imm. Dalat, 5000 ft. S. Annam. 6 April-5 May, 1918.

1 ♂. Arbre Broyé, 5400 ft., S. Annam. 12 May, 1918.

1 ♂. Langbian Peaks, 6000 ft., S. Annam. 22 April, 1918.

"Iris, bill, and feet black."

Males. T. L. 182, 179, 195, 170, 182, 182, 176, 173, 185, 178; W. 83, 81, 85, 83, 84, 82, 82, 84, 83, 83; T. 93, 96, 99, 100, 100, 98, 97, 99, 94 mm.

Females. T. L. 178, 178, 182, 188, 185, 173 (imm.); W. 78, 78, 83, 80, 80, 83; T. 92, 96, 97, 94, 97, 100 mm.

The females of this series have the crown black, in two cases glossy; the light colour of the underparts of the body orange-yellow suffused with red. Four have the tails pinky red and one yellowish; the latter has the wing-patches yellow and the rump orange, while in the others the rump and the wing-patches are as the under surfaces of the tail, but more brilliant. Young birds are clear yellow without any tinge of red.

105. *Pericrocotus griseigularis* Gould.

Gyldenstolpe, Kungl. Sv. Vet.-Akad. Handl. lvi. no 2, 1916, p. 73.

1 ♂ ad., 1 ♀ ad., 1 ♀ imm. Dalat, 5000 ft., S. Annam. 7 April-3 May, 1918.

"Iris, bill, and feet black."

Male. T. L. 170; W. 83; T. 96 mm.

Females. T. L. 180, 190 (imm.); W. 80, 85; T. 96, 95 mm.

The young bird has the throat white, underparts lemon-yellow, wing-patch rather deeper yellow.

106. *Pericrocotus peregrinus* (Linn.).

Oustalet, p. 47.

1 ♂, 1 ♀. Tour Cham, Phanrang, S. Annam. 22 May, 1918.

"Iris dark, bill and feet black."

Male. T. L. —; W. 70 mm.

Female. T. L. 150; W. 66; T. (worn) 79 mm.

[To be continued.]

XXIII.—*On the Plumage-development of Nettion torquatum, Pœcilonetta erythrorhyncha, and Anas undulata.* By F. E. BLAAUW, M.B.O.U.

NETTION TORQUATUM has been for many years a Duck which was hardly ever found in collections of live birds, and only during the last few years have I been able to procure it.

The birds have proved to be easy to breed, and I am now able to give some details about their development.

The number of eggs laid in one brood was generally about seven, and they were deposited in a box hanging over the water.

The time of incubation lasts about 23 days.

The chick in down is in so far remarkable that, contrary to what is the case with most of the other Ducks, there is no yellow in the coloration of the down. It is a mixture of pearly white and blackish grey distributed as follows :—

The whole of the under side including the sides of the head and neck is pearly white or pure white. A blackish-grey band runs from the frontal base of the bill, over the occiput and the back of the neck and joins the blackish-grey upper side. A nearly pure black streak runs through the eyes from the base of the bill to the back of the head. The dark colour of the upper side includes the tail and the back part of the thighs. There is a whitish streak over each wing which runs into a spot of the same colour on each side of the back. On each side at the base of the tail there is a white spot, and one above each thigh. Bill pale lead-colour. Legs and feet greyish flesh-colour.

In the first plumage the young females of *Nettion torquatum* are like the adult females, although the different markings are slightly less conspicuous.

The young males in first plumage have a special plumage-dress, which may be described as follows :—

The upper part of the head to below the eyes is of a rufous grey-brown, the occiput being darkest. The back of the neck is of the same colour, but lighter than the occiput. The remaining parts of the upper side, including the scapulars,

is of a dark brownish grey. The scapulars, which will be red in the adult male, have a faint reddish sheen under some lights. The tail and tail-coverts, primaries and their coverts are deep black. The secondaries are metallic green or blue, according to the light. The white patch on the secondary coverts, which is formed by elongated and broadened black-tipped white feathers, is present as in the adult male. The chin and throat and fore-neck are of a pearly white, which darkens gradually upwards into the rufous grey-brown of the top of the head. The breast is pale buff finely freckled with brownish-black spots. The rest of the under side is pearly grey marked with darker grey transverse spots. Under tail-coverts dirty white, as are also the two spots at the base of the tail, which are pure white in the adult male. Legs and feet are greyish flesh-colour. Bill pale lead-colour.

Shortly after the bird has attained its full size and is completely feathered the moult into the dress of the adult male begins.

In the adult birds the legs are flesh-colour in both sexes. The bill of the adult male is bright blue with black nail. The bill of the adult female is of a slightly duller blue and has a blackish saddle-mark.

The chick in down of the African Red-billed Teal (*Pæcilonetta erythrorhyncha*) is marked almost exactly like the chick of *Nettion torquatum*, but the light parts instead of being pearly white are pale lemon-yellow, whilst the dark parts of the upper side are also slightly tinted with yellow. There also is a dark spot between the yellow of the breast and that of the throat, and the dark line that runs from the base of the bill through the eye does not quite reach the brown of the neck as is the case in *Nettion torquatum*. The legs, feet, and bill are blackish.

In first plumage the African Red-billed Teal resembles the adults, but all the feather-markings, especially the light edgings of the wing-coverts, are not so well defined. The red of the bill is also duller than in the adult birds.

In the 'Catalogue of Birds in the British Museum' the African Red-billed Teal is included in the genus *Pæcilonetta*,

which is a genus allied to the Pintails and differing so slightly from them that in my opinion they might very well be included in the genus *Dafila*. The Red-billed Teal shows no affinities with the Pintails. It has no lengthened tail-feathers and nothing in its habits reminds one of them. The affinities are certainly with the Teals, *Nettion* or *Querquedula*.

The male of this species is a remarkably silent bird. The only tone it emits is a subdued drawling note with very little sound in it, and which is accompanied by an elevation of the head.

The eggs, usually seven in number, are generally deposited in a nest at some distance from the water under a bush or a sedge.

The South African Yellow-billed Duck (*Anas undulata*) is also a rare Duck in European collections of live waterfowl. I brought my pair from Port Elizabeth in the spring of 1914, and the birds bred the following year.

The chick in down may be described as follows :—

The whole of the under side including throat and cheeks golden-yellow. A dark band begins at the base of the bill, widens over the occiput, and gets narrower over the back of the neck to join the brownish black of the upper side. The brown of the upper side runs into the yellow of the breast for about a centimetre on each side. A thin black line runs through the eyes, meeting the brown of the back of the neck. There is a blackish patch over each ear. There is a yellow spot on each side of the back at the base of the wings and a yellow streak over each wing, also a yellow spot on each side of the back at the base of the tail and one above each thigh. The legs, feet, and bill are black.

In first plumage the South African Yellow-bill resembles the adults, but the markings of the feathers are less well defined. The bill has its full yellow and black colour as in the adult birds.

XXIV.—*List of the Birds of the Canary Islands, with detailed reference to the Migratory Species and the Accidental Visitors.* Part III. PICIDÆ—SULIDÆ. By DAVID A. BANNERMAN, M.B.E., B.A., M.B.O.U., F.R.G.S.

[Continued from p. 321.]

Family PICIDÆ.

* *Dryobates major canariensis*. Tenerife Great Spotted Woodpecker.

Picus canariensis Koenig, Journ. für Orn. 1889, p. 263—

Type locality : Tenerife.

A Resident subspecies.

Hab. in Archipelago.

Western Group : Tenerife.

Obs. Confined to this island.

Range beyond the Archipelago.

Does not occur.

Dryobates major thanneri. Gran Canarian or Thanner's Great Spotted Woodpecker.

Dendrocopus major thanneri le Roi, Orn. Monatsber. 1911, p. 81—Type locality : Gran Canaria.

A Resident subspecies.

Hab. in Archipelago.

Western Group : Gran Canaria.

Obs. Confined to this island.

Range beyond the Archipelago.

Does not occur.

Lynx torquilla torquilla. Wryneck.

Lynx torquilla Linn. Syst. Nat. 10th ed. 1758, p. 112—

Type locality : Sweden.

The Wryneck is a Rare Visitor.

Cabrera had a specimen in his collection which had apparently been killed in Tenerife. Dr. Hartert examined

* The entire absence of any Woodpecker from Hierro and Gomera, and especially from Palma, is very remarkable.

this skin (Nov. Zool. 1901, p. 305), but the bird is not mentioned in Cabrera's Catálogo.

I saw another example which had been killed in Lanzarote and which was in the Gonzalez collection in Arrecife (Ibis, 1914, p. 62).

Range. The Wryneck breeds in Europe and winters partly in northern and tropical Africa.

Family CUCULIDÆ.

Cuculus canorus. Cuckoo.

[or *Cuculus canorus canorus*.]

[*Cuculus canorus* Linn. Syst. Nat. 10th ed. 1758, p. 110—
Type locality: Sweden.]

It is probable that the European Cuckoo (*C. canorus canorus*) is an **Occasional Visitor** to the Archipelago during the spring and autumn migration.

The Lesser Cuckoo (*C. canorus minor*) undoubtedly occurs in the islands, as I have examined a skin of a bird shot in Tenerife, and this bird is duly included in this list under that heading (see next species).

There are, however, other records of the Cuckoo having been obtained in the Canaries; but as these birds are not available for comparison, I include the records under the binomial name only, as it is not certain whether they should be referred to the typical or the smaller race.

The records are as follows:—

- (1) Bolle (J. f. O. 1857, p. 324) mentions the Cuckoo as "having been heard in Fuerteventura," but evidently did not meet with it himself.
- (2) Two specimens shot by Cabrera at Laguna (Tenerife) in May (Catálogo, p. 35).
- (3) One bird recorded from Tenerife (Orn. Jahrb. 1909, p. 149) by von Thanner in October 1908: the specimen was not obtained.
- (4) A skin in the collection of Gonzalez y Gonzalez in Arrecife, Lanzarote. The bird had been shot in that island. I examined the bird myself in June 1913, but stupidly did not measure the wing; the bird did not strike me as being small at the time, and I recorded it (Ibis, 1914, p. 62) as the typical form.

Dr. Hartert must have examined Cabrera's birds when he looked through his collection in Tenerife, but he does not

now remember whether they belonged to the small or typical race. In his Vög. pal. Faun. p. 945, he wrote under *Cuculus canorus canorus*: "Auf den Canaren und Madeira sind die Kuckucke nur gelegentliche Durchzügler, sie überwintern aber in fast ganz Afrika südlich der Sahara."

Range. Typical *C. c. canorus* is found throughout Europe. It winters in Africa south of the Sahara.

Cuculus canorus minor. The Lesser Cuckoo.

Cuculus canorus minor Brehm, Allg. D. Naturh. Zeitung, Neue Folge, iii. 1857, p. 444—Type locality: Spain.

This small race of the European Cuckoo is an **Occasional Visitor** to the Canary Archipelago during the spring and autumn migration.

Meade-Waldo, during the four years he spent in the islands, found it to be an irregular spring visitor, and records many which came to the islands on the 25th of April, 1890, and remained for a few days (*Ibis*, 1890, p. 429). He notes that these birds were all "very small and dark in colour" (*Ibis*, 1893, p. 195). A specimen which he shot at Orotava on the 4th of May, 1890, and which presumably belonged to this identical migration, is now in the British Museum. It is unquestionably *C. c. minor*, although it does not appear to be extraordinarily dark, yet it is certainly a very small specimen and has a wing measuring only 190 mm. It is an adult bird, but the sex has not been ascertained.

C. c. minor has until recently been confused with *C. c. canorus* by most writers on Canarian ornithology. It may be generally distinguished by its much smaller size, wing 190–217 mm., as against 216–230 mm. in *C. c. canorus*. A bird in the British Museum from Madeira has a wing of 206 mm., which appears to be the average size.

Range. The Lesser Cuckoo occurs in Spain, Morocco, Algeria, and Tunisia, on migration, rarely in Madeira, and more often in the Canaries. It appears to reach the Gold Coast on the west coast, and British East Africa on the east coast.

Clamator glandarius. Great Spotted Cuckoo.

Cuculus glandarius Linn. Syst. Nat. 10th ed. 1758, p. 111—Type locality : Gibraltar.

The Great Spotted Cuckoo is a **Rare Visitor** to the islands.

It is recorded as an occasional migrant by Berthelot (Orn. Canarienne, p. 25), Bolle (J. f. O. 1854, p. 461), and Polatzek (Orn. Jahrb. 1909, p. 120).

Cabrera had one in his collection shot at Los Rodeos in Tenerife, presumably in the summer (Catálogo, p. 35).

I have myself seen a specimen which had been shot in Lanzarote in the Gonzalez collection in Arrecife (Ibis, 1914, p. 62).

Polatzek (*l. c.*) quotes Hartert's remarks, which really refer to *Cuculus canorus*, under this species in error, as can easily be seen if the text is read carefully.

Range. The Great Spotted Cuckoo breeds in Europe and is also found throughout Africa. It is not surprising, therefore, that it should occasionally be found in the Canaries.

Family CYPSELIDÆ.

Micropus murinus brehmorum. Brehm's Pale Swift.

Apus apus brehmorum Hartert, Naumann Naturg. Vög. Mitteleuropas, iv. 1901, p. 233—Type locality : Madeira.

Brehm's Pale Swift is a **Summer Visitor** to the Canaries, although it may almost be called a resident, as it is only absent from the Archipelago for about three months in the year.

Hab. in Archipelago.

Western Group : Tenerife, Gran Canaria, Palma, Gomera *, Hierro.

Eastern Group : Fuerteventura, Lanzarote.

Outer islets : Montaña Clara, Allegranza.

From the very considerable notes relating to this species which have been made by almost every ornithologist of

* I cannot find any particular record from this island, but there is no doubt that this Swift occurs there.

repute who has visited the islands, added to my own observations, I have been able to form definite conclusions as to its arrival and departure.

M. m. brehmorum arrives in the Canaries at the earliest during the first week in January, but usually the main body arrives in February. The principal breeding-time is April and May, but second broods are probably reared, which accounts for young birds having been taken by Bolle as late as the 10th of July. The Swifts remain in the islands during August, but in September, or at the very latest in early October, they take their departure. Meade-Waldo records that "a very few Swifts pass the winter in Tenerife," which is quite possible should the weather be particularly warm. From all accounts the winter climate of the Canaries seems to be cooler than in former years, which may account for my never once having seen the Pale Swift in the islands during October, November, or December of several years.

Brehm's Pale Swift is by far the commonest member of the genus in the Archipelago and, unlike the Black Swift, is found in all the islands, though it must be considered a rare breeding bird in Lanzarote.

The following notes taken from the diaries of various ornithologists are arranged under the headings of the various islands:—

Western Group.

Tenerife.

"I observed several the day I landed [in Tenerife] 4th February, 1887." (Savile Reid, *Ibis*, 1887, p. 434.)

"A very few Swifts pass the winter in Tenerife; large numbers arrived early in February." (Meade-Waldo, *Ibis*, 1889, p. 4.)

"It usually arrives early in the spring and is most common near the coast." (Meade-Waldo, *Ibis*, 1893, p. 195.)

29 January, 1888. "Appears to be an arrival of Swifts, a change in the weather, heavy rain, snow on all the mountains down to 4000 feet, and temperature in morning 54° rising to 60° in the day." (Meade-Waldo, MS. note-books.)

4 February, 1888. "Shot Swift [*C. m. brehmorum*] with testes fully developed at Orotava." (Meade-Waldo, MS. note-books.)

"Not as frequent as the Black Swift—found in Tenerife near Santa Cruz and Laguna. I saw also a few east of Vilaflor in July;

they might still have had nestlings then. In summer they mount up to the Pico de Teide and pursue the chase even in spite of the suffocating sulphurous fumes from the crater. On the 20th of February, and following days, I noticed swarms of these birds on their passage through, flying along the high mountain-sides between Santa Cruz and Laguna." (Polatzek, Orn. Jahrb. 1908, p. 164.)

"Noticed only a few Swifts at Santa Cruz, March 25th, 1909." (Bannerman, MS. diaries.)

"The Swifts of the *apus*-species leave Tenerife in the autumn." (Von Thanner, Nov. Zool. 1904, p. 431.)

Gran Canaria.

19 March, 1888. "A few pallid Swifts seen." (Tristram, Ibis, 1889, p. 15.)

"A bird of passage. . . I can verify now beyond a doubt that it breeds in the tower of the Cathedral in Las Palmas, and I received on the 10th of July two young fledged birds from San José." (Bolle, J. f. O. 1857, p. 322, erroneously recorded under *Cypselus apus*.)

"In August and September, and probably earlier in July, these Swifts fly along the Barranco Guiniguada to San Matéo before noon and return in the afternoon towards 5 o'clock." (Polatzek, Orn. Jahrb. 1908, p. 163.)

The following records are all my own :—

- | | |
|-------------------|---|
| Oct., Nov., Dec. | No birds noted during these months (MS. diaries). |
| 5 January, 1908. | A flock of Pale Swifts seen at Santa Brigida (MS. diaries). |
| 8 January, 1908. | Large flock of Pale Swifts at Tafira (MS. diaries). |
| 2 March, 1912. | Ten birds seen at Juan Grande (Ibis, 1912, p. 595). |
| 1 April, 1909. | Two birds obtained, Santa Brigida (skins in British Museum). |
| 8 April, 1909. | Thousands of Swifts hawking over Aguimes, four days later all had disappeared (Ibis, 1912, p. 595). |
| 22 April, 1913. | Large numbers over fields near Las Palmas and following days (MS. diaries). |
| 29 April, 1913. | Birds seen at Firgas (MS. diaries). |
| May 1912. | Several noted near Las Palmas (Ibis, 1912, p. 595). |
| 1-3 May, 1913. | Several obtained at Firgas, sexual organs large (MS. diaries). |
| 19-22 June, 1913. | Many Pale Swifts at Alcaravaneras (MS. diaries). |
| 18 August, 1908. | A few Pale Swifts seen in the Monte (Ibis, 1912, p. 595). |

Von Thanner, who was in Gran Canaria from January to April 1909, wrote of this Swift :—

“Very common in the north of Gran Canaria and also in the immediate neighbourhood of Las Palmas, while it probably does not occur in the south for I, at all events, never saw it.” (Orn. Jahrb. 1910. p. 89.)

Palma.

“On January 17, 1905, observed large numbers of Swifts circling round. I did not see them again in the island until my departure on January 8.” (Von Thanner, Orn. Jahrb. 1908, p. 207.)

Gomera.

Though not actually recorded from this island, there is no doubt that it occurs there.

Hierro.

A skin in the Tring Museum labelled El Pinar, obtained 3. iii. 1905, by von Thanner. (Examined by myself, August 1918.)

Eastern Group.

Fuerteventura.

“It appears in many districts. During my journey in the spring I shot the first on the 10th of February in Rio Cabras.” (Polatzek, Orn. Jahrb. 1908, p. 164.)

“March 10, 1889. Swifts seen in Fuerteventura.” (Meade-Waldo, MS. note-books.)

“April 1, 1888. Swifts breeding in sand cliffs in Fuerteventura.” (Meade-Waldo, MS. note-books.)

“Very common, much more so than in Tenerife.” (Von Thanner, Orn. Jahrb. 1905, p. 60.)

“We found these Swifts to be plentiful in the Eastern Group during May and June, but particularly so in Fuerteventura. They were seen in numbers round Puerto Cabras, also met with throughout our long journey in the island, being especially numerous at Toston, in the valley of La Peña, and at Antigua.” (Bannerman, Ibis, 1914, p. 252.)

Lanzarote.

“I observed the Pale Swift only as a bird of passage, which, however, does not exclude the possibility of its breeding in another part of the island. I can vouch for the passage of the last birds through Lanzarote on the 27th of April. On this island I seldom saw more than three pairs flying together.” (Polatzek, Orn. Jahrb. 1908, pp. 163, 164.)

"Found the Pale Swift much less common than in Fuerteventura. It was only seen in any numbers at Tiñosa; though single birds were seen from time to time during my journey in 1913." (Bannerman, Ibis, 1914, p. 252.)

[*Vide* Map, Ibis, 1914, pl. ii.]

Outer Islets.

Montaña Clara.

A few were noted which appeared to be breeding in holes of the sea-cliffs, 1913. (Bannerman, Ibis, 1914, p. 77.)

Allegranza.

"I saw three birds in this islet on the 23rd of June, 1913." (Von Thanuer, Orn. Jahrb. 1913, p. 192.)

"A few birds were seen by my taxidermist between the 9th and 14th of June, 1913." (Bannerman, Ibis, 1914, p. 86.)

Range beyond the Archipelago.

Brehm's Pale Swift is also found in Madeira and in parts of north Africa (Morocco, Algeria, and Tunisia), where it is resident.

I have examined the following skins amongst others, which are particularly worthy of notice here, in the Tring Museum :—

Cape Blanco (Mazagan), Morocco.	20. iv. 02.
Biskra.	22. iv. 09.
"	25. iii. 09.
Algiers.	8. v. 11.
Mogador.	19. iv. 04.
Baie du Lévrier, Cape Blanco.	7. v. 95.
Omaruru (Damaraland).	12. xi. 79.

In the British Museum there are only two skins from the mainland which have been identified as belonging to this subspecies :—

a. Benguella.	No date.
b. Damaraland.	2 December.

I am very doubtful whether the Benguella skin is really a specimen of this Swift. Its colouring appears to me too brown. Where the bulk of the Canarian birds go to in October, November, and December it is impossible to say.

They may visit the Rio de Oro, the birds of which are so little known, or they may proceed farther south to Damaraland. It will be noted that the two birds from Damaraland were shot in November and December respectively—months when they are absent from the Canaries,—and this may prove the real clue to their whereabouts during these months.

Micropus unicolor unicolor. Madeiran Black Swift.

Cypselus unicolor Jardine, Edinb. Journ. Nat. & Geogr. Sci. i. 1830, p. 242, pl. 6—Type locality: Madeira.

The Madeiran Black Swift must come under the heading of a **Summer Visitor**, although it is only absent from the Archipelago during part of the year.

Hab. in Archipelago.

Western Group: Gran Canaria, Tenerife, Palma, Gomera, Hierro*.

Eastern Group: Fuerteventura.

Outer islets: No records.

We have now considerable material with which to sum up what is known of the migrations of the Black Swift in the Canary Islands.

It would appear from the majority of reports that *M. u. unicolor* is the first Swift to arrive in the Archipelago, coming earlier than the Pale Swift (*M. m. brehmorum*).

It seems to begin to arrive in January, but even as early as the 24th of December flocks have been recorded from Tenerife by Meade-Waldo, and Koenig saw it in Fuerteventura in this month also. February seems to be the month when the main body returns (although the time may vary slightly in the different islands and in different years). The birds probably breed in all the western islands of the Archipelago, particularly in Tenerife and Gran Canaria. Specimens which I shot on 1 May, 1913, had well-developed eggs in the ovary, while Webb and Berthelot heard the young chirping in the nest during the first week in May.

* There is no particular record from this island, but the bird is sure to occur there.

At any rate, May and June are the months when nesting is at its height. I do not know whether a second brood is raised in the season. The Black Swifts prepare for departure about the end of September, and all have left by the middle of October. It seems therefore only to be absent from the islands about two and a half months, and even then, as Meade-Waldo remarks, "birds turn up when the main body is absent."

Western Group.

In the western islands of the group the Black Swift is abundant, particularly in Gran Canaria and Tenerife. It breeds in the deep barrancos and in the mountains in holes and crevices of the rocks, also doubtless in the sea-cliffs. It is also recorded from Palma and Gomera, and probably inhabits Hierro.

The following are extracts from diaries, etc., kept by various ornithologists who have worked in the group. The names of the authorities quoted are enclosed in brackets with a reference to their papers:—

Gran Canaria.

"Breeds in the Cumbres, where they are especially numerous."

(Bolle, J. f. O. 1857, p. 323.)

A flock of *C. unicolor* noted on 20 March, 1888. (Tristram, Ibis, 1889, p. 23.)

"Numbers playing over the plain on the next day, 21 March."

(Tristram, Ibis, 1889, p. 25.)

"Common in the gardens of Tafira." (Polatzek, Orn. Jahrb. 1908, p. 164.)

"I saw it wherever I went in 1909." (Von Thanner, Orn. Jahrb. 1910, p. 89.)

"Generally found in the south of Gran Canaria, where it frequents the deep barrancos and roosts in the high overhanging cliffs. A few birds occasionally wander to the 'charco' on the shore near Maspalomas, and there is a colony in the Barranco de Fataga which I discovered on the 28th of February, 1912. This species is generally confined to the higher levels. I have seldom seen it in the north of the island, but there is a colony in the Barranco de la Virgen, near Firgas, and another near Tafira." (Bannerman, Ibis, 1912, p. 596.)

Tenerife.

"Very common, above all in the neighbourhood of the barrancos on the coast. They were met with on both occasions on which the Peak was ascended . . . flying around the crater of the Piton. The hot sulphur vapours did not appear to worry them. . . . The Black Swifts nest in the caves, and in the crevices of the rocks. . . . The sites chosen by this bird are almost always inaccessible. In the Barranco de Martianeze several of these Swifts have built their nests in the fissures of rock. In the first week of May one heard the little ones chirping." (Webb & Berthelot, Orn. Canarienne, p. 24.)

"It appears in large numbers. On the 26th of February [Bolle does not mention the year, but he is writing in 1857] I saw several over Santa Cruz, some were there almost the whole spring. More were seen on the 10th of March. . . . In Tenerife they disappear all at once in September (I think that they go to their relatives in the Cape Verde Islands) and return early in the next year." (Bolle, J. f. O. 1857, pp. 322, 323.)

"Large numbers of *C. pallidus* arrived early in February and the main body of *C. unicolor* later." (Meade-Waldo, Ibis, 1889, p. 4.)

"This little Swift is extremely abundant all the year except from about October 10 to the beginning of January, but occasionally birds turn up when the main body is absent." (Meade-Waldo, Ibis, 1893, p. 194.)

"Black Swifts in flocks 24 December, 1888 and 9 January, 1889; three seen 20 January, 1888, several 23rd." (Meade-Waldo, MS. diaries.)

"One of the first species which arrives at the beginning of spring." (Cabrera, Catálogo, 1893, p. 36.)

"Leaves Tenerife after the breeding season (autumn) and returns in the spring." (Von Thanner, 'Einiges über das Vogelleben Tenerifes,' 1906, p. 3.)

Palma.

"Noted in this island on 26 March." (Koenig, J. f. O. 1890, p. 474.)

"The Black Swifts had not yet arrived when I left the island on the 8th of February." (Von Thanner, Orn. Jahrb. 1908, p. 207.)

Gomera.

A bird shot May 8. (Meade-Waldo, MS. diaries.)

Lierro.

No particular record, though the bird is sure to occur here.

Eastern Group.

In the eastern islands of the group the Black Swift is quite a rare bird.

In Fuerteventura in May and June I found it to be much less plentiful than the Pale Swift, and not by any means universally distributed. Polatzek notes (Orn. Jahrb. 1908, p. 164) that "it seldom appears," while Thanner likewise records that "it is not often seen, and then in pairs and only in certain localities" (Orn. Jahrb. 1905, p. 60). Koenig, however, saw it in Fuerteventura in December and January (J. f. O. 1890, p. 342), but these birds may have been stragglers which had either arrived in advance of the main party or had possibly remained in the islands from the preceding year.

In Lanzarote and the Outer Islets I did not meet with it in May and June, and none appear to have been noted there by other observers.

Range beyond the Archipelago.

M. u. unicolor inhabits only the Canary Islands and Madeira. When it leaves the Canaries its destination is a mystery which has not yet been satisfactorily solved. Bolle concluded that "it visited its relatives in the Cape Verde Islands," but as the Cape Verde Islands form (*M. u. alexanderi*) has been described as distinct from *M. u. unicolor* this theory hardly holds good. It is more probable that the Black Swift migrates in autumn south-east to some part of Africa where it has not yet been discovered.

Still another race inhabits Fernando Po, which has been named *M. u. poensis* (Alex.).

Micropus melba melba. European Alpine Swift.

Hirundo melba Linn. Syst. Nat. 10th ed. 1758, p. 192—
Type locality: Gibraltar.

This is a **Rare Visitor** to the Archipelago.

There appears to be only a single record of the White-bellied Swift from the Canary Islands between 1810 and the end of 1914. A specimen is recorded by Meade-Waldo

in 1893 as having been killed near Santa Cruz de Tenerife (Ibis, 1893, p. 195).

Cabrera, who published his "Catalogue" in the same year, notes that he shot one in May on the coast of Tenerife (Catálogo, p. 36).

Both these references doubtless refer to the same example.

It was *M. melba* and not the tropical African race *M. m. africanus** which was recorded from the Canary Islands. The bird which Cabrera shot is said to have been obtained in May, in which month† *M. m. melba* is breeding in northern Africa‡.

Since this paper has been in type Dr. Hartert has kindly forwarded to me a letter dated 27/x./18, which he has received from Herr von Thanner. In this letter Herr von Thanner writes:—"Some days ago (16/x./18) I saw eight *Micropus melba* [in Tenerife]." This is a most valuable record.

Range. The typical European species, *M. m. melba* of the Pyrenees and Alps, ranges as far as north-west Africa, where it is known to breed.

Micropus apus apus. Common Swift.

Hirundo apus Linn. Syst. Nat. 10th ed. 1758, p. 192—
Type locality: Sweden.

Polatzek says that the Common Swift is a frequent **Bird of Passage** in the Canaries (Orn. Jahrb. 1909, p. 119). He does not confuse it with either of the breeding species (*M. murinus brehmorum* or *M. u. unicolor*).

* The South African race *M. m. africanus* ranges as far north as Kilimanjaro on the east; there are no specimens from the central west African coast, but it is quite certain that this bird never ranges as far north as the Canary Islands. We can therefore safely refer the birds from Tenerife to the typical European species.

† Hartert received fresh eggs taken at Constantine (western Algeria) on 21 May, 1914 (Nov. Zool. xxii. 1915, p. 76).

‡ Tschusi has separated the northern African race as *M. m. tuneti* as it is said to be very pale, but Hartert (Nov. Zool. xxii. 1915, p. 76) doubts whether a northern African race can be separated, and I agree with him.

I have been unable to examine a specimen from the Canary Islands. There is not one in either the British or Tring Museums, but I feel justified in including the Common Swift in the list of authentic migrants as I have no doubt that Polatzek will prove to be correct in his statement.

Examination of Polatzek's collection, which is mostly in the Vienna Museum, will probably confirm this view.

Bolle's statement in the J. f. O. 1857, p. 322, under the heading of *Cypselus apus*, obviously refers to the Pale Swift (*M. m. brehmorum*), which breeds in the tower of the Cathedral in Las Palmas, and is erroneously included under the heading of the Common Swift. This has already been pointed out by Polatzek (Orn. Jahrb. 1909, p. 119).

Range. The Swift breeds in Europe and in north-west Africa, and ranges in winter to South Africa. There are skins in the Tring Museum obtained in the Rio de Oro on the 11th of August, 1902.

Family MEROPIDÆ.

Merops apiaster. Bee-eater.

Merops apiaster Linn. Syst. Nat. 10th ed. 1758, p. 117—
Type locality : South Europe.

The Bee-eater is an irregular **Bird of Passage** to the Canary Islands and has been known to remain to breed.

It is sometimes very numerous on migration, especially in the eastern islands, and occasionally remains to rest for a few days.

M. apiaster is first recorded by Viera, who says that very large flocks appeared at Ciudad of Canaria [*i. e.* Las Palmas] in 1788 and in May 1800. I have not seen Viera's Dictionary myself, but the description is said by Savile Reid to undoubtedly refer to *M. apiaster* (Ibis, 1888, p. 75).

Webb and Berthelot considered it to be "accidental on migration," and note:—"It arrives sometimes in the islands in winter, spreading over all the islands without remaining very long. In December 1828 a flock lived in the Dragon Tree at Orotava, Tenerife" (Orn. Canarienne, p. 25).

Bolle recorded the arrival of those in December 1828,

and wrote:—"In winter the Bee-eater comes in large flocks to Fuerteventura. . . . They also visit Canaria frequently, and they nested for some time at Arguineguin; a pair even built in a hole in the wall of the little house I stayed in in May 1856" (J. f. O. 1857, p. 324).

Meade-Waldo found it to be an irregular but occasionally numerous spring migrant, especially to the eastern islands (Ibis, 1893, p. 195), where he saw it in flocks. He obtained a specimen at Laguna on the 4th of April, 1890, which I have examined in the British Museum.

It was very numerous in Tenerife on the 25th of April, 1890 (Ibis, 1890, p. 429).

Cabrera noted that it sometimes arrived in great numbers in the month of May (Catálogo, p. 38), and in support of this is the fact that von Thanner shot two (a male and female) on the 7th of May, 1904, in Tenerife (Orn. Jahrb. 1905, p. 212).

Polatzek includes it as a Regular Bird of Passage in spring, and says:—"In Tenerife in spring, in the zone of about 2300 m., when the bees are swarming ('Bienenkorbe') they make themselves unpleasantly perceptible. In May I saw them flying in large swarms ('grösseren Schwärmen') over Fuerteventura; they were so high up, that I should never have observed them, had I not recognized their call-note. Sometimes some of them fly down and hunt in the neighbourhood of Oliva, without staying there long. In Fuerteventura I saw some resting in a fig tree" (Orn. Jahrb. 1909, p. 120).

Polatzek never found the Bee-eater breeding in the islands.

Range. The Bee-eater breeds in southern Europe and north Africa, north of the Sahara. It winters in tropical and southern Africa.

Merops persicus. Persian or Blue-cheeked Bee-eater.

[*Merops persicus persicus.*

Merops persica Pallas, Reise d. versch. Prov. d. Russ. Reichs, ii. 1773, p. 708—Type locality: shores of Caspian Sea.]

A very **Rare Visitor** to the islands.

There are only two records of this species.

Cabrera notes that he shot a specimen in May at Laguna (Catálogo, p. 38). He does not mention the year in which his bird was obtained.

Meade-Waldo notes that *Merops persicus* occurred at Laguna on the 25th of April, 1890, when there was a great influx of migrants (Ibis, 1890, p. 429).

It is possible that the Persian Bee-eater which has occurred in the Canaries was the typical form; there is, however, another race, *M. p. chrysocercus* (type locality: Senegal), which might conceivably have visited the Archipelago. Until specimens are examined the bird is best named binomially.

Range. The typical Persian Bee-eater is found throughout the greater part of Africa.

Family UPUPIDÆ.

Upupa epops epops. Hoopoe.

Upupa epops Linn. Syst. Nat. 10th ed. 1758, p. 117—
Type locality: Sweden.

A **Partial Resident**.

Hab. in Archipelago.

Western Group: Gran Canaria, Tenerife, Palma, Gomera, Hierro.

Eastern Group: Fuerteventura, Lanzarote.

Outer islets: Graciosa, Allegranza.

The Hoopoe is the first bird in my list which I place under the heading of a **Partial Resident**; though a resident and breeding bird in nearly all the islands, its numbers are augmented by fresh arrivals from the continent at certain seasons.

This species is one of the most difficult of all the Canarian avifauna to deal with satisfactorily.

In the first place I have been unable to distinguish between the various forms described from the Canaries, and agree with Dr. Hartert in his conclusions. Considerable variation is certainly shown, and there may eventually prove

to be two distinct races. Much more material is required ; at any rate there are not more than two forms at the most.

The migrations of the Hoopoe are also difficult to determine, and I have therefore quoted the opinions of the various ornithologists who have studied this question at length.

If two forms are recognized, which, according to Polatzek (Orn. Jahrb. 1908, p. 165), is the case :

- (a) is a **Resident Species**. A larger bird, more vivid in colouring and with a longer bill than the typical form, which breeds in the winter months and lays slightly larger eggs. This bird has been named *Upupa epops fuerteventuræ* by Polatzek (*loc. cit.*).
- (b) is the *typical* race (*Upupa epops epops*), which is a **Partial Resident** and also a regular visitor to the islands, where it breeds. A few remain throughout the year. These birds arrive in March and April from Africa, and the majority leave the islands in the autumn.

Floericke, who has caused so much confusion by his writings on Canarian birds, has thought it necessary to describe (A. d. Heimat. d. Kanarienvög. 1905, p. 32) two additional forms of the Hoopoe from the Canary Islands, *Upupa epops petrosa* and *Upupa e. pulchra*, both from Tenerife in the Western Group (!).

After my last expedition, before the war, to the islands, I studied the question of the Hoopoes of the Canaries very carefully, and my remarks will be found summed up in 'The Ibis,' 1914, pp. 253-256. I am not entirely satisfied with the conclusions at which I then arrived, especially as regards a possible resident race, but will defer discussion of that until some future paper.

Granted that it is the *typical* form which visits the Archipelago annually, as distinct from a possible resident race, the following statements of various ornithologists must refer to this bird alone.

Polatzek (Orn. Jahrb. 1908, p. 165), writing only of the

eastern islands, believed there were two distinct forms:—(a) a resident bird; (b) “a somewhat smaller species, as bird of passage, of which some would appear to stay during the winter.” I consider form (b), at any rate, to be the typical species. Still referring to form (b)—the bird of passage—Polatzek notes: “On the 29th of March I observed the first returning from Africa, about twenty of them, which had at most been preceded by a few. From that day forward I found pairs of them in localities where before they had never appeared, and they remained there.”

Von Thanner, like Polatzek, recognizes two forms from the Archipelago—*U. e. epops* and *U. e. pulchra* of Floericke, with which latter species he considers *U. e. fuerteventuræ* Polatzek to be synonymous (Orn. Jahrb. 1912, p. 225). Of the typical species he writes (Orn. Jahrb. 1905, p. 60): “To be found [in Fuerteventura] in large numbers in the vicinity of the villages, where it breeds, after which the majority leave the island”; and again (Orn. Jahrb. 1910, p. 89) notes: “I shot a few of these birds in the middle of March 1909, and saw them in every part of the island (Gran Canaria).”

Under the heading *U. e. fuerteventuræ* in the same paper (Orn. Jahrb. 1910, pp. 89, 90), Thanner records his birds from the Charco of Maspalômas in Gran Canaria, saying that they agree closely with Polatzek’s description of the resident winter-breeding birds of Fuerteventura.

In a much later paper (Orn. Jahrb. 1912, pp. 225, 226) von Thanner discusses the Hoopoes at greater length. As already noted, he now considers that Polatzek’s *U. e. fuerteventuræ* must be known as *U. e. pulchra*, and says that he found it in the western islands, where it also appears on the coasts of Gran Canaria and Tenerife, and breeds everywhere on the coast during the winter, when it is quite an exception to find a Hoopoe in the higher districts of these islands. After the nesting is finished, he says that the majority of the coast (winter) birds [i. e. *U. e. fuerteventuræ*, or *pulchra* as Thanner prefers to call it] disappear from the island.

Von Thanner is here only discussing the western islands Tenerife and Gran Canaria when he says that, after breeding in the winter, *U. e. pulchra* leaves the island. It may, therefore, be that there *are* two forms of Hoopoe in the Archipelago (judging by their habits); but I do not admit this yet, until more skins can be examined.

If this turns out to be the case, then

(a) The resident bird must be *U. epops fuerteventuræ* Polatzek, which lives throughout the year in Fuerteventura and Lanzarote (in the Eastern Group); some of these birds visit the coasts of Tenerife and Gran Canaria (in the Western Group) in the winter, where they breed, returning to the Eastern islands after nesting is finished.

(b) The typical form *U. epops epops* appears to arrive from Europe and Africa in March and April, breeds in all the islands, and departs in the autumn, a few remaining in the islands throughout the year.

Range beyond the Archipelago.

The European Hoopoe (*U. e. epops*) inhabits the greater part of Europe, but is more abundant in the south. It extends to India and breeds in northern Africa, extending its range south to Senegambia in winter.

Family ALCEDINIDÆ.

Alcedo ispida. Kingfisher.

[or *Alcedo ispida pallida*.]

[*Alcedo pallida* Brehm, Vogelfang, 1855, p. 51—Type locality: Egypt.]

The Kingfisher can now only be considered a **Rare Visitor** to the Canary Islands, even if it has not entirely ceased to occur.

Until a specimen of the Kingfisher is actually killed in the Canaries, it will be impossible to determine whether it is the typical European species or the North African subspecies (*A. i. pallida*) which visits the Archipelago from

time to time. I lean strongly to the latter view, as will be seen from the heading I have employed.

In the days when Berthelot and Bolle wrote on the birds of these islands (1841-1857), the Kingfisher was evidently an occasional visitor. I doubt its ever having been a resident species in any of the islands.

Webb and Berthelot include it in their '*Ornithologie Canarienne*,' p. 25, giving as its "*Habitat*" in the Archipelago "*La région maritime, dans toutes les îles.*"

Bolle notes (J. f. O. 1854, p. 461), "A rather rare resident bird in the barrancos of the warm coast region"; but in his later paper (J. f. O. 1857, p. 319) modifies this assertion and remarks: "According to my own and Berthelot's experience the Kingfisher breeds nowhere in the Canary Islands. It appears now and again only. The want of river fish, with the exception of an eel, and the periodical drying up of the streams in summer easily explains its absence." .

The last record is given by Godman, who in the year 1871 "saw it once or twice near the Port of Orotava in Tenerife in the middle of April" (*Ibis*, 1872, p. 169).

Cabrera notes that the Kingfisher has been recorded from Tenerife and Palma by Berthelot, Godman, and Busto, but he never observed the bird himself (*Catálogo*, p. 38).

Meade-Waldo did not include it in his list (*Ibis*, 1893), and in later years Polatzek failed to gain any information respecting it, nor did he ever see it (*Orn. Jahrb.* 1909, p. 121).

It would therefore seem that the Kingfisher has gradually disappeared from the islands. It may, and probably does, turn up at rare intervals, but its visits to the Archipelago are certainly becoming less frequent.

Range. *Alcedo i. pallida* inhabits Morocco, Algeria, Tunisia, and Egypt. *A. i. ispida* inhabits the greater part of Europe from Scandinavia to the Mediterranean region.

Family CORACIIDÆ.

Coracias garrulus garrulus. Roller.

Coracias garrulus Linn. Syst. Nat. 10th ed. 1758, p. 107—
Type locality: Sweden.

The Roller comes under the heading of an **Occasional Visitor** during the spring and autumn migrations to the Archipelago.

In certain years, as in 1890 when many were captured in Tenerife, it is not by any means uncommon, while in other years it may not be noticed at all. It usually occurs in the months of May and September.

Bolle records a flock of twenty from Puerto Cabras, Fuerteventura, noting that two were shot and preserved as they were very fatigued after their long flight over the sea (J. f. O. 1854, p. 452); in a later paper he remarks that the Roller is well known in the island of Canaria (Gran Canaria), "where it is said to arrive often in winter in large numbers very much fatigued" (J. f. O. 1857, p. 277).

Meade-Waldo considered it not very uncommon at migration time, and mentions seeing a mounted example in Cabrera's collection (Ibis, 1889, p. 515).

Cabrera says it is rather frequent in May and September (Catálogo, p. 38), and had various specimens in his collection killed in the years 1890-1892.

Polatzek found it rare in the eastern islands (Orn. Jahrb. 1909, p. 120).

Von Thanner records a specimen shot in Tenerife on the 19th of May, 1912, and remarks (Orn. Jahrb. 1912, p. 227): "During these days a hot and strong south-east wind blew, bringing sand from Africa."

Range. The Roller breeds in Europe and north-western Africa and in winter ranges to South Africa.

Family STRIGIDÆ.

Tyto alba. Barn-Owl.(= *Strix flammea* auctorum.)[? **Tyto alba alba** *.][*Strix alba* Scopoli, Ann. I. Hist. Nat. 1769, p. 21—

Type locality : Northern Italy.]

A Resident species.

*Hab. in Archipelago.**Western Group* : Tenerife, probably Gran Canaria.

Obs. Barn-Owls have been seen in Gran Canaria by myself and described to Polatzek from Gomera, but have not been obtained except in Tenerife. They are very rare.

Range beyond the Archipelago.

Western Europe generally from the British Isles through France, Spain, the Azores, and Morocco, extending eastwards to Mesopotamia and Palestine.

Tyto alba gracilirostris. Slender-billed Barn-Owl.

Strix flammea gracilirostris Hartert, Bull. B. O. C. xvi. 1905, p. 31—Type locality : Fuerteventura.

A Resident subspecies.

*Hab. in Archipelago.**Eastern Group* : Fuerteventura, Lanzarote.*Outer islets* : Allegranza.*Range beyond the Archipelago.*

Does not occur.

Strix aluco. Tawny Owl.

A race of the Tawny Owl has occurred in the Canary Islands and is said to have bred there.

* I cannot myself separate the Barn-Owls of Tenerife from the Mediterranean form *T. alba alba*. Two specimens have been examined in the British Museum collection (Meade-Waldo coll.). Dr. Hartert writes me under date 10/1/19: "In Cabrera's collection in Laguna, I saw, in 1901, several *Tyto (Flammea)* with white undersides, which without any material for comparison appeared to me to be the Mediterranean form."

It is included in this list as a **Rare Visitor**, but further investigation may prove that it is an exceedingly scarce resident.

As I am uncertain which form occurs, no original reference is given.

Cabrera mentions that specimens of this Owl were killed in the Barranco del Agua de Dios in Tenerife (Catálogo, p. 34).

Polatzek included this species in his list of breeding birds (Orn. Jahrb. 1908, p. 161), but never met with it himself in the islands. Writing later (Orn. Jahrb. 1909, p. 119), Polatzek notes that "this species was *erroneously included* as a breeding bird, which statement is here corrected."

Von Thanner (Orn. Jahrb. 1913, p. 189) wrote:—"Until now the 'Wald Kanz' *Syrnium aluco* (Linn.) was not specially authenticated as a breeding bird. I saw a female which had been * taken away from its eggs. It breeds in the lava caverns." The above statement in regard to the nesting of the Tawny Owl must be received with caution. Von Thanner evidently did not take the bird from its eggs himself, and the native Spaniards have very elastic imaginations.

Range. Typical *Strix aluco aluco* is a European species ranging to the Mediterranean. It does not occur farther south. *Strix aluco mauritanica* takes the place of the typical species in northern Morocco. It is possibly this species which occurs in the Canary Islands.

Asio otus canariensis. Canarian Long-eared Owl.

Asio canariensis Madarász, Orn. Monatsber. 1901, p. 54—
Type locality: Gran Canaria.

A Resident subspecies.

Hab. in Archipelago.

Western Group: Tenerife, Gran Canaria, Palma.

Range beyond the Archipelago.

Does not occur.

* Note that Thanner writes in the past tense, "had been."

Asio flammeus flammeus *. Short-eared Owl.

(= *Asio accipitrinus* auctorum.)

Strix flammea Pontoppidan, Danske Atlas, i. 1763, p. 617
—Type locality: Denmark.

The Short-eared Owl is a **Rare Visitor** to the islands.

Although Mompo, Busto, and Serra are said by subsequent authors to record the Short-eared Owl from the Canaries, I consider that the following is the first authentic record:—Mr. Meade-Waldo (Ibis, 1893, p. 196) identified two examples during the three years which he spent in the islands, and from his recording the species as “an occasional winter visitor,” the specimens which came under his notice were probably shot in the winter months. He notes seeing a mounted example in Cabrera’s collection (Ibis, 1889, p. 515) which is probably included in his “two birds” mentioned above.

Cabrera mentions (Catálogo, p. 33) a bird which he killed at Los Rodcos, Tenerife, in the month of July, doubtless the same which Meade-Waldo refers to.

Polatzek shot one in Lanzarote, but fails to record the date (Orn. Jahrb. 1909, p. 119). This may be the same bird as he mentions (under the name of “Sumpfohreule”) as having been shot in Lanzarote at harvest time (Orn. Jahrb. 1908, p. 163).

When in Lanzarote in 1913 I identified a Short-eared Owl in the collection of Don Gonzalez y Gonzalez which had been shot near Arrecife (Ibis, 1914, p. 62).

The above are the only records which have come under my notice.

Range. The Short-eared Owl is a cosmopolitan species, and in winter is found in north-east and north-west Africa.

* This is another instance where I have not followed the Committee of the 1915 B. O. U. List (p. 376) in conserving the name *accipitrinus* for the Short-eared Owl.

Family VULTURIDÆ.

Neophron percnopterus percnopterus. Egyptian Vulture.

Vultur perenopterus Linn. Syst. Nat. 10th ed. 1758, p. 87

—Type locality: Egypt.

A Resident species.

Hab. in Archipelago.

Western Group: Gran Canaria, Tenerife, Gomera.

Eastern Group: Fuerteventura, Lanzarote.

Outer islets: Graciosa, Montaña Clara, Allegranza.

Obs. The absence of the Egyptian Vulture from Palma and Hierro is noteworthy.

Range beyond the Archipelago.

Breeds in southern Europe from Spain to the Caucasus and in northern Africa from Morocco to Egypt, extending down the east coast of Africa to Cape Colony. It breeds in the Cape Verde Islands.

Family FALCONIDÆ.

Circus æruginosus æruginosus. Marsh-Harrier.

Falco æruginosus Linn. Syst. Nat. 10th ed. 1758, p. 91—

Type locality: Sweden.

The Marsh-Harrier is a very Rare Visitor.

It is first recorded by Ledru* in 1810 and is said also to be included by Serra* in his list. The latter reference I have not verified.

Cabrera (Catálogo, p. 33) noted that he shot two in Tenerife in December in the "charcos" formed in the environs of Laguna.

Range. The Marsh-Harrier breeds in Europe, western Asia, and northern Africa (Morocco to Egypt). In winter it ranges through east Africa to the Transvaal and Angola.

Circus pygargus. Montagu's Harrier.

Falco pygargus Linn. Syst. Nat. 10th ed. 1758, p. 89—

Type locality: England.

* See "List of Publications," Part I. *supra*, pp. 86-89.

This is a **Rare Visitor** to the islands.

Webb and Berthelot give it as an inhabitant of Tenerife (Orn. Canarienne, p. 8). When recording this species they particularly remark the absence of *C. æruginosus*, which Ledru is stated to have found in Tenerife in 1810. They are all the more likely to have been sure of their identification of Montagu's Harrier before including it in their list.

Bolle mentions it (J. f. O. 1854, p. 450).

Cabrera says (Catálogo, p. 33) that it is an accidental migrant in the spring, and this observation is quoted by Polatzek (Orn. Jahrb. 1909, p. 119).

The only specimen which I believe to have been procured was shot in Tenerife by von Thanner in the month of February, and recorded in the Ornithologische Jahrbuch, 1903, p. 176 by Tschusi, and by Thanner in Nov. Zool. xi. 1904, p. 431. The year in which it was obtained was not then mentioned, but it appears to have been shot in 1903, as Thanner notes having procured the bird in the "preceding year" and is writing in 1904. Also he remarks that it was shot "on the same morning" as *Saxicola deserti*. Three of the latter birds shot by Thanner are examples of *Cœnanthe deserti homochroa* and are in the Tring Museum; they bear on the labels the dates 24/25 Feb. 1903.

Early writers record it under the name *F. cineraceus*.

Range. Montagu's Harrier breeds in Europe, also in Morocco and Algeria. In winter it ranges to Cape Colony.

***Buteo buteo insularum* *.** Little Insular Buzzard.

Buteo insularum Floericke, Mitteil. österr. Reichsb. iii. 1903, p. 64—Type locality: Gran Canaria.

A Resident subspecies.

* The supposed occurrence of *Buteo buteo buteo* in the Canaries on migration (Ibis, 1893, p. 196) cannot be maintained, the bird in question being an example of the island Buzzard; it is a female with a wing-measurement of 374 mm. Local migration of the insular form *B. b. insularum* may take place between the islands, but not from the continent. The possibility of birds having come from the Azores, though unlikely, should not be overlooked.

Hab. in Archipelago.

Western Group : Gran Canaria, Tenerife, Palma, Gomera, Hierro.

Eastern Group * : Fuerteventura, Lanzarote.

Outer islets : Allegranza.

Obs. The Little Buzzard appears from my own observations to have now deserted the small islet of Graciosa (Ibis, 1914, p. 65), where Meade-Waldo found it in April 1890 (Ibis, 1890, p. 437).

Range beyond the Archipelago.

Azores Archipelago.

Haliaëtus albicilla. White-tailed Eagle.

Falco albicilla Linn. Syst. Nat. 10th ed. 1758, p. 89—
Type locality : Sweden.

This is a **Rare Visitor** to the Canary Islands.

The White-tailed Eagle has been recorded on four or possibly five occasions, but in no single instance has the bird been obtained. This is not surprising, as a wandering Eagle is not the easiest bird in the world to approach.

Early writers seem to have confused *Haliaëtus albicilla* with *Pandion haliaëtus*, and thus what I believe to be the Osprey has erroneously been recorded as the White-tailed Eagle from the island of Lobos by Bolle (J. f. O. 1854, p. 449).

Webb and Berthelot probably fell into the same error. They distinctly note (Orn. Canarienne, p. 6) that they never actually met with the bird themselves, but include the species on the word of others as inhabiting Lanzarote and Fuerteventura. On the other hand, they received the foot of an Eagle which had been killed in Lanzarote and which they identified as belonging to *H. albicilla*.

Godman †, who also omits the Osprey from his list (Ibis,

* Polatzek described and separated the Buzzard of the eastern group (Type locality Lanzarote) under the name *Buteo buteo lanzarotæ* (Orn. Jahrb. 1908, p. 113), but I do not recognize this supposed race.

† Godman undoubtedly knew the difference between the Osprey and the Sea-Eagle. His identification is therefore more than likely to have been correct.

1872, p. 166), wrote that he frequently watched a pair of these birds near Orotava, and added: "I have no doubt about the species" ["*Haliaëtus albicilla*" (Linn.)].

Another apparently genuine record by a reliable ornithologist is given by Tristram (*cf.* Meade-Waldo, Ibis, 1893, p. 185), who "observed and recognised beyond a doubt" the White-tailed Eagle on the beach near Arrecife, Lanzarote. Tristram visited Lanzarote in April 1890.

Cabrera (Catálogo, p. 30) observed three examples apparently all in Tenerife, while I myself saw an Eagle believed to be *H. albicilla* on the 23rd of December, 1908, while riding over the hills from San Matéo to Teror in Gran Canaria (Ibis, 1912, p. 587).

It is worthy of note that Meade-Waldo wrote (Ibis, 1889, p. 4) under *Aquila* sp. inc.:—"I saw several Eagles during November and early in December, but never near enough to be sure of the species."

It is quite probable that the White-tailed Eagle occurs occasionally in the islands in winter when it visits Africa from its breeding-quarters in the north. It has been recorded from the Azores.

Range. The White-tailed Eagle breeds in many parts of Europe and in winter visits northern France.

Accipiter nisus *. Sparrow-Hawk.

[*Accipiter nisus teneriffæ*.]

[*Accipiter nisus teneriffæ* Laubmann, Verh. Orn. Ges. Bayern, xi. 1912, p. 116—Type locality: Tenerife.]

A Resident subspecies.

Hab. in Archipelago.

Western Group: Gran Canaria, Tenerife, Palma.

Eastern Group: Fuerteventura, Lanzarote.

* I have not yet made up my mind to which race this Sparrow-Hawk should be referred. Laubmann has described the bird from Tenerife, and so I provisionally use his name for the bird dealt with here. Dr. Hartert cannot separate the Canarian bird from *A. n. granti*, the Madeiran form described by Sharpe, Ann. & Mag. Nat. Hist. ser. 6, vol. v. p. 485.

Obs. Rare in all these islands except in Tenerife.

Range beyond the Archipelago.

Does not occur.

Milvus milvus milvus. Kite.

Falco milvus Linn. Syst. Nat. 10th ed. 1758, p. 89—

Type locality : Sweden.

A Resident species.

Hab. in Archipelago.

Western Group: Gran Canaria, Tenerife, Gomera, Hierro.

Obs. The absence of the Kite from Palma is noteworthy.

Range beyond the Archipelago.

Generally distributed throughout Europe from Scandinavia to the Mediterranean. Extends eastwards to Asia Minor and Palestine. In Africa it is found in Algeria; Tunisia, and Morocco. A subspecies occurs in the Cape Verde Islands.

Pernis apivorus apivorus. Honey-Buzzard.

Falco apivorus Linn. Syst. Nat. 10th ed. 1758, p. 91—

Type locality : Sweden.

A Rare Visitor to the Archipelago, observed during the spring and autumn migrations.

There are only four records, and these are not absolutely satisfactory as no specimens were obtained; but as the observers, especially Mr. E. G. B. Meade-Waldo, are known to be careful and experienced field-naturalists, I include the species on the following evidence* :—

Meade-Waldo (*Ibis*, 1889, p. 515) writes : "I had a good look at a Honey-Buzzard (*Pernis apivorus*), and was quite certain as to the species." This was on November 21, and later (*Ibis*, 1893, p. 196) he wrote : "An accidental visitor, I have seen only two." He refers to these same

* *P. a. apivorus* should be easily distinguished by a good observer from the Canarian Buzzard *B. b. insularum*. It can be told by its flat head and considerably longer tail, $10\frac{1}{2}$ -11 inches, as compared with $8\frac{1}{2}$ -9 inches in *B. b. insularum*.

specimens in Ibis, 1893, p. 185, where he notes that the species was "recognised beyond a doubt."

Cabrera (Catálogo, p. 31) notes that he saw one in Laguna in the month of May.

Polatzek (Orn. Jahrb. 1909, p. 118) records that he saw one at Teror in Gran Canaria, but gives no date.

I have not myself had an opportunity of handling a specimen of the Honey-Buzzard from the Canary Islands.

Range. The Honey-Buzzard breeds in Europe and winters in Africa. There are many West African specimens in the British Museum, particularly from Fantee (Gold Coast) and Cameroon. A specimen was obtained in Cameroon as late as June by Mr. G. L. Bates. Although no specimen was obtained it can only be the typical species which visits the Canary Islands, the other races of the Honey-Buzzard being found in India and eastern Asia.

Falco peregrinus. Peregrine Falcon.

A Rare Visitor.

It is uncertain which race of the Peregrine inhabits the Canary Islands.

Dr. Hartert in his notes on Falcons (Nov. Zool. xxii. 1915, p. 169) remarks that "Mr. Rud. von Thanner informs me, in litt., that he shot a specimen on Fuerteventura (Canary Islands), the first known to have occurred there. It would be interesting to compare it, as it might possibly belong to *calidus*."

If von Thanner recorded this specimen in print I have missed it when going through his papers.

Dr. Hartert tells me he is of the opinion that the bird in question may turn out to be *Falco peregrinus calidus* Lath.

I have included this bird as *F. peregrinus*. It may turn out to be the typical form *F. peregrinus peregrinus*, but, as Dr. Hartert has pointed out, there is more than a possibility of it being an example of the race *F. p. calidus*, which has been recorded from Morocco as far south as Haha which is south of Mogador in western Morocco (*vide* Nov. Zool. xxii. 1915, pp. 169-170).

Range. Typical *F. p. peregrinus* inhabits north and central Europe and visits Africa in winter. *F. p. calidus* is an eastern race which was originally described from India, but specimens have been obtained in northern Africa as far west as Morocco.

Falco peregrinus pelegrinoides. Barbary Falcon.

(= *Falco barbarus* auctorum.)

Falco pelegrinoides Temminck, Pl. Col. 479, 1829 or 1830
—Type locality : Nubia.

A Partial Resident.

Hab. in Archipelago.

*Western Group** : Gran Canaria, Tenerife.

Eastern Group : Fuerteventura, Lanzarote.

Outer islets : Montaña Clara, Roque del Oeste.

This fine Falcon, over which there has been much confusion, must be considered a **Partial Resident** in the Canaries.

A few pairs inhabit and breed in the most inaccessible spots in the Archipelago, and it occasionally passes through the islands in spring on migration. Whether any of these migrants remain to breed has not been solved.

It was obviously this species which Tristram noted in Gran Canaria in March 1888, undoubtedly breeding birds (Ibis, 1889, p. 17). Meade-Waldo saw them at all seasons of the year (Ibis, 1893, p. 197—*F. punicus*, et Ibis, 1889, pp. 516, 517).

Cabrera (Catálogo, p. 31) notes that *Falco peregrinus* is a migrant from March to April, and also includes *F. barbarus* in his list as a migrant, and says there is a specimen in the Las Palmas Museum †. His notes most probably refer to the same species, which it has now been decided must be called *F. p. pelegrinoides* (cf. Hartert, Nov. Zool. xxii. 1915, p. 171).

* I can find no records of the Barbary Falcon from Palma, Gomera, or Hierro, but shall be surprised if the bird does not inhabit any of these islands.

† The two mounted specimens in the Las Palmas Museum are examples of *F. p. pelegrinoides*.

Von Thanner records (Orn. Jahrb. 1908, p. 214) two migrants to Tenerife which put in an appearance in the autumn of 1907, and he also shot a bird on the 30th of November, 1908. It is probably this species which von Thanner met with in Gran Canaria in February 1909 (Orn. Jahrb. 1910, p. 87) and which he mentions as having seen constantly in Tenerife (Orn. Jahrb. 1910, p. 101).

Polatzek apparently did not observe any migration of this species in the eastern islands. His notes on the resident birds will be found under *F. barbarus* (Orn. Jahrb. 1908, p. 102). Polatzek shot several birds in the eastern islands which he forwarded to the Tring Museum, and it was this material which enabled Dr. Hartert to determine to which species these Canarian Peregrines really belonged. These specimens * are here listed :—

♂ ad. Fuerteventura. 22 June, 1904.

♀ ad. Fuerteventura. 27 June, 1902.

♀ ad. Lanzarote. 12 Nov. 1904.

Range beyond the Archipelago.

This small race of the Peregrine breeds in northern Africa, north of the Sahara (Algeria, Tunisia, Egypt, Nubia, and Morocco), extending in the north-west as far south as the southern Atlas range.

Falco subbuteo. Hobby.

The Hobby is a **Rare Visitor** to the Canaries. It is uncertain which race of the Hobby has occurred in the Archipelago.

It has been recorded on a number of occasions, but with one or two exceptions on very unsatisfactory evidence.

Berthelot (Orn. Canarienne, p. 6) records *Falco subbuteo* as rare in all the islands.

* Since this paper has been in print Dr. Hartert writes to me that he has just received a beautiful female example of this Falcon from Herr von Thanner, who shot the bird at Vilaflor in Tenerife on the 28th of September, 1917.

Bolle mentions it in his first paper (J. f. O. 1854, p. 449), but later (J. f. O. 1857) he omits the species altogether.

Savile Reid (Ibis, 1887, p. 429) recorded a bird from Tenerife which he saw but did not obtain, and wrote: "That the Hobby (*Falco subbuteo*) is occasionally found in Teneriffe I am tolerably certain. I saw a small Falcon, which I recorded at the time as of this species, on the edge of the pine-woods above La Guancha; and Baeza* informed me that he had shot two during his lifetime, one near the coast below Realejo, and the other near Tacoronte. He described the bird accurately, and from his knowledge of the subject I conclude there is no doubt as to these two cases."

Cabrera notes (Catálogo, p. 32) that it occurs accidentally in spring.

Von Thanner records having shot a Hobby in February † 1903 (Nov. Zool. xi. 1904, p. 431), and observed one in the following autumn (14 November, 1903) also apparently in Tenerife (Nov. Zool. xi. 1904, p. 434). The former bird should be examined at the first opportunity if it has not been destroyed.

It is next mentioned by Tschusi who notes (Orn. Jahrb. 1903, p. 176) a specimen procured in February, apparently also by von Thanner. This is obviously the same bird as Thanner himself records (*supra*) as having been shot in 1903.

Range. The typical Hobby breeds in Europe generally and in north-west Africa. It winters in Africa, ranging as far south as Cape Colony. Mr. Ogilvie-Grant records

* Don Benjamin Baeza, a Spanish Captain of Militia, was resident in Tenerife. He is said by Reid to have been "a fairly good ornithologist and taxidermist" (Ibis, 1887, p. 424). He accompanied both Godman in 1871 and Savile Reid in 1887 in their ornithological excursions in the island until his untimely death in 1887.

† Although the actual date is not mentioned, Thanner states that the Falcon was shot on the same day as he procured *Saxicola deserti* (amongst other birds). This specimen of *S. deserti homochroa* is in the Tring Museum and was shot in the month of February 1903.

meeting with a Hobby on the Salvage Islands in the latter part of April 1895 (Ibis, 1896, p. 43). It is represented in north-west Africa (Tunisia, Algeria, and Morocco) by a closely allied race, *F. s. jugurtha*, and it is uncertain which of these two forms has visited the Canaries.

Falco eleonoræ. Eleonore Falcon.

Falco eleonoræ Gené, Rev. Zool. 1839, p. 105—Type locality : Sardinia.

The Eleonore Falcon is a **Summer Visitor** to the Eastern Canary Islands and apparently also a **Bird of Passage**.

Hab. in Archipelago.

Eastern Group : Fuerteventura, Lanzarote.

Outer islets : Montaña Clara, Roque del Este.

It appears to be absent from the islands from the middle of October until the middle of May.

The beautiful Eleonore Falcon was first discovered in the Canary group by Polatzek. This observer lived for the most part in the eastern islands, Fuerteventura and Lanzarote, which leads me to think that *F. eleonoræ* does not often visit the western islands, from which it has never been recorded.

Polatzek was of opinion that this Falcon only comes to breed in the islands.

The following are dated records when the bird has been seen or obtained. The majority of Polatzek's notes and the records (to which his name is appended) appeared in the 'Ornithologische Jahrbuch,' 1908, pp. 104–106. Some of the specimens are in the Tring Museum, where I have examined them.

19 May, 1913 (Lanzarote). A bird believed to be of this species seen on two occasions, but not obtained (Bannerman, Ibis, 1914, pp. 55, 56, & 258).

17 June, 1913 (Fuerteventura). A bird believed to be of this species seen (Bannerman, Ibis, 1914, pp. 89 & 258).

— July, 1904 (Fuerteventura). One bird seen at Oliva (Polatzek).

Latter part August, 1904 (Lanzarote). Many seen near Haria (Polatzek).

- 28 August, 1904 (Lanzarote). An adult male shot (Polatzek). Skin examined in Tring Museum (D. A. B.).
- 2 Sept. 1904 (Lanzarote). An adult female shot (Polatzek). Skin examined in Tring Museum (D. A. B.).
- 7 Sept. 1904 (Lanzarote). A fledged young bird killed (Polatzek).
- 20 Sept. 1904 (Lanzarote). Another older young one shot (Polatzek).
- 23 Sept. 1904 (Lanzarote). A young female shot (Polatzek).
- 14 Oct. 1904 (Lanzarote). Twelve birds seen together (Polatzek). Doubtless congregating before departure (D. A. B.).

From March until the middle of May no birds were observed by Polatzek in 1902. He particularly mentions this, and again that no birds were seen by him during the months of November and December 1904. As Polatzek in addition gives no records for the months of January or February, I take it that he did not observe the bird in the islands then.

It is apparent therefore that the Eleonore Falcon is present in the Canaries from mid-May until mid-October, and that it is absent from the Canaries during the winter from mid-October until mid-May.

Von Thanner records it as breeding on the Roque del Este (the east rock off the north coast of Lanzarote) and on Montaña Clara (Orn. Jahrb. 1913, p. 192), where it is recorded under the vernacular name only—"Eleonoren-falke."

It is interesting to compare these dates with those furnished by Riggenbach, who lived in Mogador over two years.

During this time he did not obtain any examples of the Eleonore Falcon between October and the end of April. Specimens from Mogador in the Tring Museum were obtained from the 30th of April until the 15th of October.

This coincides remarkably closely with what takes place in the Canary Islands.

Range beyond the Archipelago.

The Eleonore Falcon inhabits the Mediterranean islands, Morocco, and Tunisia. It has once been shot in Algeria. It has never been taken in tropical Africa.

Falco vespertinus vespertinus. The Red-footed Falcon.

Falco vespertinus Linn. Syst. Nat. 12th ed. 1766, p. 129—
Type locality: Ingria (= St. Petersburg).

This little Falcon has visited the Canary Islands on several occasions, but can now only be included as a **Rare Visitor**, usually during the spring migration.

Meade-Waldo notes that a good many examples of this Hawk visited the valley of Orotava (Tenerife) during the spring migration of 1890 (Ibis, 1893, p. 197), notably on the 25th of April of that year (Ibis, 1890, p. 429), when they were not uncommon. I have examined an adult male specimen now in the British Museum which Meade-Waldo obtained on the 7th of May, 1890.

Cabrera records another example shot at Orotava in the month of May about the same time (Catálogo, p. 32).

Polatzek obtained a specimen, which he did not preserve, at the end of February 1902, also in Tenerife (Orn. Jahrb. 1909, p. 118).

Range. The Red-footed Falcon breeds in eastern Europe, and in winter visits Africa as far south apparently as Damaraland.

Tinnunculus tinnunculus canariensis. Canarian Kestrel.

Cerchneis tinnunculus canariensis Koenig, Journ. für Orn. 1889, p. 263—Type locality: Canary Islands.

A **Resident** subspecies.

Hab. in Archipelago.

Western Group: Gran Canaria, Tenerife, Palma, Gomera, Hierro.

Range beyond the Archipelago.

Madeira.

Tinnunculus tinnunculus dacotiæ. Fuerteventuran Kestrel.

Falco tinnunculus dacotiæ Hartert, Vög. pal. Faun. ii. 1913, p. 1086—Type locality: Lanzarote,

A **Resident** subspecies,

Hab. in Archipelago.

Eastern Group: Fuerteventura, Lanzarote.

Outer islets: Graciosa, Montaña Clara, Allegranza,
Roque del Oeste*.

Range beyond the Archipelago.

Does not occur.

Pandion haliaëtus haliaëtus. Osprey.

Falco haliaëtus Linn. Syst. Nat. 10th ed. 1758, p. 91—

Type locality: Sweden.

A **Resident** species.

Hab. in Archipelago.

Western Group: Gran Canaria, Tenerife, Palma,
Gomera, Hierro.

Eastern Group: Fuerteventura, Lanzarote.

Outer islets: Graciosa, Montaña Clara, Allegranza,
Lobos, Roque del Oeste.

Obs. The Osprey probably also breeds on the Roque del Este, the most inaccessible of the outer islets, which has not been visited for many years.

Range beyond the Archipelago.

A very wide distribution throughout Europe, Asia, and northern Africa, breeding as far south as the Cape Verde Islands. In winter it visits tropical Africa.

Family PHALACROCORACIDÆ.

Phalacrocorax carbo carbo. Cormorant.

Pelecanus carbo Linn. Syst. Nat. 10th ed. 1758, p. 133—

Type locality: Sweden.

A **Rare Visitor**.

It is mentioned by Busto (according to Cabrera and Polatzek) and by Cabrera, who however had never seen a specimen (Catálogo, p. 64).

Von Thanner records having seen a captured bird at Arrecife in Lanzarote, and remarks (apparently on the

* I observed the Kestrel on this rock, but it is most unlikely to breed there.

evidence of local fishermen) that the "Cuervo marino" appears in the winter off the small islets (Orn. Jahrb. 1913, p. 189).

When in Arrecife on the 16th of June, 1913, I examined a stuffed specimen of the Cormorant in the collection of Don Gonzalez which had been shot locally, and recorded it in my report of the expedition (Ibis, 1914, p. 63). This may be the same bird as von Thanner has recorded (*supra*).

Range. The Cormorant inhabits the coasts of the north Atlantic as far south as, and including the Mediterranean. I doubt whether it is found much farther south than the Straits of Gibraltar, though in winter a few wander apparently as far as the Canary Islands. Subspecies have been described from Africa.

• Family SULIDÆ.

Sula bassana. The Gannet.

Pelecanus bassanus Linn. Syst. Nat. 10th ed. 1758, p. 133
—Type locality: Scotland.

The Gannet is an **Occasional Visitor** in winter, but sometimes, according to Meade-Waldo, is abundant round the islands especially between Fuerteventura and Cape Juby on the mainland (Ibis, 1893, p. 198). The same observer also records a single bird seen off Fuerteventura on the 30th of March, 1888 (Ibis, 1889, p. 508, and MS. diaries).

Previous to this the Gannet had been observed only by Bolle, who about the year 1853-4 handled immature specimens in both the Binna and Léon collections in Tenerife and Gran Canaria (J. f. O. 1857, p. 348).

Polatzek says (Orn. Jahrb. 1909, p. 132) "the Gannet appears very seldom," but I question whether he ever saw the bird himself.

Range. This well-known British bird, so familiar to every voyager in the Bay of Biscay, extends its range in winter down the north-west African coast (according to Hartlaub) as far as Senegal. It is probably very rare south of the Canary Islands,

Mr. Gurney writes to me that occasionally, when brought up by the wind, the Gannet has been extraordinarily plentiful on the coast of Portugal and off the south of Spain (where, by the way, I have often noticed it myself in winter), and further notes that it seems uncertain where the southern range of *S. bassana* meets the northern range of *S. capensis*. Details and maps are given in Mr. Gurney's 'Life of the Gannet.' Curiously enough the most southern gannetry in Europe is the Bull Rock, Co. Cork, while the most southern breeding places known are on Bonaventura and Bird Rocks in the Gulf of St. Lawrence.

[To be continued.]

XXV.—*Further Ornithological Notes from the Neighbourhood of Cape San Antonio, Province of Buenos Ayres.*

Part II. TROCHILIDÆ—PLATALEIDÆ. By ERNEST GIBSON, M.B.O.U., F.Z.S.*

238. *Chrysuronia ruficollis* Vieill. Golden-tailed Humming-bird.

Mr. Hudson, in his brief notice of this species, states that it visits the more northern portion of the Argentine Republic; but he himself obtained specimens at Conchitas (near Buenos Ayres), and Durnford did the same at Punta Lara, farther south.

It has been left to Mr. Claude Grant to chronicle the Golden-tailed Humming-bird as a winter visitor to the Ajó district; for I had attributed the appearance of a Humming-bird during that season to a stray individual of our regular summer species (*Chlorostilbon splendidus* Vieill.)—most likely the young, from the darker plumage. Miss Runnacles, it should be noted, "observed it in every month throughout the winter of 1909." Picking out what I formerly took to be these aberrant occurrences of *C. splendidus* in my diary, I come to the conclusion that the Golden-tailed species arrives about the middle of April

* Continued from 'Ibis,' 1918, p. 415.

and leaves towards the end of August, these movements synchronising very nearly with its Glittering congener, which arrives on the 10th of September and leaves early in April. During all my long years' records the winter visitor figures but rarely; many years are an absolute blank.

240. *Chlorostilbon splendidus* Vieill. Glittering Humming-bird.

The Splendid or Glittering Humming-bird arrives sometimes as early as the 10th or 11th of September, but is not generally in evidence until the beginning of October. Towards the end of March it is scarce, and has definitely left by the middle of April.

It is not in my power to add to Mr. Hudson's description of its appearance and habits, and I will confine myself to a few additional notes upon its local nesting-customs. Only of late years have I found it taking advantage of the eaves of a dwelling-house, as described by Miss Runnacles; our billiard-room, where there are some projecting ends of wire which tie down the French tiles, and which has an eastern exposure, is a favourite site. The verandah of my house, clothed with creepers, has also an annual pair, and visitors to our afternoon tea-table never fail to be charmed with the dainty nest suspended from a jasmine-twig only a few feet overhead; the tiny tail of the occupant is seen over the one side, and on the other rests the head (the crimson bill projecting upwards), while the little black eyes calmly survey the movements of the human group. The interiors of two arbours in the garden are occasionally favoured, the nests being attached to a bamboo stem or a honeysuckle spray. But my former researches—the result of long experience—invariably led me to inspect certain young Coronillo trees (a densely-foliaged evergreen) in small and open glades in the woods, where, just inside the thick umbrella-like top (and always on the eastern or sunny side) and suspended sometimes only two or three feet from the

ground, there was always every probability of a find. These situations contain an infinite number of analogous little bunches composed of dead Coronillo leaves bound together by spider-filaments (being indeed the home of one of these insects), and I have not infrequently passed a quarter of an hour, crouched or kneeling under the tree, systematically scanning or examining each of these objects with care (for the Coronillo is cruelly thorny), and encouraged in my quest by the sharp needle-like "zipp" uttered by the bird as it occasionally sped past unseen—only to find that the nest had actually been within a few inches of my face all the time!

My earliest nest is one of the 24th of October; of four taken in the last week of that month, one contained much-incubated eggs, showing that they were approximately laid about the middle of October. Up to the middle of November the occurrences are general, after which there appears a break lasting until the middle of the month of December; this again is followed by a fresh start, which continues the laying-season until the middle of January. Occasionally the bird sits very close, for it is a fearless creature.

The newly-hatched young are repulsive-looking things, resembling small, black, hairy caterpillars. Who would connect these objects, lying in a fairy cradle, with the future flashing jewels—gifted with a mobility that is apparently less an action of flight than an exercise of volition?

The following is the description of a typical nest:—Attached to two twigs. Outside measurement at top $1\frac{1}{2}$ in. (35 mm.) by $1\frac{1}{4}$ in. (32 mm.) deep; inside, $\frac{7}{8}$ in. (22 mm.) by $\frac{5}{8}$ in. (16 mm.). Built of fine wool, moss, lichens, etc.; the outside disguised with small dark leaves and fragments of bark, cunningly held in place with spiders' webs; lined with thistledown.

The two eggs are pure white, much elongated, and with equally rounded ends. They average 13×8 mm.

245. *Stenopsis bifasciata* Gould. Wing-banded Goatsucker.

Hudson obtained a single skin of this species at Conchitas (Province of Buenos Ayres). Durnford found it in Chubut (Patagonia)—“rather rare there and in the vicinity, though resident and breeding in that district.”

It is not to be wondered at, then, when I re-visited Buenos Ayres and the Yngleses at the end of 1916, I was exceedingly interested to find awaiting me a skin of the Goatsucker in question. It had been one of a pair which had appeared in June of that year (middle of an unusually cold and dry winter) in the “huerta” or vegetable-garden and orchard of the Yngleses, and is the first and only recorded occurrence since I took up residence in the district—forty-four years ago. The specimen was completely a *lusus naturæ* for all the people I showed it to, and to whom the Spanish designation of “Dormilón” or Sleeper (of general application to the whole family of Goatsuckers in this and the adjacent republics) conveyed no significance.

No other species of the Caprimulgidæ or Goatsucker family are known to me, or have occurred, so far as the Ajó district is concerned.

257. *Chrysotilus cristatus* Vieill. Red-crested Woodpecker.

Iris dark brown; bill black; legs and feet vary from dark grey to a greenish yellow.

It would not seem as if there was much to supplement my former notes of 1880 on this, our only Woodpecker. It has not increased in numbers, and certainly has not diminished. A pair generally nests in the garden (sometimes in a Paraiso tree, which is only separated by a railing from the kitchen-door, a few yards away), and two other pairs in the head-station woods. The first-mentioned birds are very tame, frequenting the patio frequently, and I have disturbed them in front of the very office door. Elsewhere, a small wood, or the old willow-trees remaining

at an abandoned sub-station or derelict cattle-well, may have its pair of occupants. Being to a considerable extent a ground-feeder, it is amply satisfied with a roosting-place and some modest facilities for its nesting-requirements.

I find that by a clerical error I had represented the eggs as being laid in the first half of October; the statement should refer to the latter half of that month (from the 15th onwards), and the period extends as late as the 23rd of November. Five is an exceptional clutch, four being the usual number. They are pear-shaped and glossy, and average 28×21 mm.

263. *Ceryle americana* Gm. Little Kingfisher.

My knowledge of this species—if I am right in my surmise of its identification—is exceedingly limited. In 1880, on the Arroyo Sauce Grande (between the sierras Ventana and Pillahuincó), at a locality known as “Las Horquetas,” I am positive that I had a glimpse of a Kingfisher; but neither then, nor since—on a subsequent visit to the valley of that river in 1904—could I gather any information on the subject from local residents. As the Ynglesitos estancia, on the slope of the Balcarce sierras (midway between Ajó and the Ventana-Pillahuincó ranges) and where there are various streams, none of our several English managers or staff ever chronicled the existence of any member of this genus; and the same remark applies to the Tomasa estancia, situated on the level campo adjacent to the Azul and Las Flores arroyos. Naturally, about the Yngleses estancia itself, where there are no streams and practically no banks to any of the lagunas of an adequate nature for nesting-burrows, the presence of a Kingfisher was not to be looked for. Accordingly, I was equally surprised and pleased when, on a visit to the Violetas estancia (about ten or twelve miles west of the Yngleses) in the summer of 1908-9, an individual bird sped past me as I sat on the bank of the Violetas laguna; I followed up, but failed to locate it. Of course, there is the possibility that it was only an errant or summer visitor; but I am inclined to the belief that it probably found its quarters

suitable for a permanent residence. The laguna is large, with open water to half its extent and quite six feet deep, where banks rise to a height of three or four feet; the shallower extremity contains great beds of rushes and flags; and it possesses a large permanent stock of fish (of natural introduction and now fully acclimatized), such as the "Liza" or Grey Mullet and the "Pejerrey," a species of Merluce. In any case, the bird was certainly a Kingfisher, and in size corresponded to *C. americana*.

268. *Guira piririgua* Vieill. Guira Cuckoo.

If the "Urraca" (vernacular for Magpie) has had a fair account of itself in my former paper, and a still fuller life-history from Mr. Hudson, the reason probably arises from the fact that the bird is "sui generis" wherever it is found—unique in plumage, flight, and gait; curious in its habits of everyday life; attention-compelling in all its vocal repertoire; eccentric from its method of nidification, where the nest is lined with green leaves, and the large but varying number of eggs are as often wasted on the ground as deposited in their proper situation; whilst the same eggs resemble large and lovely turquoises enveloped in snowy lace.

Harmless and unpersecuted, it is as numerous as ever in the Ajó district; perhaps, to judge from the increased number of nests found, more so in the summer than formerly.

The nest is generally situated in the centre and towards the top of the very thorny Coronillo tree about eight or nine feet from the ground and is built of sticks and twigs, sometimes nearly as flat as a Wood-Pigeon's, at other times with a considerable depression or hollow; in the latter case there is a lining of green leaves from the elder or "durasnillo negro." Generally, the parent bird is very wary when approaching or leaving the nest—I was particularly struck with this fact in the case of a nest situated in a Coronillo tree in front of the Yngleses dwelling-house and only some ten yards from the main door, and it only happened by mere

chance that I became aware of the existence of the birds and their nest.

The clutch may vary from four to ten or eleven, to which may be added those dropped on the ground below the nest (thereby often betraying the nest). I have taken eggs from the 21st of October to the 18th of March; the latter would evidently represent a second brood. Their average measurement is 41×31 mm.

270. *Piaya cayana* Linn. Chestnut Cuckoo.

The one and only recorded occurrence of this handsome Cuckoo was in January 1913, when Mr. M. A. Runnacles shot a specimen in the garden of "Linconia," about six miles north-east of the Yngleses head-station. Besides kindly keeping the skin for me, he was able to add the information that the solitary individual was being mobbed by other birds (an experience to which our local Cuckoo, previously alluded to, is never subjected).

The specimen is now in the British Museum, and Mr. Charles Chubb comments upon the interesting incident as follows:—"This individual specimen is of the Paraguayan or southern Brazil variety (*P. macrura*), and is of special interest in connection with its range. In all probability it had crossed the estuary of the River Plate from the neighbouring Republic of Uruguay, instead of being a wanderer from Paraguay, which latter course would have involved following the very sparsely-wooded littoral of the Province of Buenos Ayres."

276. *Conurus patagonus* Vieill. Patagonian Parrot.

In 1879 I alluded to the "Barranquero" or Barranca-bird as being common, though not a resident, passing over the Yngleses in the morning from the south-west on the way to its feeding-grounds in the rincónes, and returning in the evening, during all but the four summer months; to this I added further details and notes. In course of subsequent years I was enabled to corroborate the above period, with little or no variation. But, since

about 1900, there has occurred a curious verification of Hudson's statement that the species is dying out—"possibly owing to the altered conditions resulting from the settlement of the country by Europeans" (his remarks on this subject, together with the general account of the Bank-parrot itself, should be taken in conjunction with my original notes). From the date referred to (1900), the appearance of the former flocks became scarcer and more irregular, until very shortly after they seem to have ceased altogether—possibly about 1902. At least I have no further recorded occurrence after that year, and I was told that 1903 and subsequent seasons were total blanks. Equally with Mr. Hudson I mourn the Barranquero's departure, and to show its former familiarity I may mention how, in July of 1893, I shot three (little knowing they would probably be among the last of our familiar and noisy visitors) on the roof of the Yngleses dwelling-house. They were perched on one of the chimneys, down which they fell into an empty grate, and (I am glad to say) were duly made into "specimens"—the last of many of their species which figure in my skin-book.

About the year 1902 our manager at Ynglesitos (on the southern slope of the Balcarce sierras) told me of a curious incident regarding a nesting-site. A pair of Barranqueros excavated a burrow and nested in a well which supplied water for the sheep-dipping plant close to the head-station—quite undisturbed by the activities and noise of the sheep-corral. Apparently the Barranquero—like Truth—must now be sought for down a well!

280. *Bolborhynchus monachus* Bodd. Green Parrakeet.

To my former notes on the "Cotorra" or Green Parrakeet I have little to add. The species is as abundant as ever, and likely to continue so under present conditions. Food, in the shape of thistle-seeds at least, is not likely to cease out of the land, and more maize also is grown in the district than formerly; whilst the nesting facilities have been improved rather than otherwise under the following

modification:—In 1872, when I first went to the Yngleses, I found the Parrakeet nesting in the garden and of course the surrounding woods of the head-station. Besides the larger structures in the higher trees there were innumerable newer and smaller ones suspended from the lower branches of the Tala and Coronillo trees—frequently to be easily reached from the ground. In 1884 I succeeded in banishing the fruit-marauders out of the garden, and undertook a systematic campaign against the denizens of the woods. The plan was to send a couple of peones, armed with long bamboos, on the extremity of which they wrapped some tow, and by this means set fire to the nests. By undertaking the operation in the first half of December—just before the eggs were laid—there remained no time available for the construction of a fresh nest and the rearing of a brood the same season; nor, given the general situation of the nests at the end of a branch, did the tree suffer any damage. Occasionally a Gaucho would perhaps find some difficulty in riding his half-tamed colt through the woods on his way to the head-station, and as he glanced at the crackling fires in the trees (the cause of his mount “trying to take two sides of the road at once”) would mutter to himself “cosas de Don Ernesto”—“some of Don Ernesto’s little jokes.”

The *modus operandi* was quite successful, and in the course of a few years the Cotorras became reduced to a merely ornamental quantity (a note in my ornithological diary about that time says “Destroyed all Parrakeet nests in woods. Mem.: Some fifty opossums (*Didelphis aurita*) were killed as they left the burning nests”).

But it so happened that in 1872 there were three one-year-old Eucalyptus trees in the garden, the first grown in the district. These showed such rapid growth and adaptability that from the year 1880 many hundreds were subsequently planted—forming woods, groups, and avenues. In twenty years or more, many of these attained a height of perhaps a hundred feet (one such grove is visible at least twelve miles away), and the Cotorras have taken advantage thereof

to the almost total abandonment of the Tala woods. The nests are practically inaccessible (at the summit of the Eucalyptus); nor can fire be employed for their destruction without the risk of ruining the trees—the Eucalyptus being highly combustible. Occasionally a regular battue is organized with half a dozen guns and maintained for a couple of days, but such sporadic efforts are necessarily only temporary, of limited effect, and expensive. So the Cotorra has come into its own again, and flourishes accordingly. Average measurement of eggs, 29×21 mm.

286. *Strix flammea* auct. Common Barn-Owl.

It would be difficult to say when the Barn-Owl first gained a footing—or, more accurately speaking, found a roof-tree—in this district. There are scores of admirable situations amongst our old Tala trees (cavities and hollows), as if specially designed for seclusion and nesting-sites; but it is obvious that the abundant and ubiquitous opossum would render these advantages utterly nugatory. Nor at present have I succeeded in seeing it established in any barns or lofts of the head-station. A tradition has it that away back about 1860—on a fire being lit in the Yngleses dwelling-house at the beginning of winter—an Owl was brought down the chimney (doubtless of this species). In later times, I think 1900, I was told that an Owl's nest had been found on the top of a haystack, underneath the "Dutch roof." But so far, at present, it is necessary to go farther—not a-field, but a-town—to look for it. The church-tower of the neighbouring town of General Lavalle harbours a pair, and there are others in various old disused buildings and in a large cattle-killing establishment (now closed) where it can be seen flying from beam to beam. And it is from there undoubtedly that it has spread to Linconia estancia (a couple of miles away)—the manager of which told me in 1913 that there was "quite a colony" in the roof of the dairy.

The preceding notes constitute at present all the information I have been able to gather regarding the species.

287. *Asio brachyotus* Forst. Short-eared Owl.

Though not unfamiliar to me, I would hardly agree with Mr. Claude Grant that the Short-eared Owl is "fairly common" in our district. On occasion I have put up a pair and a single bird in one day, but otherwise I have ridden the campo daily for months—at all seasons of the year—without chronicling a single occurrence. A proof positive is that I have never found a nest, or been able to procure the eggs, through any of my peones or shepherds. It has been left to Mr. Hudson therefore to furnish a fuller and more satisfactory description of the species and its habits than lies in my power.

Twice at long intervals (1873 and 1899) I have shot specimens in our woods. These aberrant instances (for its habitat is the rough grass-lands) were not merely casual, for in both cases the individual had been observed *in situ*—sleeping on a branch—various days previously. The first-mentioned hooted somewhat like a dog baying as it took flight on being disturbed, the second was mute.

Four authentic clutches of eggs found by others more fortunate than myself were taken respectively on the 13th and 23rd of December, 28th of January, and the 26th of February (midsummer the two last). The number never exceeded three, and the average measurement of those that came into my possession is 44×33 mm. The largest is 45×34 mm. and the smallest 41×33 mm.

290. *Speotyto cunicularia* Mol. Burrowing-Owl.

To Hudson's full account of this species, and my former notes of 1879, there can be little to add. During the great flood years of 1913-15 it had a most disastrous experience. On my arrival at the Yngleses on the first-named year I found it drowned out of all the lowlands, and misfortune seemed to have rendered it less noisy and aggressive to passers-by. As might be inferred, all through the subsequent summer it was exceedingly numerous on all the higher sandy land, where the refugees had naturally added to the usual denizens. On my return again in the spring of

1915 (with the flood still prevailing) the over-population had much decreased. Still later, during my last visit (the summer of 1916-17) when a drought had ensued, the birds were generally distributed over their former area.

Regarding the breeding-notes, the full clutch would seem to be six, and the whole month of October—from the 5th onwards—the favourite season. The eggs average 35×29 mm.

292. *Circus cinereus* Vieill. Cinereous Harrier.

To my previous notes of 1879 I have nothing to add. My diary is only a monotonous record of individual birds observed at varying intervals and all periods of the year. Nor are these occurrences so numerous as to confirm my former statement that it was common in our district—a modification of my opinion in which I am borne out by Mr. Claude Grant.

Mr. Hudson writes little more *in extenso*, though he is able to briefly describe the nesting-situation and the eggs, a good fortune which has not come my way.

293. *Circus macropterus* Vieill. Long-winged Harrier.

This is the species erroneously alluded to by myself as *Urubitinga uncinata* Temm. (Ibis, 1879, p. 411).

Hudson dismisses it very briefly:—" *Hab.* South America. This species is also found in the Republic, but is not so common as the former species (*Circus cinereus* Vieill.)." But it is to be noticed, on the other hand, that he gives prominence to *Antenor uncinatus* as "the common Buzzard of the Plata region."

Claude Grant totally ignores *A. uncinatus* in the Ajó district of the "Plata region," though meeting with it in central Paraguay, where it also occurred with the first-named species still farther north. Yet, in conjunction with Miss Runnacles, he makes a small collection of *Circus macropterus* or *maculosus* at the Yngleses in Ajó, the series being so sufficiently complete that he is able to give a meticulous analysis of the "no less than six bewildering

stages of plumage which it undergoes" (Ibis, 1912, p. 277).

In view of the foregoing, it may doubtless be assumed that the Harrier found in Ajó is *Circus macropterus* (Vieill.) aut *maculosus*.

A clutch of three eggs, collected by Miss Runnacles on 14 November, 1909, appertained to a nest situated under a tuft of esparto in the rincónes, and was composed of a little dry grass. The three white eggs are somewhat pointed and rough-shelled. They average 50×37 mm.

295. *Buteo swainsoni* Bp. Swainson's Buzzard.

So far as Swainson's Buzzard is connected with the Argentine Republic (*vide* Sclater and Hudson's work) the recorded occurrences are limited to two, the first taken by Mr. Hudson himself at Conchitas in 1860, and the other by Mr. Frank Withington at Lomas de Zamora in 1886—both localities being within a few miles of Buenos Ayres.

Since then Claude Grant collected two individual specimens in Ajó on 4 November, 1908, and 9 December, 1909, respectively. Both were young birds and males.

I have no further information to furnish on the subject. It is satisfactory to learn that the species can be added to the Ajó list.

296. *Buteo albicaudatus* Vieill. White-tailed Buzzard.

Hudson is familiar with this species as a migrant, visiting the pampas in the spring and autumn in a gregarious form—"flocks varying from thirty to forty, or as many as one or two thousand birds."

Claude Grant does not seem to have met with it during his visits to Ajó.

With all due deference and reserve I submit the following extracts from my diary (the only occurrences recorded in forty-five years), and which I would suggest may probably refer to the species in question:—

"15 December, 1872. Observed a flock of eleven fine grey-blue Buzzards hovering over Yngleses head-station woods.

Were beating against the wind, rising and falling, or soaring in spiral circles; occasionally one or two would alight on a tree.

“20 November, 1901. Some eight or ten Buzzards (similar to the above-mentioned) seen in vicinity of Linconia estancia. Flight slow and heavy; occasionally wheeled in circles. Frequently lit on ground, and allowed of fairly near approach on horseback.

“3 December, 1901. Three or four seen in above locality.

“29 December, 1901. Seven or eight passed over Yngleses head-station in afternoon, flying leisurely north. With one or two exceptions all were adults, but in my hurried rush for a gun I had to content myself with the last straggler of the lot—an immature bird—which fell to a charge of number six shot at a considerable height. Later on Cumming shot another immature specimen in the wood. (Both these skins were unfortunately lost before their identity was established. The plumage was exceedingly soft and loose, and the skin extraordinarily thin and delicate.)

“3 January, 1902. One adult seen on north side of Yngleses.

“3 January, 1904. A flight of about a dozen beat over Yngleses head-station, flying south.”

As will be seen from the preceding, these rare and irregular occurrences of a gregarious and striking bird of prey naturally impressed me, and I could have wished to have been more fortunate in the acquisition of specimens.

297. *Buteo erythronotus* King. Red-backed Buzzard.

This bird has not been recorded in the locality again since I obtained a pair in June of 1875.

300. *Geranoaëtus melanoleucus* Vicill. Chilian Eagle.

In my former paper (Ibis, 1879, p. 409) I dealt at length with this—our largest and most strikingly handsome bird of prey.

I know that it subsequently continued to frequent and nest in its old haunts in the rincónes for several years, but

in 1899 I was told that it had not been seen for some time. Indeed, personally, from 1881 (when I saw a pair at their nearly-completed nest in the rincónes) the species has only twice come under my observation—a young bird in immature plumage at the woods of the Yngleses head-station in 1882, and an adult in the Real Viejo woods (on the southern boundary of the Yngleses) in 1904.

Nevertheless, Mr. Claude Grant obtained a series of specimens on his visit to the Yngleses in 1908–9, which shows that the locality continues to be favoured by residents or visitors.

303. *Falco peregrinus*. Peregrine Falcon.

Iris dark brown. Cere, eyelids, and nostrils yellow. Beak greyish-blue, black at tip. Legs and feet bright yellow.

My first record (and specimen) of this world-wandering Falcon is dated 20 December, 1884, and by a very curious coincidence there lies before me the last acquisition, one of Claude Grant's collecting, bearing the date of 20 December, 1909—an interval of exactly a quarter of a century.

After the first-mentioned occurrence, I do not seem to have observed another individual until 1898, a blank of no less than fourteen years. The following year (1899), a pair took up their abode during the summer in some very lofty Eucalyptus trees in the Yngleses garden. On both being secured for my collection, they were succeeded by a single bird, which I refrained from molesting. In the following years the same situation has been favoured generally—but not invariably—by a pair. These were always summer visitors, the earliest chronicled appearance being 15 November and the latest noted 11 April. Other occurrences are exceptionally rare—two or three individuals seen in the open campo and probably identical with those alluded to, and one between Ajó and Dolores.

I have no hesitation in connecting our visitors with the lofty Eucalyptus trees now existent, and which I have already spoken of. It would seem as if the Peregrine found the denser Tala woods did not furnish a satisfactory eyrie

to roost in, for I have never seen the bird or birds in any but the Eucalyptus, from that of 1884 to date. To show how little shy it is, the first individual's tree was within twenty yards of the billiard-room, adjoining the Yngleses dwelling-house.

That it nests with us is possible, but I have never detected any proof that such is the case. On coming in to roost at sundown the birds are sometimes silent, sweeping up to their perch and remaining for the night. Otherwise, they circle round once or twice, when the cry or scream is very striking, clamorous and metallic.

I weighed a pair. The male scaled 1 lb. 9 ozs.; the female 2 lbs. 5 ozs. The discrepancy is the more striking when dissection showed that the former contained in the crop the best part of a Spotted Dove (*Zenaida maculata* Vieill.) and the latter only the remains of a small bird.

304. *Falco fusco-cærulescens* Vieill. Orange-chested Hobby.

Iris brown. Eyelids, nostrils, and gape pale greenish-yellow. Beak bluish-grey, shading into black at tip. Feet bright yellow; claws black.

This Patagonian Hobby (which I formerly alluded to as *Hypotriorchis femoralis* Temm. in 'The Ibis' for 1879, p. 412) is an extremely rare visitor to our district. The only records are three:—A male shot on 23 August, 1875, a female on 28 June, 1880, and another female collected by Miss Runnacles on 27 June, 1909. My own two specimens were shot in the Yngleses head-station woods. It will be noticed that the dates correspond to the winter-season.

305. *Tinnunculus cinnamomimus* Sw. Cinnamon Kestrel.

Since I last wrote of this species in 1879 (under the name of *T. sparverius* Linn.) it would seem to have become scarcer. My diary actually only mentions three occurrences (the earliest being on 5 March and the latest 11 September), which—even allowing for my frequent absences in the winter-time—is but a poor record. Claude Grant expressly

states that very few were seen by him ; though, as he actually noticed three or four in the winter of 1909, he had not much reason to complain. For a wild Patagonian bird, one of those which came under my observation somewhat startled me by its calm contemplation, as I rode past, from the roof of an unoccupied house quite in the centre of the neighbouring town of Ajó. As a rule, I have found it always very wary and shy.

306. *Elanus leucurus* Vieill. White-tailed Kite.

The White-tailed Kite is exceedingly rare in our district, Claude Grant only obtained two specimens during his two visits to the Yngleses. The following are my sole experiences :—

3 May, 1875.	One seen. Yngleses head-station woods.
30 Aug., 1875.	Pair. In rincónes.
31 Aug., 1875.	One. Passed over Yngleses garden.
3 Sept., 1875.	One. As above—probably the same.
30 June, 1886.	One shot. Yngleses head-station woods.
Summer, 1898–9.	Twice seen, as above.
August 1899.	One frequenting head-station woods and scaring poultry-yard.

Since the last entry I have no further record to date.

Mr. Hudson draws attention to the fact that this Kite “ in its actions strikingly resembles a fishing gull, frequently remaining poised in the air with body motionless and wings rapidly vibrating for fully half a minute at a stretch, after which it flies on or dashes down upon its prey.” I was deceived myself in this way on our first time of meeting (and subsequently mentally recorded the species as the “ Gull-like Hawk ”). The individual in question I took to be, at a distance, an immature *Larus maculipennis*, and I was much exercised why it should occasionally poise and hover over the wood, until the mystery was explained when there was a sudden (but unsuccessful) stoop downwards, doubtless at a nesting Spotted Dove in one of the trees.

A young male in my collection (obtained by Claude Grant) has the following notes on the label :—" Iris clear hazel-brown. Bill black. Cere, gape, orbits greenish yellow. Legs and toes lemon-colour. Claws black."

307. *Rostrhamus sociabilis* Vieill. Sociable Marsh-Hawk.

Adult. Iris ruby-colour. Gape and bare parts round eye bright orange-red. Beak and claws jet-black. Legs and feet bright orange-red.

Young. As above, except gape and bare parts yellow. Legs and feet orange.

Since I described the habits of this handsome and interesting species in 1879, my diary furnishes me with but little further information. It is fairly regular in its migration, arriving in this district about the middle of September and leaving midway in March, though I have known it to be abundant at the end of August and to disappear at the end of February, in spite of overflowing swamps. Whence it proceeds and where it goes—particularly during such an epoch as that of our four years' drought—I do not know ; but in such floods as that of 1899-90, and the still greater one of 1913-15, the numbers all over the country (during the usual season) were extraordinary. Not only were they in evidence in their favourite swamps and all over the inundated country-side, but flying over the Yngleses head-station and woods (one individual actually working through the dark recesses of the latter like an Owl), and occasionally even alighting on a Eucalyptus or Tala tree (again a most unusual procedure). As the shallows dried up, and the waters withdrew into their normal swamps, it was wonderful to see the accumulation of water-snail shells (*Ampullaria canaliculata* Lamarck), the sole food of this Hawk, at the foot of each and every isolated Durasnillo or clump of the same trees, or posts of a fence passing through or near a swamp. " Bucketsful " would be the only adequate description. One such heap at the base of a post numbered over 1500, and all the posts on the line of fence, for a considerable distance, had an approximate quantity !

I believe there was a nesting-colony in the centre of a deep swamp near the Yngleses head-station in 1913, and I have had occasional odd clutches of eggs brought to me at intervals during the past years; but, frankly speaking, the situations affected for breeding-purposes are not easy of access or to my liking. The rushes are too dense for canoe-work, and to negotiate them on horse-back calls for youth, recklessness, and a horse equally powerful and steady. So I content myself with saying "I have been there," and a reference to one such colony as described in my former paper (*Ibis*, 1879, p. 414).

The usual clutch of three eggs (previously described) average 42×35 mm.

309. *Milvago chimango* Vieill. Chimango Carrion-Hawk.

Iris very dark brown. Beak light brown. Bare parts pale white. Legs and feet light grey. Claws brown, also the beak.

To my former notes on the Chimango, Mr. Hudson has added such a detailed and interesting account of the species and its habits that any further remarks on my part can only be of an incidental nature, and only refer to its nesting characteristics.

In passing, I would corroborate my original statement as to the large numbers which roost at nights in the swamps during the winter-time.

Referring again to my previous observations on its nesting-sites—when I insisted on its local preference for the centre of a large or deep swamp versus trees or grass-coverts,—I now furnish the following modified rectifications. From 1873 to 1892 I had continued to take nests solely in the first-named situations. Then, in the last-named year, I found three separate nests on the ground—"merely a hollow amongst grass, roughly lined with a little wool,"—the last as late as 24 December. There was no recurrence of the experience until 3 December, 1898 (one similar nest). The following year (1899), on 5 November, I came across no fewer than six scattered nests in the rincónes, amongst the

esparto—"all built of esparto, deeply cup-shaped, but slight; lined with some wool. Three of these had newly-hatched young." The three preceding instances constitute my personal knowledge of the Chimango as a ground-nester. As a tree-builder I have absolutely no record until 1913, when an extract from my diary (under date 1 October) states "a pair observed building a nest at Cumming's puesto (sub-station) at the very top of a Wattle-tree, about twenty feet from the ground, and where they had much difficulty in conveying the long slender sticks on account of the windy day. First instance of tree-nesting which has come under my observation in forty years." Again, on 30 October, 1915, "a pair building in Eucalyptus tree on the roadway and close to my house at Yngleses head-station. Am also informed of another nest in Tala wood not far off, where also a brood was brought off last year." All these three nests were built of sticks. It is true Claude Grant's collection of ten eggs (representing, say, four clutches) was taken from either tree- or ground-nests, but it is to be borne in mind that he struck the beginning of the big drought at Ajó, when all the swamps were dry.

If the abundance of the species is taken into consideration, and the number of natural and artificial woods (even the rincónes are dotted with Tala trees), whilst also the district is fully blessed with thistle-beds and grass-coverts, my contention I think is fully proved that the Chimango in our district is inherently addicted to the habit of seeking the swamps for shelter at night and the rearing of its young in the nesting-season.

The eggs, previously described, average 43×34 mm.

310. *Polyborus tharus* Mol. Carancho Carrion-Hawk.

Since I wrote in 1879 respecting this bold marauder "Very common, and very destructive to lambs," circumstances have undoubtedly altered. The diminishing number I trace back in my diary to the year 1898, and I think it has not been confined to this locality alone. It is attributable doubtless to the increased persecution brought on by

the destructive and mischievous habits of the bird, in conflict with the enhanced value of sheep-stock. In the old days, the ordinary Merino* sheep was of small account (I once bought from a neighbour 400 at 15*d.* for consumption), and little attention was paid to the annual toll in newly-born lambs or the loss in sheep-skins destroyed before the shepherd discovered a dead animal. A shepherd's invariable reply, on being interrogated as to the deficit in his flock at the half-yearly counts, was "Lost á campo," *i. e.* either hidden in a thistle-bed or grass-covert until months had passed, or the skin ruined by Caranchos immediately after the sheep's death. And the explanation was tendered and accepted, without comment. Times have changed; the improved sheep-breed stocks are too valuable to be dealt with in the former casual manner, and the shepherd is called upon to be "á campo" himself all day long, and not merely supervise the movements of the flock from the kitchen of his puesto and the look-out ladder reared against the gable of the roof; so that now the sheep-skins handed in must tally with the live-stock counted, or the Gentle Shepherd is treated most ungently, and has a short shrift. Hence, the general harrying of nests wherever they are found, the use of the shot-gun, and the wholesale employment of strychnine. The last-named is an efficient, but risky factor; accordingly, we always keep the poison under lock and key, and it is only made use of—on scientific principles—by one of the members of the staff. For that purpose a newly-dead horse is chosen, or an inefficient mare is killed † (carrión of

* The Merino was a most timid animal, and would abandon her newly-born lamb on the slightest alarm; whereas the modern Lincoln or Cross-bred mother stands by her offspring, and defends it from all comers.

† In connection with the above, I would draw attention to the following non-ornithological but curious fact. When a Gaucho takes off the hide of an equine animal he never skins the head, which, with the ears attached, he invariably severs at the last vertebra and leaves apart. Not so with anything bovine; the whole of the head-skin (including the very lips) is removed intact with the hide, and the head is not detached from the carcase. It might be argued that the head-hide

this nature invariably attracts the Carancho and the Black-backed Gull in preference to that of a cow or sheep); a score or two small gobbets of meat are detached, pierced, and some crystals of strychnine inserted, and these are scattered on or about the carcass—it being the case that the quarry will bolt these convenient morsels without suspicion, but is shy of any obvious poisoning of the main dish itself. Personally, I do not like the last-named method, as, in addition to a dozen Caranchos dead round such a “kill,” I have seen quite a holocaust of Gulls (of various species), Chimangos, Bienteveos, etc., against which there was no grudge; and it was but too obvious their death had not been a peaceful one. However, to return to my opening statement: A gathering of half-a-dozen or upwards is no longer frequent in our district, and I would not think of going out on a moonlight night as of yore with chalked gun-sights, to shoot them in the outlying woods of the head-station, where they formerly roosted in abundance.

I had thought to have exhausted all there was to be said about the species and its habits in my former paper, but Mr. Hudson has infinitely improved upon my notes with a fuller description and a wealth of details and anecdotes. To the latter I have but one or two to add, culled from my diary. On one occasion, I saw “a pair following an Oven-bird in the open, which was ultimately seized on the wing before it could gain the adjacent woods, and carried off.” My experience regarding its raptorial habits is so dissimilar to that of Mr. Hudson that I was much impressed with the occurrence. Claude Grant also confirms my opinion—“never saw it take living prey.” Another entry, referring to “no less than sixteen Caranchos trying to make a square meal off one Waterhen,” is indicative of short commons.

of the former is of less commercial value than the latter, which may be admitted; on the other hand, the horns of the cow cause an extra trouble in skinning, which does not arise in the case of the horse. But why always subsequently separate the head of the nobler animal, and leave that of the other *in situ*? The Gauchos themselves, on being interrogated, have no other reply than that of “We have always been accustomed to do so.”

Finally, the late flood-years, 1913-15, are characterised by "a marked scarcity in the species, in spite of so many dead sheep lying about."

Hudson describes how they "will follow a sportsman to pick up the wounded birds, keeping at a safe distance themselves." He is quite right in regard to their caution, so long as the sportsman remains erect, gun in hand. But I have invariably found that on bending or kneeling over my game, with the gun laid on the ground or concealed by my person, the otherwise wary Carancho will approach flying curiously up from behind, when a quick rise to my feet and a snap-shot overhead would bring it down to the accompaniment of a screech of surprise and dismay (when a Carancho is in trouble he lets the world know it!).

Confirming former breeding-notes, I have found it beginning to build or repair an old nest actually on the 1st of May (beginning of winter), in the middle of that month, early in June, and not unusually in July.

The handsome clutch of three eggs has been fully described. They vary greatly in appearance and size. My last general average gives the measurements as 62×48 mm.

314. *Phalacrocorax brasilianus* Gm. Brazilian Cormorant.

In 1896, the late Dr. P. L. Slater wrote me that he was sure of the existence of a second Cormorant in the Bay (*i. e.* the estuary of the River Plate), and requesting me to try to obtain specimens. His supposition was based—according to a previous communication made with the same object to Mr. John J. Dalgleish in 1894—as follows:—"You will see that Aplin observed two Cormorants in the River Plate, the smaller of which he calls *P. penicillatus* (p. 152). This is not correct, and I do not know what the species is. Could you persuade Mr. Gibson (whom I had the pleasure of meeting at the B. O. U.) to get us some specimens? He is nearby, I believe." From my own knowledge in the Ajó district (inland, estuary, and seaboard), I am only aware of the existence of *P. brasilianus*, of which fact I think I was ultimately able to convince Dr. Slater.

Hudson gives the range of *P. brasiliensis* to as far south as the Patagonian rivers. But though he entertains the possibility of two other species which belong to southern Chili and Patagonia (*P. imperialis* King and *P. albiventris* Lesson) as occurring in the southern provinces of the Argentine Republic (and therefore embracing that of Buenos Ayres), there seems to be no absolute warranty for the suggestion.

Of the local abundance of the species here there can be no doubt—wherever there is water, fresh or salt. Perhaps, when I referred to the Atlantic seaboard, I should actually have drawn the line at Cape San Antonio itself, for I have no record or recollection of its occurrence on the sandy seashore. Inside the Cape it is numerous on the coastal banks and mud-flats; and on all the Cangrejales with their tidal lagunas. Amongst the swamps one finds it abundantly, singly or in small groups, perched on a down-bent durasnillo over the surface of the water, or more securely established on the post of a wire-fence. During the spring and early summer of two flood-seasons (1899–1900 and 1913–15) large flocks were in the habit of passing the Yngleses head-station, travelling approximately from south-west to north-east and returning at sundown. These may have had some roosting-site, or possibly a nesting-colony. It was on one of these occasions, in the early morning, that one or two of the birds produced the sound alluded to by Hudson, and which resembled a pig grunting excitedly. To me the experience was unique, as it was to the native boys accompanying me, who had never heard it before.

Regarding its breeding-habits I am in complete ignorance. In referring above to a possible nesting-colony, I have in my mind's eye the broad and deep cañadon of the Real Viejo, where it makes a bight in the woods of that name—a situation formidable to a horseman in normal seasons, but quite impossible in flooded years, and when, more by token, peones and shepherds are too fully occupied otherwise than to attempt adventurous expeditions into such a fastness in search of bird-colonies.

315. *Ardea cocoi* Linn. Cocoi Heron.

In 'Argentine Ornithology' Mr. Hudson's long article is less an account of this individual species than an interesting dissertation or "causerie" on Herons and other birds in general.

My own previous notes of a dozen lines (Ibis, 1880, p. 158) would seem to embody all I had to state about the Cocoi Heron. My diary since that year is only a long record of birds observed, singly or in pairs, and at all seasons of the year. It has neither increased nor diminished in numbers, but in the spring of 1913, from September to the end of December (when the flood was at its greatest), I saw only four between Buenos Ayres and Ajó on as many journeys, and none at all on the Yngleses. There was apparently too much water—with consequent dispersal of fish-fry—for even a Heron.

I must qualify my former statement to the effect that the Cocoi Heron "nests singly, not in colonies." For, though the first part is correct as a general rule, yet I have since found five pairs or upwards associated with a colony of the White Egret (*Ardea egretta* Gm.). In this latter case the nests resembled those of the Egret, being built solely of junco and slight in make; whereas solitary nests are more solid, with a basis of durasnillo.

The eggs have been already described. None of my later clutches exceeded three in number. The average measurement of the eggs is 65×47 mm.

316. *Ardea egretta* Gm. White Egret.

Iris light yellow. Eyelids and bare parts round eyes greenish-yellow. Bill yellow. Legs, feet, and claws black.

Hudson has incorporated my former notes in his brief allusion to the common and widely-distributed White Egret in 'Argentine Ornithology.' Accordingly, there only remains for me to bring my account of 1879 up to the present date.

Had my esteemed friend—the writer referred to—foreseen

the cruel and pitiless persecution this most lovely and harmless bird was to undergo from the votaries of fashion, he would have used his able pen and caustic wit to some extent, if, as it may be anticipated, to no effect. To the hunting of the Nutria (*Myoptomus coypu*) has succeeded the pursuit of the "Pajaro blanco" or White Bird; and the war of extermination has raged for over two decades. To show the lengths it was carried:—In 1897 two hunters made a raid on a nesting-colony of the Yngleses; the uninvited visitors were strangers to the district and had ridden all the way from Mar del Plata (the well-known fashionable watering-place thirty leagues to the south), having heard that such a colony existed under my protection. As events turned out, the protection proved effective; for the poachers were surprised early on the first morning of their would-be exploits, and before they had killed more than a half-score birds.

Needless to say, none of my own people are allowed to indulge in the bird-plume trade. But it is a curious irony that colonies of this nature sometimes ignore or are ungrateful for the sanctuary afforded them. The settlement alluded to consisted of this Egret (*A. egretta*), the Dark Night-Heron (*Nycticorax obscurus* Bp., Roseate Spoonbill (*Ajaia rosea* Reich.), and White-faced Ibis (*Plegadis guarauna* Linn.). Situated in a very deep swamp and totally isolated from all traffic, the colony was only disturbed on the occasions when my town-visitors desired to inspect it. If these happened to include ladies I had a boat provided, which was drawn by a horseman or by a harnessed horse driven from the bows of the craft. As the thousands of birds left their nests and hovered overhead in the brilliant sunshine the scene was of extraordinary beauty—the snowy-white Egrets, rose-pink and vermilion Spoonbills, iridescent Glossy Ibises, and grey-blue Herons, all in kaleidoscopic movement—with the blue sky above and blue water and dark green rushes below ("Move the boat a few yards, Pedro," *sotto voce*, as an egg explodes in a near nest and a whiff of sulphuretted hydrogen grows and spreads!). The

duration of this settlement extended over several years, but it has been totally deserted since 1898.

As I formerly recorded, the White Egret is irregular in its appearance. The fact is emphasized by my notes taken during the late memorable flood. From 16 September, 1913, to 19 March, 1914 (spring and summer), whilst I was in residence, I only saw a total of four individuals on the Yngleses; notwithstanding which, I was told on good authority of a nesting-colony on the neighbouring Tuyu estancia, not half-a-league from our boundary-line. "Gross ingratitude for my former protection and care" is the remark appended to the entry in my diary. Again, on a brief visit lasting from 1 September to 4 November, 1915, under the same flood-conditions, none at all were seen.

The nesting-habits have been fully described by myself. Subsequent observations state that five and four eggs are common clutches. Also, that the sitting birds are not shy; and are silent except when two neighbours disagree, "when they draw themselves up to their full height, erecting the head and neck plumage, and clatter their mandibles at each other, looking unutterable things the while."

Average measurement of eggs 55×39 mm.

317. *Ardea candidissima* Gm. Snowy Egret.

My former notes and those of Hudson embody possibly most of what is to be said about the Snowy Egret.

Much of what I have just written about the preceding species (*A. egretta*) is applicable to *A. candidissima*. From 1886 to 1898 there is an absolute blank in my diary, whatever may have been the cause of same. At any rate, the succeeding years are emphatic in their uniformly negative sense:—"None seen about the Yngleses," "None observed on journey to Dolores or Buenos Ayres," etc. In the recent flood-years I record its total absence in equally clear terms.

It may be that the above phenomenon is of a passing or casual nature. The graver alternative is the gradual extermination of both species in the Argentine Republic and Paraguay. I am aware that in the latter country the very

Indians themselves have been enlisted in the nefarious plume-traffic, and that winter visitors and tourists to the capital (Asuncion) are keen competitors with the local traders.

I have nothing to add to my former notes on the nesting-habits of the Snowy Egret. My egg-book gives the last record in 1886, when it was nesting in community with the Roseate Spoonbill in a colony situated in the Cisñeros cañadon.

The average measurement of the eggs is 54×40 mm.

320. *Butorides cyanurus* Vieill. Little Blue Heron.

Adult male. Iris yellow. Bare parts round the eyes and base of bill bright greenish-yellow. Bill dark brown, shading into black at tip. Legs and feet olive-green. This bird has a curious sulphur-coloured tuft of down on the breast and thighs.

Female as above, except that the bill is black instead of dark brown, with the under edge of lower mandible pale yellow.

That I should have overlooked the occurrence of this little Heron from 1872 to 1899 is possible, but hardly seems credible. Yet, when my local observer, Francesco Roldan, brought me one of a pair in March of the last-named year, the species was a complete novelty to us both. Roldan informed me it was one of a pair, and looked very small as it sat huddled up on a rush beside clear water, in a deep cañada. On taking to flight, it uttered a harsh powerful note. What happened to Roldan was, that after placing the dead bird in the bows of the boat, he was hurriedly changing his position for a shot at its mate, when he slipped and fell, with the result that the gun was discharged, singeing the present specimen and blowing a considerable hole in the side of the boat.

Perhaps three or four were observed in the course of the next four years. In 1904 I secured one of a pair: "Female. Notes on iris, bill, and feet similar to above. Soles of feet bright saffron. Claws dark brown." The two following

years only make mention of one bird seen. Claude Grant did not obtain the species himself at Ajó in 1909, but quotes Miss Runnacles as having observed "quite a number," in spite of the drought, during the summer of that year, of which three specimens were obtained, as also the eggs for the first time. In the summer of 1913-14, during great flood, I noted half-a-dozen, in pairs or singly, and took two nests.

It would seem to be a summer visitor in our district; rare, and irregular in its appearance, even in seasons of flood. It is not at all shy; witness the following: "Shortly before sundown one passed through a glade in the garden at Yngleses head-station; coming out of the woods and flying over the players on the tennis-court, at a height of perhaps twenty feet; and so out across the estancia patio towards the open country." When disturbed, it rises with the neck curiously elongated, but almost immediately draws it in, then at first "wafts" slowly along till the rushes force it to rise, when the speed becomes greatly accelerated. From its rarity, and peculiarities of flight, one is generally too startled at first to readily recognize what family the bird belongs to. The harsh "churr"-ing cry is not general, even on these occasions.

Small fish or fry constitute its food, and one which I skinned was singularly fat—an unusual trait in a Heron.

Of two nests which I took on the 20th and 21st of November, 1913, one contained three eggs and the other only one. They were situated about a hundred yards apart, amongst the junco in a very deep part of the swamp, and absolutely identical in form and materials. Each consisted of a small platform of dry junco stems suspended some twenty inches above the surface of the water, in such a fashion that one could see all below it. They were very slight, and comparatively shallow—perhaps fourteen inches across, outside; and six inches across the hollow for the eggs. The birds rose short and silently on both occasions.

Eggs pale blue in colour, with an average measurement of 39×29 mm.

321. *Ardetta involucris* Vieill. Variegated Heron.

To my previous notes on this species (Ibis, 1880, p. 159) Hudson has added such an admirable account in 'Argentine Ornithology' that there is little left for me to supplement. Of the extraordinary gift it displays in protective self-effacement, I have not been an actual witness. But Mr. Hudson's accuracy of observation is only equalled by his descriptive powers—to both of which I bear witness.

My diary presents no novelty between 1879 and 1913. The species was regularly observed: but never to such an extent as to call it common or even abundant; and in the winter-time it seemed even less so. In the spring and early summer of 1913 (when the country was so inundated) I made various journeys to Buenos Ayres and was also much about on the Yngleses, without seeing a single bird from the middle of September till the end of January; though it must be admitted that no fewer than three clutches of eggs were brought to me in that interval. On the 29th of January, however, riding (and nearly swimming at times, "bola á pie" as it is called when the water is over the withers, because the horse's feet appear to be rolling on bowls) between the Palenque district and the head-station I put up no fewer than nine individuals, "the first three rising close together from amidst the water-weeds in shoal water at edge of big cañadon; the other six from deep junco-beds." From that date to the end of March it was undoubtedly very abundant, and observed every day when I had occasion to be out and cross the larger swamps. During my brief visit to the Yngleses of September–October 1915, under similar flood-circumstances, I only saw two or three individuals.

I have known it to rise so close to a horse as to be knocked down by the rider's "rebenque" or short whip. One such bird was brought to me, but only lived for a day. When irritated, it uttered a feeble strident note—the sole occasion of its kind, for otherwise it is always mute.

I have never had the good fortune to discover a nest myself, and of the dozen clutches which have been brought to me, the account varies considerably. The consensus would

seem to be that it is always situated in a junco-bed in a very deep swamp; that it is invariably and entirely built of the junco-stems, generally dry, but on one occasion of the green flowering extremities; that it is not built up from the surface of the water (as I had previously stated), but suspended above it at a height of a few to twenty inches; it is very small, as Hudson mentions, and generally a slight, shallow, platform-structure. But amongst the above, three of a very distinct design were described to me, taken by different collectors (two of whom were quite trustworthy) and at intervals of many years—1873, 1892, and 1913. These, though small, were of a cup-shaped formation, and rather neat. It had occurred to me that the weight of the full clutch of five eggs, after a period of incubation, might have caused the interwoven platform, of small pliable stems, to bulge downward; but on reference to the three instances quoted, only one (consisting of four much-incubated eggs) afforded the possibility; the others were of one and two eggs respectively and quite fresh. So the divergency remains a problem for the present.

The date varies from 1 October to 8 February, no fewer than three occurring in January. Of the dozen clutches there are four of five eggs each and three of four (much-incubated). As has been said, they are of a very beautiful rich green colouring, particularly when fresh.

Average measurement of eggs 32×26 mm.

323. *Nycticorax obscurus* Bp. Dark Night-Heron.

Male. 11 September. Iris orange. Legs dark blue.

Male. 11 February. Iris orange-red. Bare parts round eyes, gape, and under mandible green. Upper mandible black. Feet green, claws brown.

The Night-Heron has held its own in our district ever since I knew it first in 1872, and I confess to the pleasure its presence always affords me as I ride through the swamps. So long as any water is to be found at all in a dry season, one or two may be met with at the deeper ponds (it seems to be entirely a freshwater bird, especially as the cangrejales

do not afford it the requisite rush-coverts). I judge it to be partly migratory, as it is scarcer in the winter-time.

In my round journey between Buenos Ayres and Ajó, 15-25 September of 1913, at the height of the inundation, I did not observe a single individual, nor on the Yngleses in the interval. The first was noted there on 10 October, after which it continued to be observed—sparsely—until the end of December. In January 1914 there were more individuals and some small flocks which, by the 30th of that month, had so increased that I wrote: "In great numbers, amounting to considerable flocks in some cases. I have certainly never seen so many in one day." February was similarly prolific; but, as I remarked, "The summer heats have produced such dense surface-growth of duck-weed, that this and other similar species are forced to congregate at the so-called passes, where traffic has left some open water." The following year (1915), during the months of September and October, I found it generally distributed, though not so abundant as in the previous season.

Hudson has mentioned its habit of constructing false nests or platforms to perch upon, formed by breaking down the rushes across each other. These, in my early days, were a source of mystery to me, as I looked upon them as embryo nests for breeding-purposes. The perch selected for a fishing-station is generally a stout durasnillo beside clear water, the bird's weight being sufficient to bend down the sapling to the desired height.

To quote from Hudson, "On being disturbed by day it rises heavily flapping with a loud qua-qua cry." At night-time, the note produced is a strong fox-like bark (very eerie as the horseman struggles through the deep and apparently endless swamps), and I have heard them repeating the same note as they circled restlessly round the head-station buildings at night after a heavy rain.

In 'The Ibis' for 1880, p. 156, I described a nesting-colony of the year 1873, where it was in community with both Egrets (*A. egretta* and *A. candidissima*). One such other I discovered in 1884. This time, alas, its only confrère

was the larger Egret (*A. egretta*). The situation selected was again the heart of a large and deep cañadon. The Night-Heron was in a minority ; of its nests, some were distributed amongst those of the Egret, but the greater part were retired to one side of the colony, in a thick bed of junco, and placed some distance apart from each other. They were smaller than those of the Egret, almost invariably built up from the surface of the water (whereas the Egrets' are of the platform nature), and rather more strongly constructed, the material being the smaller dry junco-stems. The majority of the clutches were much incubated (2 November) and a few nests containing young—one with no fewer than four. The full clutch, however, seemed to be three.

Average measurement of eggs 50×37 mm.

325. *Euxenura maguari* Gm. Maguari Stork.

The "Cigueña" or Maguari Stork is always a striking feature in the Pampean landscape, either stalking meditatively over the plains or soaring skywards. Large in size, with bold black and white plumage, and scarlet lores and legs, it is a most handsome and familiar bird. Harmless, and a great scourge to all vermin and snakes, it is rarely molested, and it is often found close to the estancia buildings (particularly at the "kill") and sub-stations, or even in the vicinity of small towns.

I said my say about the species in my former paper, and my diary since then contains little in the way of novelties. Though common in our district, I have never seen congregations of hundreds, such as Hudson alludes to ; groups varying from half a dozen to thirty have been the largest number. These naturally are drawn together by the casual attraction of locusts, fish-fry, or tadpoles, or, it is to be feared, an abnormal number of grass-nesting ducks, when the eggs and ducklings pay heavy toll. Occasionally it is to be seen fraternising with, or in company with, the Wood-Ibis (*Tantalus loculator* Linn.) when that irregular summer-visitor comes to us. Undoubtedly the Maguari Stork is somewhat of an egg-robber, and I have witnessed it harry

a Lapwing's nest in spite of the owners' strenuous defence.

The nesting-habits have been fully described formerly. Of nearly a score nests subsequently examined, the full clutch has never exceeded four eggs and as often consists of three. The average measurement of these is 74×52 mm.

326. *Tantalus loculator* Linn. The Wood-Ibis.

Adult male. Iris dark blue. Head and upper half of neck bare, of a dusky black colour with a shade of purple in it and covered with whitish scales. A horny plate on the vertex of the head of a light brown colour. Base of bill black verging into dark brown. Legs bluish; feet flesh or pale salmon colour; claws black. Under surface of wings tinged with pale pinky-yellow.

Female similar.

Young. Iris dark blue; head black, upper half of neck dusky; bill yellowish or bone-colour; legs and feet dark grey, almost black, at feet-joint pink mottled with black.

The Wood-Ibis is entirely a summer visitor, though not necessarily an invariable one, some years passing without its putting in an appearance at all in our district. On the whole, since 1875, I have observed it with considerable regularity—alone, in pairs, small flocks, or even gatherings of as many as one to two hundred. The first arrivals have been as early as 12 November, the latest departures 22 April, the two extremes consisting of stragglers. Years of drought are the most favoured; in the first summer of the great flood only four were seen, and these at the curiously late date of 27 March. Some of the arrivals would seem to consist of immature birds only, others of adults, or again of both. Occasionally they are to be found on the open plains, but as a rule they gather to the shrunken lagunas and mud-holes, and one wonders how they eke out a livelihood in these situations. Easily approached on horseback, they are shy of the gunner on foot. As late as January of 1917 I surprised a flock of approximately two hundred at a small laguna (all that was left of

a great cañadon), and as I rode round the covering belt or thicket of durasnillos they rose in grand and wild confusion, the bulk of them to settle down again; whilst others, in pairs or small flocks, made off to the neighbouring Real Viejo swamp. Seen soaring, or flying at a height, the Wood-Ibis bears a considerable resemblance to the Maguari Stork in size, majestic flight, and plumage, whilst the naked head and different colouring of the feet are not readily distinguished. In these cases I have found the curved bill of the former, outlined against the sky, the readiest clue to identification. So far as my experience goes the Wood-Ibis is mute.

327. *Plegadis guarauna* Linn. White-faced Ibis.

Confirming what I wrote formerly on this Ibis—the “Cuervo” or Crow, as the misapplied Hispano-American rendering designates it,—Hudson furnishes further information. Which, again, I would wish to supplement from my later notes.

That it is a migrant is undoubted; but, so far as this locality is concerned, the inrush may take place as easily in the autumn as the spring, given the favourable conditions of heavy rains. As a rule, it is scarcer in the winter months, though always resident; but even then, in certain years, I have known it to be about in large flocks at the end of June and onwards. Altogether my diary affords much general data, in which would-be deductions are constantly subverted by distracting variations.

It is in the early spring, however, that one looks for the great migration proceeding from the south. The arrivals are coincident with the spring rains, and if the former are unusually numerous a wet or flood-season may be anticipated. I have frequently heard the remark from old Gauchos on these occasions: “There are many flocks of Cuervos coming in, Patrón; look to yourself, for a flood comes also.” And the prognostication was always correct, as I know from grim experience. How often have I lingered at the “Fenometer” or swamp gauge-post, after noting that it marked another

inch above normal, and watched the incoming flocks, divided between the ornithologist's interest and the land-owner's anxiety. Arrow-shaped, javelin-formation; small bands, huge flocks—now high up in the sky, anon skimming unexpectedly over the rush-beds: silent, inexorable, innumerable. And with a sigh, I have gone back and said to my staff: "The weather is clear and the barometer favourable, but the water has risen further, and the Cuervos continue to come in like an Egyptian plague; to-morrow we move out such-and-such threatened flocks of sheep on to the higher land." For with fifty to sixty flocks, summing perhaps a hundred thousand sheep, and a country-side resembling the old Lincoln or Cambridgeshire fen-districts, the problem and its solution were of a difficult nature, in spite of the legend that "the Gibsons had evolved a web-footed breed of sheep at the Yngleses"!

The Cuervo is a very tame bird, and pays no attention to the passing horseman or even the approximation of a human being on foot. To the ordinary gunner it presents no interest, either for the pot or, happily so far, on account of its iridescent plumage (I speak to its immunity in our own locality; from somewhere must come the many wings and tails one sees on ladies' hats in the civilised or fashionable world). Nevertheless, I was rather taken aback by two curious instances of domesticity in a bird of this family. One hot forenoon in February an individual walked into the patio and moved about completely regardless of those people present; it pecked at the dry turf in a mechanical and perfunctory manner, and finally flew away. Fifteen years later, also in the summer-time, another bird apparently found some suitable food on the garden-path a few yards in front of the dwelling-house, and made itself at home for quite an appreciable interval.

Both Hudson and myself have mentioned how it is not confined to the marshes, but feeds on the plains in the summer when grasshoppers and small locusts are abundant. It is also a feeder in the vicinity of carrion or offal—Hudson says on the larvæ of the flesh-fly—but I opine that

when the kill is fresh, small particles of animal matter do not come amiss.

At one time I used to see it in conjunction with the Little or Snowy Egret (*Ardea candidissima*) when that species was still common with us. And it is often associated with the two Gulls (*Larus cirrhocephalus* and *L. maculipennis*), as witnesseth the following entry: "In extraordinary numbers—packed like sardines—whilst feeding on fish-fry in shoal water in company with Gulls. I put up one such flock which absolutely filled the sky with black wings."

It is only on taking to flight that the loud laughter-like "ha-ha-ha" is uttered. The flocks on wing are mute. A wounded bird when handled gives vent to a feeble squawk.

Hudson is silent as to its breeding-habits, and I myself was ignorant of these at the time I formerly wrote in 1880. On 30 November of 1885, however, it was my good fortune to find a large colony nesting in community with even a greater number of the Roseate Spoonbill (*Ajaja rosea*) in the heart of the immense Cisñeros cañadon, which lies between the Tuyu and Yngleses estancias. The bottom of the swamp being fairly firm and even, and my horse proving too nervous for the task of facing the movement and noise of the birds, I withdrew to terra firma, staked out the steed, stripped to my shirt, and returned to the scene. With the water beyond my waist in most places, it was not altogether easy to pencil notes and bestow eggs in the fishing-creel slung round my neck; but otherwise I had full freedom of action, and the day was fine, the water warm (and free from leeches), and there were no stinging flies or mosquitoes about. Under these circumstances, the interest of the subject was enhanced by the beauty of the birds—the rose-pink and intense-carmined Spoonbills and the metallicly-iridescent Ibises. I enjoyed myself immensely.

The nests of the Ibis were small light platforms constructed of dry junco, sometimes built up from the surface of the water, in other cases suspended a foot and a half or two feet from the surface. There were already some young

on this occasion, and a fortnight later, on a subsequent visit, most of the nests had hatched out. Though the full clutch of eggs is three, I never saw more than one or two young in a nest. These, on being approached, abandoned the nest and scrambled away amongst the reeds.

The eggs are of a blunt-oval form, the shell without gloss. In colour, a uniform light blue. Measurements vary from 50×35 to 53×39 mm.

In connection with some of the foregoing species—all waterfowl typical of our great marsh system and birds after my own heart—I would like to mention the free-air collection I formed at the Yngleses head-station in 1885. They were all brought in as nestlings and fed by the peones' cook in the open patio, nor were they allowed to be molested by men, dogs, or cats. The feathered assortment consisted of the Roseate Spoonbill (*Ajaja rosea* Reichenb.), White Egret (*Ardea egretta* Gm.), and White-faced Ibis (*Plegadis guarauna* Linn.)—perhaps half a score of each. There were also one or two Cocoi Herons (*Ardea cocoi* Linn.), and as many Dark Night-Herons (*Nycticorax obscurus* Bp.). Three "Chajas" or Crested Screamers (*Chauna chavaria* Linn.) lent weight and dignity to the assembly, and the dominant position once held by a former Maguari Stork, known to fame as "Byles the Lawyer," was promptly assumed by a Dominican Gull (*Larus dominicanus* Licht.), which neither feared man nor respected any other living being. With the exception of the last-named (a pinioned bird), all these flew about the patio at their own sweet will as they attained maturity, perched on the garden-railings after they had been fed, and roosted at night in the adjacent Paradise trees. Later on they began to make excursions to the neighbouring cañadas, returning at nightfall; in course of the ensuing winter they commenced to take "nights out," and when spring came they went away for good. To visitors, the feature of the exhibition was less the number and variety of all these beautiful birds than their extraordinary tameness

and the state of freedom they enjoyed. Locally my bird-proclivities had long been known ; but even my neighbours were startled to find Ibises where they would have looked for poultry, and to see Spoonbills, Ilerons, and Egrets winging their way from the swamps into the patio as the bell rang at sundown for supper, and proceeded to take up their abode for the night.

328. *Theristicus caudatus* Bodd. Black-faced Ibis.

The Black-faced Ibis or "*Banduria de las Sierras*," as it is denominated here, is a winter visitor to our locality, my earliest date being 28 April and the latest appearance 28 July, or three brief months in all. Moreover, these appearances are rare and very irregular. In 1875 I saw a pair. In 1880 I noted two or three pairs, and two small flocks of seven or eight. In 1882 there were even more occurrences, including a flock of about thirty. A long blank ensues until 1902, when two small flocks were noted—one on the Yngleses, and another thirty miles away towards Dolores. Since then my diary is silent. Due to my not infrequent absences from the locality in the winter-time these records are necessarily partial, but I am led to the conclusion that either from climatic reasons or, what is more probable, the altered conditions of human occupation between the confines of Patagonia and this latitude in the Province of Buenos Ayres, there is a restriction in the number of the species—or at least in its tendency to a northern migration (it is an ominous circumstance that the late Dr. P. L. Selater should have written me in 1900 asking for a specimen-skin of the Black-faced Ibis, "as none existed from Argentina in the British Museum").

It is a most noticeable bird—in size, coloration, and cry. I have always found it frequenting the open campo or plains, where it is very shy and difficult of approach, even on horseback. On taking to flight, or when alarmed, the note is short, metallic, and sonorous. The flight is low and heavy, but powerful.

329. *Harpiprion cærulescens* Vieill. Plumbeous Ibis.

Since I wrote of this "Banduria" as being not uncommon (Ibis, 1880, p. 159), it has gone far to falsify my statement, and its plight seems even worse than that of its congener, the preceding species (*Theristicus caudatus*). From the above-mentioned year (1880) to the present date my diary holds only one entry—an allusion to a pair shot on the Yngleses in the winter of 1894, by Mr. Frank J. Matthew.

Both these "Bandurias" are too wild and shy, I take it, to visit or frequent inhabited localities. Should anyone have an opportunity of examining the railway maps of the Argentine, he will be struck by the amazing network of iron roads which traverse more particularly the Pampean Zone of the Province of Buenos Ayres down to the River Colorado. These, with the development of agriculture and the corresponding system of colonies, have in the last thirty years gradually established a barrier no longer to be franked by migrants of the nature of these two Ibises, so conspicuous in appearance, so wild by nature—most emphatically denizens of the utterly lonely wastes. It is therefore a matter of congratulation and gratitude that Mr. Hudson should have put on record his interesting account of their ways and habits whilst they were still with us.

My former allusion to the one nest of the Plumbeous Ibis must continue to be taken as it was written—a strong supposition without absolute verification. Nor can I now trace the fate of the three eggs therein referred to (probably destroyed for want of satisfactory identification). I am informed that no eggs of the species are to be found in the British Museum.

330. *Phimosus infuscatus* Licht. Whispering Ibis.

Of very irregular occurrence, the recorded appearances of the Whispering Ibis in our district are few and far between. In April of 1898 it was observed in flocks passing over the north side of the estancia, "generally a pair in line, followed by other pairs at short intervals, to the number of sometimes

a dozen or more." In October of the following year a large flock was seen in the Rincones. None were chronicled again until November of 1901, when one individual was noted near the head-station in company with Gulls, and another in the Palenque district feeding in a cangrejal and quite alone. Since that year it does not seem to have again come under my observation.

Claude Grant found it no nearer than Paraguay.

331. *Ajaja rosea* Reichenb. Roseate Spoonbill.

My former notes upon the Roseate Spoonbill were brief, and at that time (1880) I had not yet discovered a breeding-haunt of the species.

To the first part there is not much to add, though, owing to the striking beauty of the bird, its image occupies a large space in the observer's memory and his diary. It is a great frequenter of open lagunas (either fresh or salt water) and small pools or ponds on the plains, and, being a spring arrival, is naturally associated with the fine weather and vivid vegetation of that season. Unceasingly active whilst feeding, one's attention is caught and held by the bird's movements from the moment that the rosy colour is observed far off—whether it is a single bird, a pair, or a flock. Here we have none of the Heron or Egret's watchful immobility. "Cucharón" or Big Spoon is its local designation, and the spatula-like bill sweeps constantly from side to side as its owner advances, rapidly or leisurely, quartering systematically the pond or mud-hole. On the wing again—say, a V-shaped flock of perhaps fifty, with a background of blue sky and fleecy clouds: can one imagine a more beautiful arrangement of delicate colouring? On these occasions the roseate tint is generally most in evidence, but when the sun happens to catch the proper angle for the carmined wing- and tail-coverts the brilliant effect produced is unique.

The 6th of September is my earliest chronicled date of its appearance (with a flock of no fewer than thirty). By the end of March it has generally disappeared again, though a possible straggler may remain into the ensuing month.

By no means a wild bird, a horseman can approach or pass within a short distance, and even the human habitation is not shunned. On one occasion, at a small pond in the outskirts of the town of Ajó and not more than forty yards from a somewhat busy building, I noted as I rode past the following—one singularly beautiful adult Spoonbill, various Ibises, two species of Wild Duck, some Brazilian Stilts, and two Domestic Duck, all of which (with the exception of the Wild Duck) absolutely took no notice of me. On a hot summer's forenoon (of 1914) a single Spoonbill came over the Yngleses dwelling-house and, sweeping low down, passed over the patio and out by one of the side-entrances, an occurrence which I was led to annotate as "decidedly incongruous." Both Hudson and myself have mentioned how it can be domesticated when young. In former years I have occasionally seen it in company with Egrets, Brazilian Stilts, and Spur-winged Lapwings in the patios of "fondas" and private houses in the town of Dolores.

Fish-fry is the food I have found in the crop.

The note of the adults is a croak; that of the young a cheep.

It was not until the 30th of November, 1885, that I found the Spoonbill nesting in the heart of the great Cisñeros cañadon, in company with the White-faced Ibis (*Plegadis guarauna* Linn.). The colony was a large one, but working on foot, as described under the last-named species, and with my view circumscribed by the high rushes, it was not in my power to form an estimate of the actual number. The nests were built solely of dry junco, and consisted of a light shallow platform with a small hollow in the centre at an elevation of about eighteen inches from the surface of the water. Three and four were the general clutches of eggs; but on revisiting the colony on the 15th of December, when all the nests were hatched out, I found the broods consisted generally of two, only occasionally three, young. The following year (1886), on the 30th of October, the colony was *in situ* again, but fortuitous circumstances prevented

me from visiting the locality in subsequent years. After a long interval, on 26 November, 1895, I found such another breeding-haunt only little more than a mile from the Yngleses head-station, where the associates of the Spoonbill this time were the White Egret (*Ardea egretta* Gm.) and the Dark Night-Heron (*Nycticorax obscurus* Bp.)—see account under these species. The Spoonbills were in a majority and might be numbered at from five hundred to a thousand pairs. Their eggs were all fresh (or nearly so), whilst the other two species were hatched out. The Spoonbills' nests were very close together, sometimes hardly a yard apart; otherwise, similar in material and construction to those of the Cisñeros colony. After nesting the two following years, this colony passed out of existence.

I have taken one clutch of five eggs, but the usual number is three or four; these are of a very irregular shape, but generally elongated. The ground-colour is a dirty white, with rusty-red markings and (occasionally) some violaceous blotches. As a rule, these are evenly distributed all over the eggs, and only in some cases increase towards the larger end.

Whilst the average measurement is 65×43 mm., individual specimens may vary from 70 to 61 mm. on the long axis and 46 to 41 mm. in diameter.

[To be continued.]

XXVI.—Obituary.

JOHN CHAMBERS McLEAN.

WE learn with deep regret that Mr. J. C. McLean of Waiamu was accidentally drowned when crossing a river near his home in the Poverty Bay district of the Northern Island of New Zealand in December last. The river was in flood and he was washed off his horse by the strong current, and the mackintosh he was wearing catching in a snag under the water, he was unable to free himself though a very good swimmer.

Born in 1872, Mr. McLean was the eldest son of the late Alan McLean of Duart, Havelock North, Hawke's Bay, New Zealand, and grandson of the late John Chambers, who owned the Te Mata estate in the same district and who was a well known and highly respected pioneer. He was educated privately and at Wellington College, New Zealand, and afterwards lived for some years on his father's station, Waikohu, near Gisborne; subsequently he acquired some property of his own in the same district.

From his early youth McLean, who lived in a somewhat unsettled part of the country where there still existed a good deal of the aboriginal bush, was deeply interested in the bird-life of his native land and specially in those native species which have become so scarce since the introduction of the British birds into New Zealand. These have taken the place of the native species, which are now only to be found in the more remote and unsettled districts.

So long ago as 1889 McLean sent a note to 'The Ibis' on the breeding-place of the Spotted Shag (*Phalacrocorax punctatus*) at Cape Kidnappers near Napier. This was followed by other contributions in 1892, 1894, and 1907, dealing with the rarer bush-birds met with by him in the Gisborne and neighbouring districts. With this last contribution there was sent to the Natural History Museum a collection of skins, among which Mr. Ogilvie-Grant found a new Fan-tailed Flycatcher which he named *Pseudogerygone macleani* after the collector.

To the eleventh volume of the 'Emu' (1911-12) Mr. McLean sent a long paper of field-observations on the Bush-birds of New Zealand, and both this and the papers in 'The Ibis' were illustrated with photographs of the birds with their nests and eggs, taken by Mr. McLean, as he was very skilful with the camera.

Mr. McLean was elected a member of the Union in 1897, and his death at the comparatively early age of forty-six is a great loss to the limited band of New Zealand ornithologists.

JOSEPH WIGLESWORTH.

We regret to learn that Dr. Wiglesworth met with a fatal accident on or about May 16 last at Hurlstone Point in Somerset. He was staying at Porlock Weir, and on that morning went to Hurlstone Point to examine a Peregrine's nest on the cliffs. Nothing more was heard of him till two days later when his body was found at the foot of the cliff by a coastguard. From the marks on the body it is supposed that in climbing the cliff Dr. Wiglesworth must have missed his footing and fallen to the beach below.

Born in 1853, Wiglesworth was educated for the medical profession at Liverpool and St. Thomas's Hospital in London. He qualified in 1876 and obtained his degree of M.D. Univ. Lond. in 1880. He was a specialist in mental diseases, and was for a period President of the Psychological Association and Lecturer on Mental Diseases at the University of Liverpool. For over thirty years he held the post of Medical Superintendent of the Lancashire County Asylum at Rainhill.

A few years ago he retired and settled at Winscombe in Somerset, and since that time has been devoting himself to the study of the birds of Somersetshire with a view to preparing a work on the subject. Bird-life was his favourite study, and all his spare time was devoted to it.

His publications, in addition to many valuable professional papers and books on mental diseases, include an inaugural address on Flightless Birds, published in the Transactions of the Liverpool Biological Society in 1899, and a little work on St. Kilda and its Birds (Liverpool, 1903).

Since settling in Somersetshire he had written two studies on the birds of that county—one on the status of the Little Owl, the other on Somerset Heronries, both published in the Proceedings of the Somersetshire Archæological and Natural History Society and both noticed in our pages, the last on p. 553 of the present number.

Dr. Wiglesworth was elected a member of the Union in 1898, and his death is a great loss to Somersetshire ornithology.

XXVII.—*Notices of recent Ornithological Publications.**Mrs. Bailey on the Birds of the Glacier National Park.*

[Wild Animals of Glacier National Park. The Mammals by Vernon Bailey. The Birds by Florence Merriam Bailey. Pp. 1-210, 36 plates, 94 text-figs., and map. Washington (Dept. of Interior, Govt. Printing Office), 1918. 8vo.]

Mr. and Mrs. Vernon Bailey of the United States Biological Survey have collaborated to produce their useful and pleasant account of the Mammals and Birds of Glacier National Park. This lies in north-western Montana along the main range of the Rocky Mountains from the Canadian boundary-line south to the Great Northern Transcontinental Railway. Although the highest peaks of this portion of the range are little above 10,000 feet, the country is exceedingly rugged and rough and the low elevation of the timber-line gives it the appearance of a more lofty range.

In order to gather material for this report Mrs. Bailey spent the two months of July and August 1917 in the Park, and a good general idea of the breeding birds of the region was obtained; with this is incorporated additional material derived from the notes of Mr. G. B. Grinnell, Mr. A. H. Higginson, and other visitors to this romantic region. Over 170 species are enumerated, with notes on their rarity or otherwise, their migrations, and other observations and field-notes; these are accompanied by a number of figures and plates, many derived from Mrs. Bailey's well-known 'Handbook of the Birds of Western North America'; others from photographs by Messrs. Vernon Bailey, E. R. Warren, R. B. Rockwell, and drawings by Major Allan Brooks and Mr. Fuertes.

Brasil on New Caledonian Birds.

[Notes sur la Faune ornithologique de l'Océanie, par M. L. Brasil. Bull. Mus. d'Hist. nat. Paris for 1917, no. 7, pp. 1-13.]

This, the last work of our lamented Corresponding Member M. Brasil, has reached us through the kindness of his widow, and contains three notes on Pacific ornithology. The first

of these deals with the identification of a New Caledonian bird, named by Verreaux and Des Murs *Egretta breviceps* in 1862. M. Brasil has traced what he believes must have been the type in the Museum at Paris, and this bird is undoubtedly *Demiegretta sacra* in the white phase, or following the views of Mr. G. M. Mathews and regarding it as a distinct form in consequence of its larger dimensions, it must stand as *Demiegretta greyi breviceps*.

The second note deals with the Pacific Petrel, *Pterodroma rostrata* Peale, the type of which was obtained at Tahiti by the Wilkes Expedition in 1838-42. M. Brasil gives reasons for regarding the form found in the western Pacific, especially in New Caledonia, as subspecifically distinct chiefly on account of its larger size, and he proposes to name it *Pterodroma rostrata trouessarti*.

A third note contains a description of two proposed new subspecies of Rails from New Caledonia, *Poliolimnas cinereus ingrami* and *Porzana tabuensis caledonica*. Text-figures of the heads of the Petrels and the *Poliolimnas* assist materially to show the distinctions of the newly described forms.

Chubb on the Dendrocolaptidæ.

[Notes on the Family Dendrocolaptidæ, with suggestions for its division. By Charles Chubb. Ann. Mag. Nat. Hist. (9) iii. 1919, pp. 273-275.]

Mr. Chubb proposes to divide the large South American family of Wood-Hewers, Dendrocolaptidæ, into four, namely :—

Furnariidæ to include the ground-living birds.

Synallaxidæ for the soft-tailed bush-haunting birds.

Xenopidæ for the genera *Xenops* and *Pygarrhicus*, intermediate between the last-named and the next following.

Dendrocolaptidæ for the spine-tailed, tree-climbing birds.

The genera of each family are enumerated, and attention should be drawn to the point that these divisions and limits do not correspond with those of Ridgway.

Dixon on the Spoon-billed Sandpiper.

[The nesting-grounds and nesting-habits of the Spoon-billed Sandpiper. By Joseph Dixon. Auk, xxxv. 1918, pp. 387-404, pl. v. and 3 text-figures.]

The Spoon-billed Sandpiper (*Eurynorhynchus pygmaeus*) is, so far as its breeding-grounds and nesting-habits are concerned, one of the rarest of the Waders. It is distinguished from all its congeners by the peculiar widening of the tip of the mandible, from which it derives its name and for which no one has suggested a satisfactory explanation. Until 1910 only one example of this Sandpiper, taken in its breeding-grounds, was known. This was one still preserved in the Oxford Museum, taken by Captain Moore of the 'Plover,' which, with H.M.S. 'Herald,' were two ships sent out in 1848 to search for Sir John Franklin. The 'Plover' wintered in Providence Bay, north-eastern Siberia, and did not get free until the end of June 1849, when she proceeded to Kotzebue Sound in Alaska, and although Captain Moore's single specimen has, in most of the works mentioning it, been recorded as having been obtained in Alaska, it was almost certainly collected on the Siberian side of Behring Straits. The only certain record for Alaska is that of Mr. F. Granville of Los Angeles, California, who in August 1914 took two specimens at Wainwright Inlet on the Arctic coast of Alaska; but several collectors, including Mr. Dixon, have obtained nests, eggs, and downy young at various points on the north-eastern coast of Siberia during the last few years.

Mr. Dixon, after detailing the history of the discovery of the bird, relates his own experiences and observations. He found a nest on 22 June, 1913, at Providence Bay with two fresh eggs, and about a month later another one at Cape Serdze a little farther north, with three downy young just out of the nest. The nests were on the open tundra and merely consisted of a cavity scratched out among dead grass-blades. In both cases the nests were discovered by flushing the brooding male, which appears to undertake the greater part of the household duties as in the case of the

Phalaropes. Other details are given and the nuptial flight is illustrated by a diagram, while an outline map shows the approximate position of the various breeding-places hitherto recorded, and a photograph of the breeding-grounds and of the nest with the two eggs *in situ* completes Mr. Dixon's contribution to our knowledge of this rare and little-known species.

Grinnell, Bryant, and Storer on Californian Game Birds.

[The Game Birds of California. By Joseph Grinnell, Harold Child Bryant, and Tracy Irwin Storer. Berkeley (Univ. Cal. Press), 1918 Pp. 1-632, 16 col. pls., many text-figures.]

Under this title Messrs. Grinnell, Bryant, and Storer include the ducks, geese, swans, spoonbills, ibises, cranes, rails, moorhen, coot, waders, quail, grouse, pheasants, pigeons, and doves. In the preface Mr. Grinnell, Director of the Californian Museum of Vertebrate Zoology, states the main object of the book, which is an attempt to arrest the rapid depletion of the game-birds of California by educating the public, so that they may realize how important it is to preserve the game-birds and how necessary to adhere to the already stringent game laws. The book was commenced in 1913 by Mr. Grinnell and Dr. Bryant, but when the latter was appointed elsewhere in August 1914, Mr. Tracy Irwin Storer took his place, and in collaboration with the Director worked at the book till its completion in 1916. Mr. Grinnell, in concluding the preface, remarks that "the highest plane of scientific output can be accomplished only through coöperative effort," with which we entirely agree.

In the preparation of the book, the authors have endeavoured to meet the requirements of the hunter, naturalist, legislator, and conservationist. With these ends in view, chapters are devoted to the decrease of game, natural enemies of game, propagation of and legislation concerning game-birds in California. The decrease of game-birds, which has been observed for the last thirty-five years, appears to be most pronounced among the ducks

and geese. Estimates received from various sources give an average of a 50 per cent. decrease in the case of the ducks, while in the geese the estimates are higher and average a 75 per cent. decrease. Quail, Mourning-Dove, Californian Clapper Rails, and Long-billed Curlew are among those species whose numbers have been seriously reduced, while the Columbian Sharp-tailed Grouse is now apparently extinct in California. The decrease of the game-birds is attributed to a combination of causes, but primarily to the sale of game in the open market, which is now prohibited except in the case of the geese and ducks, and the authors are anxious that these also should be included in this legislation.

A glossary of special terms used in the book, followed by a dichotomous key (for identification of Californian game-birds only), precedes the general account of the various species which occupies the greater part of the book. A chapter is devoted to each species and in every case is preceded by small-type paragraphs with the following headings:—"description" (namely plumage of the species, soft parts, measurements), "marks for field identification," "voice," "nest," "eggs," "general distribution," and "distribution in California." Descriptions are given of the adult male and female. In the Waders, where many species have a distinct summer-dress, descriptions of both summer and winter plumage are included; the juvenile plumage is dealt with as briefly as possible, and is followed where material is available by a description of the natal plumage. The colours of the soft parts are described with the plumage, which we think a pity as it entails reading some of the description before ascertaining colour of eyes and bill. We should also have liked more information about the eclipse plumage in the ducks, which in some species, *e.g.* American Wigeon, is not referred to at all, and in some others is disposed of by saying it resembles the plumage of the female, no points of distinction being given.

In some instances, what is described as the juvenile plumage of certain ducks undoubtedly refers to the first

winter plumage: *e.g.*, the juvenile plumage of the Red-breasted Merganser is described (page 84) as "similar to that of adult female but with a tuft of black and white marked plumes in evidence on side near bend of wing," a character which we find is only developed after the post-juvenile moult. In the Harlequin also, the description of the juvenile male undoubtedly refers to the first winter male; while in the American Golden-eye the juvenile male is described with the white spot before the eye more or less indicated, a character which in the European Golden-eye (from which the American Golden-eye differs only in size) we have only observed in first-winter birds. Another criticism we have to make is that in describing the winter plumage of the waders the differences which exist in some species between adults and first-winter or immature birds are in some cases overlooked.

The general account in large type which follows contains information on migration, habits, food, etc., and the distinguishing characters of the species, nests, eggs, etc., are dealt with in greater detail than is possible in the small-type paragraphs which are primarily for reference.

There are sixteen coloured plates, twelve by Mr. Louis Agassiz Fuertes and four by Major Allan Brooks, and many useful text-figures.

Direct quotations are interpolated in the text with the object of assuring greater accuracy, and a list of literature cited is appended.

We congratulate the authors on the amount of information they have collected, and we sincerely hope the book will impress upon the public the need, both from the economic and sentimental point of view, of preserving the game-birds of California.

Gurney on Norfolk Ornithology.

[Ornithological Notes from Norfolk for 1918. Twenty-fifth Annual Report by J. H. Gurney. *British Birds*, xii. 1919, pp. 242-257.]

Owing to the loss of observers and military restrictions on the coast, Mr. Gurney's most useful summary of bird-

events in Norfolk has suffered somewhat. The county is to be congratulated on having recovered the Bittern, the Cormorant, and the Curlew as breeding-birds, though there are still a good many which nested regularly a hundred years ago which have never returned as breeding-birds; such are the Kite, Bustard, Avocet, and Black Tern.

In addition to the satisfactory increase of the Bittern, the Great Crested Grebe, Shoveler, Gadwall, and Bearded Tit are all becoming more numerous—in all cases the result of protection.

Among the rare birds noted in 1918 were the Caspian Tern, the Avocet, the Yellow-browed Warbler, and Richard's Pipit. Spoonbills still come each year in small numbers to Breydon Broad, chiefly in May and June, and would probably nest there if allowed a chance of doing so.

Mr. Gurney in his notes gives the Bullfinch a bad name as most destructive to the buds and blossom of fruit-trees, especially of the Black Currant, which are grown in large quantities as a field-crop in parts of Norfolk.

R. Gurney on Nomenclature.

[Modern Zoological Nomenclature. By Robert Gurney. Trans. Norfolk and Norwich Nat. Soc. x. 1919, pp. 335–352.]

In this thoughtful and well-balanced little essay Mr. Robert Gurney criticizes somewhat severely our modern methods of nomenclature, taking as his text the divergences in practice between Witherby's 'Handlist of British Birds' and the B. O. U. List; but after all, when his examination is complete, he finds that most of the differences are due to differences of opinion on points not affected by the rules, but which must always remain a matter of individual opinion—such, for instance, as to whether a particular form shall be regarded as a subspecies or a full species, or again as to the identification of an ancient description.

Perhaps the best instance of the latter is the question of the correct name for the Garden-Warbler. The Handlist uses *S. borin*, undoubtedly the older name, but according to the B. O. U. Committee, Daubenton's figure and description

cannot be identified with the Garden-Warbler and so they propose to use the later name, *Sylvia simplex*. No rules can be devised to settle a question of this sort.

Mr. Gurney discusses the well-known case of the transference of the name *Turdus musicus* from the Song-Thrush to the Redwing, and here we do feel that the field-naturalist and others interested in more general aspects of zoology have a genuine grievance. As has been recently pointed out by Prof. Lönnberg in 'The Ibis,' the name *Turdus musicus* Linn. occurring in literature, unless in some way further qualified, must always be of doubtful meaning, and we are inclined to adopt Prof. Lönnberg's suggested solution (Ibis, 1919, p. 367) and give up the name *Turdus musicus* Linn. altogether as indeterminable.

But although Mr. Gurney brings very heavy artillery to bear on the Rules adopted by the International Zoological Congress and shows up many of their shortcomings and imperfections, when it comes to suggesting a remedy he does not do much to help us. Of the amendments to the code which he proposes, the first is merely an amiable and pious wish; the second is very frequently adopted in the banning of the earliest name if any doubt exists as to its identification; the third, as regards the interchange of names between two genera or species, we have every sympathy with but we regard it as very difficult of application in many cases; the fourth proposed amendment in regard to larval forms does not affect names in ornithology.

Kuroda on a new Parus.

Description of a new subspecies of *Parus varius* from Niijima, one of the Seven Islands of Idzu, by Nagamichi Kuroda. Dobutsugaku Zasshi (= Tokio Zool. Mag.), xxx. 1918, pp. 322-3.]

Mr. Kuroda sends us a short paper containing in Japanese what is apparently a list of birds from Niijima or Niishima, one of a small group of islands off the coast of Japan near Tokio. Among the birds was one which he regards as a distinct form, and describes in English under the name of *Parus varius namiyei* after the original collector.

Lönnberg on Hybrid Gulls.

[Hybrid Gulls. By Einar Lönnberg. Ark. Zool. Stockholm, xii. no. 7, 1919, pp. 1-22, 3 pls., 2 text-figs.]

Examples of hybrid gulls appear to be uncommon or, at any rate, have seldom been commented on, and the instances quoted by Dr. Lönnberg show that there is less fundamental difference between the black-mantled and the grey-mantled gulls than is generally thought to be the case.

The first group of hybrids described were the offspring of a male *Larus fuscus* which mated with a female *L. leucopterus* in the Zoological Gardens at Stockholm in 1912 and 1913; the hybrids are figured in their first, second, and third years, the last being practically adult. In this bird the mantle is darker than that of the female parent, but much paler than that of the male; while the feet retain the pinkish colour of the mother. The bearing of these facts is discussed by Dr. Lönnberg at some length, and he regards the coloration of the hybrids as a reversion to that of the ancestral forms.

Another series of hybrids between *Larus marinus* and *Larus glaucus*, bred in the Zoological Gardens at Copenhagen, are also described; these agree in general coloration and wing-pattern with a gull now in the Copenhagen Museum, obtained in Greenland and labelled by Dr. Winge, "*Larus marinus* \times *glaucus* (= *L. nelsoni*)."

Menegaux on Bird-Protection.

[L'Ami des Oiseaux. Petit manuel de protection, par A. Menegaux. Pp. 1-35. Paris.]

From M. Menegaux we have received this little pamphlet on the protection of birds useful to agriculture. After a short introduction, the various methods for encouraging and stimulating the increase of bird-life such as nesting-boxes, feeding-trays, and special plantations, are enumerated. This is followed by a list of terms employed in descriptions

and measurements, and finally the reasons why it is so necessary to protect both resident and migratory forms.

The protection of birds in France is carried out under a convention agreed to by most of the European States, but excluding Great Britain, Russia, Italy, and the Netherlands, in March 1902. This convention was ratified by the French government in 1905, and has the force of law. It is printed in full in the present pamphlet, and is followed by a list of useful birds which are strictly protected and by a second one of harmful or destructive birds which are not protected.

Palmer on the A. O. U.

[The American Ornithologists' Union. By T. S. Palmer. Amer. Museum Journ. New York, xviii. 1918, pp. 473-483.]

In order to make the American Ornithologists' Union better known among those who are not familiar with it, the Secretary, Mr. Palmer, has written this little sketch of its foundation, present condition, and future aims and objects—what it has done and what it proposes to do. An interesting historical group of portraits of the founders and officers in 1883 including Baird, Elliot, Lawrence, and Coues, and many others, some of whom are still with us, brings back pleasant memories of past friends.

Porsild on "Savssats."

[On "Savssats": a crowding of Arctic Animals at Holes in the sea-ice. By Morten P. Porsild. Geogr. Review, New York, vi. 1918, pp. 215-228.]

Savssat (pronounced s'set) is an Eskimo term meaning crowding or overcrowding, and is used by the natives of Disco Bay in Greenland to denote a phenomenon which occurs occasionally: the ice from Baffin Bay gradually closes in and meets the ice at the head of Disco Bay, and large numbers of whales and other animals become enclosed in narrow pools of open water. Finally the animals become entirely frozen in, and the Eskimos reap a rich harvest.

Birds are sometimes surprised in this way. Mr. Porsild states that Eider Ducks are often seen crowded by hundreds into very small openings, and they appear to be always able to make their escape; but the Guillemots and Little Auks are not so fortunate. If a Guillemot Savassat occurs near the shore the birds are all captured by the Eskimo; if the hole be far from any settlement the whole flock gradually perishes by the freezing up of the water. The matter is an interesting one, and the account given by Mr. Porsild is well worth the attention of ornithologists.

Robinson and Kloss on Sumatran Birds.

[Results of an Expedition to Korinchi Peak, Sumatra. Part ii. Birds, by H. C. Robinson and C. Boden Kloss. Journ. Fed. Malay States Museums, viii. 1918, pp. 81-284, pls. iv.-vii.]

This is a very important paper and will have to be consulted by all students of the avifauna of the Indian Region. It contains the results of an expedition undertaken by the authors in 1914 to the high mountain peak of Korinchi in the western end of Sumatra.

Large collections of all the orders of Vertebrata were made, and the results will fill the eighth volume of the Journal of the Federated Malay States Museums. But little is told us in the present fascicule about the actual journey or about the physical aspects of the mountains, which rise to about an elevation of 12,000 feet; but a careful comparison is given between the mountain-avifauna of Korinchi, of Kinabalu in Borneo, and that of the mountains of the Malay Peninsula and Java, the general conclusion being that the relations between the Javan and Sumatran peaks is much closer than to those of Borneo, while in addition to the Javan element there is a small proportion of species of recent continental origin found in the Himalaya and mountains of Tenasserim and the Malay Peninsula which have not spread to Borneo and Java. The greater part of the paper is taken up with the list of species, 186 in number, obtained by the expedition. These are thoroughly discussed with references to Sumatran literature, field and taxonomic

notes. A number of the more striking new forms discovered were described in the Journal of the Straits Branch of the Royal Asiatic Society in 1916, but a certain number of additional forms from Sumatra and elsewhere are here noticed for the first time, viz. :—*Turdinulus epilepidota dilutus*, *Notodela diana sumatrana*, *Parus major malayorum*, *Zosterops difficilis*, all from Sumatra ; and *Pnoepyga pusilla harterti*, *Tephrodornis pelvica annectens*, *Bhringa remifer attenuata*, from the Malay Peninsula.

Four coloured plates by Grönvold illustrate the more interesting forms obtained, including the female of the handsome Pheasant, *Acomus inornatus* Salvad., which had not previously been obtained or described ; *Gecinus dedemi* van Oort, only known up till now from the type-specimen obtained by Baron van Dedem in the Battak mountains of north-eastern Sumatra ; *Cochoa beccarii*, only known from the types obtained by Beccari on Mt. Singgalang thirty-five years ago ; the handsome Ground-Thrush, *Pitta schneideri* Hartert, the female of which was previously unknown ; *Dicaeum beccarii*, *Cryptolopha sumatrensis*, and *C. muelleri*, first obtained and described by the authors themselves in 1916 ; and *Cettia sumatrana*, also obtained by the authors of this paper, but first described by Mr. Ogilvie-Grant.

Following the list of species is a table showing the distribution and altitude of the birds collected according to station, a list of nests and eggs, and finally a carefully compiled and valuable list of all the birds certainly known to occur in Sumatra. These number 526 as compared with Borneo's 535 and the Malay Peninsula's 630.

Swarth on new forms of Fox-Sparrow.

[Three new subspecies of *Passerella iliaca*. By H. S. Swarth. Proc. Biol. Soc. Washington, vol. 31, 1918, pp. 161-164.]

This paper contains the preliminary description of three new subspecies—*Passerella iliaca mariposae*, *P. i. julva*, and *P. i. canescens*—from different localities in California, and is to be followed by a thorough revision of the whole group.

Van Oort on the Birds of Holland.

[Ornithologica Neerlandica. De Vogels van Nederland, door Dr. E. D. van Oort. Pts. 3 & 4, pp. 57-120, pls. 21-40. 's Gravenhage (Nijhoff), 1918. 4to. Price 12½ Gld. each part.]

The second instalment of Dr. van Oort's great work on his native birds carries us through the Cormorants, Herons, Storks, and Ibises to the Swans. Holland is fortunate in retaining four of the birds here described as regular breeders—the Little Bittern, the Bittern, the White Stork, and the Spoonbill—all of which, except perhaps the Bittern, which seems to be re-establishing itself, formerly bred in the British Islands but have now left us.

In the series of plates, not only are the adult males and females but in many cases the young birds also are represented. The most successful to our taste are the Heron, Bittern, Stork, and Flamingo. In the more darkly-coloured birds the reproduction does not appear to us to be quite so successful, and the screens used in the photographic processes seem to be rather too coarse. On the whole, we see a decided improvement in the illustrations as compared with those of the first two parts.

White on Ornithological Trips in Australia.

[Ooldea, on the East-West Railway. On the flooded Murray River, and other sketches. By Captain S. A. White. Pp. 1-88; many photos. Adelaide [1918]. 8vo.]

In this little booklet Captain White recounts his adventures during three trips made by him along the great trunk railway recently completed between Adelaide and Perth, the respective capitals of South and West Australia. The first one, performed in January 1917, was to the end of the completed track just short of Ooldea, while the last one in the following December was made after the line was completed. Bird-life was very scarce owing to the dry condition of the country, but efforts were made to investigate the advance of the English Sparrow, which though a pest in South Australia is unknown in Western Australia,

and which it was feared would spread there along the newly constructed line. Captain White, however, could not detect any Sparrows about Ooldea itself. An interesting observation was the finding of many nests of the Barn-Owl (*Tyto alba delicatula*) in the wells and natural blowholes round Ooldea.

Another portion of the volume contains some sketches of the country along the flooded River Murray and the birds met with there.

Wiglesworth on Somerset Heronries.

[The Heronries of Somerset. By J. Wiglesworth, M.D. Proc. Somerset Arch. and Nat. Hist. Soc. liv. 1918, pp. 68-85.]

The earliest reference to a Somerset Heronry is found in the Survey Roll of Glastonbury Abbey, which was probably drawn up about 1540 and in which the birds were said to have nested in the "Mannour of Mere"; but they have long since vanished from there, and have left no traces beyond what is mentioned in the Roll.

At the present time the number of occupied heronries within the county are four only, while two others have been deserted within recent years. These are located respectively at: Brockley Park near Bristol; Pixton, Dulverton; Halswell Park near Bridgwater; and Somerton Erleigh near Somerton. The largest is the last-named, and Dr. Wiglesworth, who visited it in March last year, estimates the number of nests at about eighty.

After visiting all the sites, Dr. Wiglesworth believes that the Heron is diminishing as a breeding-bird in the county, and he puts the decrease down to the ban of the angler, since these birds undoubtedly do feed largely on fish and at times may do considerable harm to fisheries, though the damage is generally exaggerated. It is also probable that the destruction of their breeding-grounds by the recent felling of timber due to the exigencies of the war has had an inimical effect on their numbers. It would be indeed a lamentable thing if the Heron should become extinct in the British Islands, but we hope there is no immediate danger of this happening.

The Bombay Journal.

[The Journal of the Bombay Natural History Society, xv. nos. 1-5. March 1917-Dec. 1918.]

The last completed volume of the Journal of the Bombay Natural History Society is a stout tome of over 700 pages and contains much that is of interest to ornithologists as well as to students of other branches of Natural History. From Mr. Stuart Baker we have in each number a part of his valuable account of the Game-Birds of India, twenty-four of which have now been published. Each is illustrated with a coloured plate, those of the present volume representing *Gallus sonnerati*, *Gennæus albocristatus*, *Phasianus himia*, and *Pucrasia macrolopha*. A very careful revision of the species and subspecies, with full descriptions and carefully selected field-notes of other authors as well as the results of his own observations, constitute a most complete history of these magnificent birds, and we hope when the series of articles are completed that we shall see them in book-form.

The country lying between Manipur and the southern Chin hills in Upper Burma is still but little known ornithologically. It consists of steep heavily-wooded hills rising to about 7000 feet, and is very difficult of access. Messrs. J. C. Hopwood and J. M. D. Mackenzie, both of the Indian Forest Service, have made several excursions into the region, and contribute a list of the birds and the eggs obtained with many notes of considerable interest.

A useful article is one by Mr. C. H. Donald on the Raptores of the Punjab, in which he endeavours to provide keys for the easy identification of these difficult birds, not only when killed but also when seen on the wing. No fewer than fifty-five species are mentioned in the list as occurring in the Province. Another article dealing with the Punjab avifauna is from the pen of Mr. H. Whistler, who contributes some notes on the birds of the Ambala or Umballah district.

From Mesopotamia we have a few notes on the Game-Birds from Capt. C. M. Thornhill; and there are a large

number of shorter notes of less importance, the most interesting being from Mrs. Hall on the nesting-habits of the Hornbill *Lophoceros birostris*, the facts regarding which appear to be still far from accurately known. Mrs. Hall notes that after the eggs had been hatched the female bird left her prison and assisted the male to feed the young birds, which were again imprisoned by plastering up the entrance to the nest. Mrs. Hall states that the female on emerging from the nest-hole was by no means in bad condition and bedraggled, but in beautiful plumage. The young birds were fed on a varied diet of insects, possibly mice and lizards, as well as various vegetable substances. The whole account is most interesting.

Journal of the Museum of Comparative Oology.

[The Journal of the Museum of Comparative Oology. Vol. i. nos. 1-2. Santa Barbara, Cal., U.S.A. March 1919.]

We must very heartily congratulate our brother ornithologists of Santa Barbara, California, on their enterprise in starting a Museum, with its attendant journal, on Oology, a science which has been grievously neglected, though collectors of eggs are so numerous. In the foreword the Editors of the Journal write:—"The Museum . . . has set itself the task of accumulating the phylogenetic evidence offered by the eggs of the birds of the world." Truly an ambitious programme, but the enterprise is backed abundantly both by brains and financial means and surely deserves success. Criticism at the present stage of the scheme is hardly fair or necessary and, if the rules laid down are adhered to, may never be required; but in view of what is said on page 15 as to the policy in acquiring material, we might suggest that deductions may be more important and more reliable if drawn from the normal rather than from the abnormal. "We are after the significant only." So the paragraph referred to runs; but it must be remembered that a series of the normal egg may signify far more than a clutch of aberrant eggs. Ill-health, over-production,

and a hundred and one other causes may govern the production of one aberrant egg or of one clutch of such eggs, but the causes of normal coloration, shape and texture are far deeper and far more worth while investigation.

The present double number deals practically with the collection and exhibition of eggs, but in future numbers we shall look forward to seeing the "why and the wherefore" of various oological points dealt with and explained.

We wish the Museum and Journal the greatest success, and recommend the latter to all oologists for careful study.

Tori.

[*Tori* (*i. e.* Birds). The Journal of the Ornithological Society of Japan. Vol. i. nos. 1-5; vol. ii. nos. 6-7.]

To the courtesy of Mr. N. Kuroda, F.M.B.O.U., we are indebted for a complete set of the Japanese journal of ornithology, which we are very glad to see, though we fear we are unable to read the contents. Each number contains about 30 pages of text in Japanese and a good many half-tone illustrations from photographs and generally a coloured plate, and the whole is executed in a most artistic manner.

The first number contains a picturesque coloured figure of the Pheasant-tailed Jacana, which however, so far as we are aware, is not found in Japan. The second number has a paper on the birds of the Pelew, Marianne, and Caroline groups of the western Pacific, recently taken over by Japan from the Germans. There are descriptions of two new subspecies by Mr. Kuroda—*Collocalia fuciphaga rukensis* and *Halcyon chloris vanikorensis*, which are figured in colour. The descriptions of the new forms are also translated into English, and the list is partly in English. Another number has a description of a new Woodpecker, *Dryobates leucotos quelpartensis*, from Quelpart Island in Korea Straits, by Mr. Kuroda and Mr. T. Mori, also translated. Another paper contains the account of the interesting Shelduck, *Pseudotadorna cristata*, which has already been noticed in our pages (*Ibis*, 1918, p. 732).

It would make the journal of much greater use and give it much more importance if those responsible for editing it could be persuaded at least to publish a translation of the list of the contents of each number.

Mr. Kuroda has already shown the way by printing his descriptions of new forms in English as well as Japanese, and we hope other authors will be induced to do the same.

May we conclude by wishing our new contemporary "Tori" a long life and a prosperous career!

Trans. Norfolk Nat. Society.

[Transactions of the Norfolk and Norwich Naturalists' Society. Vol. x. pt. 4, 1917-18; February 1919.]

The Norfolk and Norwich Naturalists' Society will celebrate its Jubilee this year under the presidency of our old friend Mr. J. H. Gurney, and we must congratulate the members of what must certainly be one of the oldest provincial societies on their flourishing condition and on the excellence of their journal.

The most important ornithological paper in the present number is undoubtedly one by Miss Turner on the breeding of the Bittern in Norfolk. For many years, in fact since about 1868, the Bittern has been extinct in Norfolk and the British Islands as a breeding-bird, though a few have been noticed every winter in the "Broads" district.

Since 1911, though no nest was actually found until 1917, there is no doubt that the Bittern has recommenced breeding in the "Broads" district, and there seems to be every chance of its complete re-establishment. Miss Turner's paper is full of the details of the nesting-habits and early life-history of these extraordinarily interesting birds, and is illustrated by six plates reproduced from her photographs. It should be read by all. The booming of the Bittern, which has been mentioned by so many writers and poets apart from ornithologists, can now again be heard, and a most remarkable sound it is—something to our hearing between a fog-horn and a donkey's bray.

In a shorter article Mr. B. B. Rivere deals with the habits

and plumage-changes of the Red-backed Shrike as observed on two nestlings taken from the nest and hand-reared. A coloured figure of the juvenile plumage, reproduced from a sketch by the author, illustrates this note.

Mr. A. H. Patterson contributes some observations at or near Yarmouth for the year 1917, but military reasons have much restricted his rambles. A paper by Mr. Robert Gurney on nomenclature is noticed separately.

Yearbook of the Dutch Bird Club.

[Club van Nederlandsche Vogelkundigen. Jaarbericht, no. 8. Deventer, 1918.]

As in the past this Yearbook is edited by Baron Snouckaert van Schauburg, the President of the Club, who himself contributes several articles. The first of these consists of his annual report on events of ornithological importance from October 1917 to September 1918. He mentions the occurrence of a good number of Slender-billed Nuthatches in October and an unusual number of Woodcock during the winter, while the breeding of Red-necked Grebe is confirmed. Special rarities recorded are the Lesser Grey Shrike, the eastern European Buzzard *Buteo buteo ruficaudus* (= *B. b. zimmermannæ*), and the Iceland Gull. In other shorter articles Baron Snouckaert discusses the races of the Cordon Bleu (*Uraginthus bengalus*), the exact significance of the variation of *Perdix perdix* named *Tetrao damascenus* by Gmelin, and other matters.

Another contribution, signed A. H., deals with the succession of birds noticed in the rice-fields of Java and Sumatra during the different seasons and periods of cultivation; while Baron van Heeckeren describes and figures the curious egg of the Klecho Swift, *Macropteryx longipennis*, lying in a hollow of the branch of a Soerian-tree (*Cedrella*).

Reproductions of photographs of a Snipe on its nest, a Jackdaw's nest, and eggs of the Kentish Plover at the Hook of Holland help to enliven a very good number of this Yearbook.

List of other Ornithological Publications received.

- HAVILAND, MAUD D., and PITT, FRANCES. The Selection of *Helix nemoralis* by the Song-Thrush (*Turdus musicus*). (Ann. Mag. N. II. (9) iii. 1919, p. 525.)
- RILEY, J. H. Six new birds from Celebes and Java. (Proc. Biol. Soc. Washington, vol. 32, 1919, p. 93.)
- STONE, W. Birds of the Panama Canal Zone, with special reference to a collection made by Mr. Lindsey L. Jewel. (Proc. Acad. Philad. 1918, p. 239.)
- WARREN, E. R. Bird notes of a stormy May in Colorado Springs. (Condor, xxi. 1919, p. 62.)
- WITHERBY, H. F. (edited by). A practical Handbook of British Birds. Pts. 2 and 3.
- Archivum Melitense. (Vol. iii. no. 7, 1918.)
- Auk. (Vol. xxxv. no. 2, 1919.)
- Avicultural Magazine. (Third Series, Vol. x. nos. 6-8, 1919.)
- Bird-Lore. (Vol. xxi. no. 2, 1919.)
- Bird Notes. (Third Series, Vol. ii. nos. 3-4, 1919.)
- British Birds. (Vol. xii. nos. 11-12; vol. xiii. no. 1, 1919.)
- Condor. (Vol. xxi. no. 2, 1919.)
- Emu. (Vol. xviii. nos. 3-4, 1919.)
- Fauna och Flora. (Vol. xiv. nos. 1-3, 1919.)
- Le Gerfaut. (1919, fasc. 1.)
- El Hornero. (Vol. i. no. 3, 1918.)
- Irish Naturalist. (Vol. xxviii. nos. 3-6, 1919.)
- Journal Bombay Nat. Hist. Soc. (Vol. xxvi. no. 1, 1918.)
- Journ. Nat. Hist. Soc. Siam. (Vol. iii. no. 2, 1919.)
- Rev. Française d'Ornithologie. (Nos. 119-120, 1919.)
- Scottish Naturalist. (Nos. 87-90, 1919.)
- South Australian Ornithologist. (Vol. iv. no. 1.)
- Der Waldrapp. (Vol. i. no. 1, 1919.)

XXVIII.—*Letters, Extracts, and Notes.*

South African Hawks.

SIR,—In an article I have recently sent you for publication on the South African Accipitres I have questioned whether the European Peregrine could be included in the South African Avifauna; but I at the same time drew attention to the fact that the late Mr. J. H. Gurney had recorded this species, from time to time, from South Africa.

With a view to finding out whether any of these specimens were really *F. peregrinus*, I wrote to Mr. J. H. Gurney (jun.) asking him to kindly examine the series in the Norwich Museum and let me know the result. This he has very kindly done, and I quote the following from a letter from him which I have just received:—"The Norwich Museum contains two Peregrine Falcons from South Africa. No. 1, marked 'Cap de Bonne Esperance,' is certainly a true Peregrine, an *old* skin from Jules Verreaux, but Verreaux's localities are not to be relied on. The other (No. 13), a fine adult female, marked 'Natal, W. Gueinzus'—bought at a sale at Stevens's—is also a Peregrine, I feel sure. It is altogether too big for *Falco minor*, the wing from carpal joint being 14 inches and the tarsus 1.9. It is a heavily spotted bird, the upper chest (which is usually white in British specimens) being also marked with dark pear-shaped spots . . . almost up to the chin." It is no doubt the specimen mentioned on p. 56 of Layard and Sharpe's 'Birds of South Africa,' see also p. 800.

Now if the two above-mentioned specimens are really South African killed, it will be necessary to include this species in the South African list after all, although I still have doubts as to whether the Peregrine really does occur.

In connection with my recently published paper on *Hieraaëtus ayresi* (Ibis, April 1919), I have just received a letter from Mr. W. L. Sclater which contains the following interesting remarks on the subject:—"I have just been looking through our specimens in the Museum, and I quite agree with your views on the matter. I am going to Norwich next month and shall have a careful look at the type (of *Spizaëtus ayresi*) there, and perhaps, if I think necessary, get it to London for comparison.

"We have in the British Museum only one adult *H. ayresi* (from Belgian Congo), but several juv. of the specimens noticed at p. 176 of your paper.

"Sowerby's *Aquila wahlbergi* is not *Hieraaëtus spilogaster* or *H. ayresi*. So far as I can see it is rightly identified.

"The Cameroon specimen (Sharpe, Ibis, 1904, p. 102) is a *Spizaetus*, and I believe now it is nothing to do with *H. spilogaster* or *H. ayresi*" *.

With reference to the above-mentioned specimen collected by Sowerby and described by Sharpe (Ibis, 1898), I can only repeat what I have already said on the subject of *Aquila wahlbergi*, that this species, normally, either in adult or juvenile plumage, never has any white in its plumage, and I have examined a number in all stages and have seen an equal number of living birds, both in captivity and free. Therefore I contend that this specimen, if rightly referred to *A. wahlbergi*, must be an abnormal and probably albinistic specimen.

I am, Sir,

Yours truly,

Roberts Heights,
Pretoria.

6 May, 1919.

C. G. FINCH-DAVIES, Lt.

(1st S.A.M.R.).

The Godman-Salvin Memorials.

In accordance with the resolution, proposed by Mr. Stuart Baker and unanimously agreed to at the Annual General Meeting of the Union held in March last, that a Medal should be founded to be given from time to time for distinguished work in Ornithology in memory of Messrs. Godman and Salvin, a circular has been sent round to all members of the Union asking for subscriptions to carry out this matter.

Up to the 16th of June answers have been received from 86 members of the Union, and the total subscriptions promised or received amount to £131 16s. 3d. The Secretary of the Union, Mr. E. C. Stuart Baker (Chief Police Office, West India Docks, London, E. 14), will be glad to receive any further amounts from members.

* It is referable to *Spizaetus africanus* (Cassin), see Bull. B. O. C. xxxix. 1919, pp. 87 and 93. [Ed.]

The Committee appointed to arrange for the designing and cutting of the Medal will shortly meet and settle this question, and will issue a report which will be published in the next number of 'The Ibis,' with a complete list of the subscribers.

With regard to the proposed memorial in the Natural History Museum with which, it may be recalled, it was the unanimous wish of the Members that the Union should be associated, a Committee has been formed with representatives of the Zoological, Linnean, Royal Geographical, British Ornithologists' Union, and other Societies, and including many old friends and admirers of Mr. Godman.

It has been settled that the memorial shall take, primarily, the form of a bronze tablet, with medallion-portraits of Messrs. Godman and Salvin, and a suitable inscription, to be offered to the Trustees of the British Museum to be placed in the Natural History Museum.

Should there be, as the Committee hope, a generous response to the appeal which they are making, it is proposed to devote any additional sum realized, after defraying the cost of the bronze tablet, to a sum which Dame Alice Godman and her daughters are offering to the Trustees of the Museum in order to found a "Godman Memorial Exploration Fund," the proceeds of which are to be used in making scientific collections for the benefit of the Museum.

Subscriptions to this Memorial should be addressed to the Hon. Treasurer of the Committee, Mr. C. E. Fagan, Natural History Museum, Cromwell Road, London, S.W. 7.

Protection for Canadian Bird-Sanctuaries.

Mr. J. H. Gurney writes as follows :—"It is very satisfactory to learn from Mr. P. A. Taverner that by Act of the Quebec Parliament the celebrated Bird-rocks—an ancient stronghold of the Solan Goose—have now been placed under reservation as a bird-sanctuary; also Percé

Rock, and the bird cliffs of Bonaventura, where six or seven thousand Solans still breed. All these Canadian sanctuaries are in the Gulf of St. Lawrence, and no doubt they stood in much need of legal protection."

Oological Dinner.

The fifth annual Oological dinner will be held on Wednesday, 10 September, 1919. The principal feature of the exhibit in connection with this dinner will be the eggs of the Warblers.

Gentlemen wishing to attend are invited to send their names to the Hon. Sec., Clifford Borrer, 1 Fleet Street, London, E.C. 4.

The Selous Collections.

From 'Nature' we learn that Mrs. Selous has presented to the Natural History Museum Captain F. C. Selous's collection of big game trophies as well as the collection of European birds' eggs. This last is most valuable, as every clutch was taken by Captain Selous himself and is labelled most carefully with exact date and locality. The collection will in due course be removed from Worplesdon to South Kensington.

Ornithologists Abroad.

We hear that Captain Hubert Lynes is on the slopes of the Atlas in Morocco and has made some interesting ornithological discoveries. Mr. Witherby is shortly leaving for the Balearic Islands, and Dr. Hartert is collecting in Spain.

From the 'Times' we learn that Captain Court-Treatt, of the Bird-room of the Natural History Museum, is the leader of the party of airmen engaged in laying out a flying route between Bulawayo and Cape Town; while Mr. Guy Shortridge, the well-known collector, who has also been

serving in the R.A.F., has charge of the portion of the Cape to Cairo route between Abercorn at the south end of Lake Tanganyika and Bulawayo.

From the last number of the 'Auk' we learn that American collectors and observers are also returning to the field. Mr. Roy C. Andrews of the American Museum has gone back to China to continue his work there, and Mr. Klages, a well-known bird-collector, is making a trip through French Guiana to the Amazon. In February last Captain William Beebe left New York with a party which will establish themselves in the Tropical Research Station of the New York Zoölogical Society in British Guiana, where work of much importance will be carried on.

Mr. Fleming's Museum.

One of the largest private collections of birds in North America is that of Mr. J. H. Fleming, M.B.O.U. He has recently completed a census and has communicated the figures to the 'Auk.' The collection is not confined to North American species, but covers the birds of the world. We learn that it comprises about 25,000 specimens, representing 5377 species and 1925 genera as recognized in Sharpe's Hand-list. When we note that there are, according to this authority, some 17,000 species of birds and 2647 genera, we realize that Mr. Fleming has about one-third of the known species and three-fourths of the genera represented, the latter being evidence of the painstaking care that he has exercised in bringing together this notable series of specimens.

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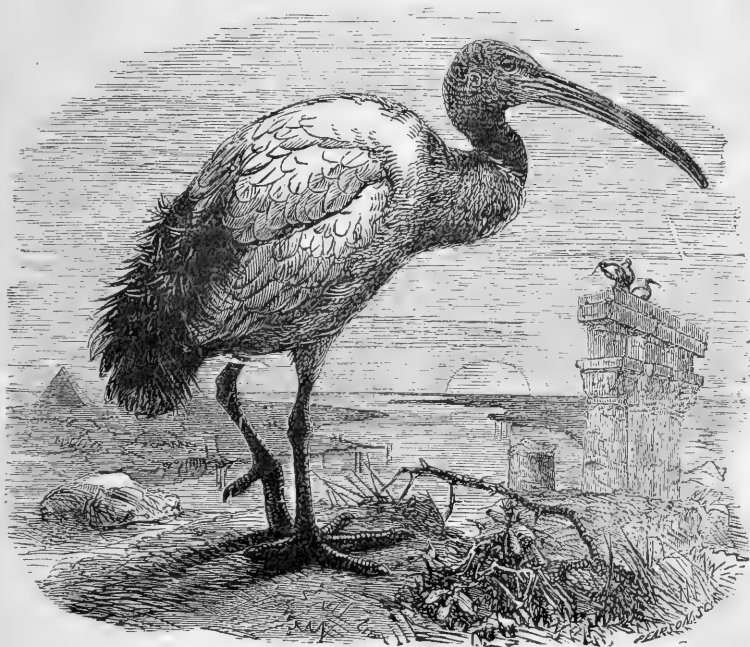
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XXIX.—*On Birds from South Annam and Cochin China.*

Part II. PYCNONOTIDÆ—DICÆIDÆ. By HERBERT C. ROBINSON, M.B.O.U., and C. BODEN KLOSS, M.B.O.U.*

(Plates XII.–XVIII.)

107. *Ægithina tiphia* (Linn.).

Oustalet, p. 68.

2 ♂, 1 ♂ imm., 2 ♀. Tour Cham, Phanrang, 22–23 May, 1918.

1 ♀. Daban, 650 ft., S. Annam. 27 March, 1918.

2 ♂. Dran, 3000 ft., S. Annam. 30 March–17 May, 1918.

“Iris whitish; maxilla black, edges pale plumbeous, culmen black; mandible pale plumbeous; feet plumbeous.”

Males. T. L. 130, 133, 130, 146, 142; W. 62, 61, 58, 59, 64 mm.

Females. T. L. 135, 130, 145; W. 62, 58, 64 mm.

Oustalet (Nouv. Arch. du Mus. Paris, (2) t. viii. 1886, p. 285; *op. cit. supra*, p. 69) describes a species *Ægithina philipi* from a single specimen from Hué, central Annam.

* Continued from p. 453. For map, see Text-figure 3, p. 393. The illustration of *Cryptolopha malcolmsmithi*, described on p. 448, in the first portion of the paper, will be found on Plate XVI. fig. 1, published with the present portion.

It is said to differ from *Ægithina tiphia* in having a larger beak, more rounded wing, greyish-green head and neck, and whitish throat. It has remained unique since its first description. Careful comparison of the above series with a large number of skins from the Malay Peninsula and Peninsular Siam reveals no material differences, and, as Oustalet himself is inclined to suggest, we are disposed to think that *Æ. philipi* must have been founded on a depigmented and abnormal individual. Similar cases of abnormal coloration occur not infrequently among species of green Pigeons (*Osmotreron* and *Crocopus*).

108. *Æthorhynchus lafresnayeri xanthotis* (Sharpe).

Æthorhynchus xanthotis Oustalet, p. 70; Gyldenstolpe, Kungl. Sv. Vet.-Akad. Handl. l. no. 8, 1913, p. 22, pl. i. fig. 1.

Æthorhynchus lafresnayeri Kloss, Ibis, 1918, p. 197.

1 ♂, 1 ♀. Trang Bom, Cochin China. 2-5 June, 1918.

1 ♂. Daban, 650 ft., S. Annam. 19 March, 1918.

"Maxilla black, edged cobalt; mandible cobalt, distal half black; feet dull cobalt."

Males. T. L. 150, —; W. 68, 68; bill from gape 24, 25 mm.

Female. T. L. 155; W. 67; bill from gape 24.5 mm.

These three specimens, though they have not developed the black wings and tails of fully adult birds, can be separated from birds from the Malay Peninsula in a similar stage of plumage by the much lighter greenish-yellow tinge of the upper surface. Forehead and superciliaries bright lemon-yellow, ear-coverts pale yellow. The birds from eastern Siam listed by one of us (*supra*) are intermediate, but on the whole are much closer to *A. l. lafresnayeri* than to *A. l. xanthotis*, which is based on a single female from Cambodia.

109. *Chloropsis chlorocephala* (Wald.).

Oustalet, p. 72; Kloss, Ibis, 1918, p. 198.

1 ♂, 1 ♀. Trang Bom, Cochin China. 31 May, 1918.

2 ♂, 2 ♀. Daban, 650 ft., S. Annam. 18-20 March, 1918.

"Iris brown, bill black, feet dull plumbeous."

Males. T. L. 173, 178, 175 ; W. 80, 84, 83 mm.

Females. T. L. 165, 173, 173 ; W. 75, 76, 77 mm.

110. *Chloropsis aurifrons inornatus* Kloss.

Ibis, 1918, p. 198.

Chloropsis aurifrons Oustalet, p. 72.

3 ♂ ad., 1 ♀ ad., 1 ♀ imm. Daban, 650 ft., S. Annam.
15-23 March, 1918.

"Iris dark, bill black, feet greenish leaden or leaden."

Males. T. L. 185, 187, 191 ; W. 89, 91, 93 mm.

Females. T. L. 182, 183 ; W. 92, 85 (imm.) mm.

This series agrees with the type of the subspecies from Lat Bua Kao, eastern Siam, in the absence of yellow on the head and below the black gorget. The orange frontal area is, however, slightly more extensive in all the specimens.

111. *Irena puella puella* (Lath.).

Robinson, Ibis, 1915, p. 745.

3 ♂, 4 ♀. Daban, 650 ft., S. Annam. 15-23 March,
1918.

1 ♂, 1 ♀. Dran, 3000 ft., S. Annam. 29 March-16 May,
1918.

"Iris crimson, bill and feet black."

Males. T. L. 245, 250, 255, 260 ; W. 129, 123, 123,
126 mm.

Females. T. L. 245, 263, 257, — ; W. 123, 125, 123, 128,
121 mm.

Agreeing perfectly with specimens from the north of the Malay Peninsula and southern Siam.

112. *Hypsipetes concolor* Blyth.

Oustalet, p. 73.

4 ♂, 4 ♀. Daban, 650 ft., S. Annam. 20-26 March,
1918.

5 ♂, 2 ♀. Dran, 3000 ft., S. Annam. 9-18 May, 1918.

3 ♂, 1 ♀. Dalat, 5000 ft., S. Annam. 2-3 May, 1918.

1 ♂. Langbian Peaks, 6-7500 ft., S. Annam. 21 April,
1918.

"Iris dark, bill and feet blood-red."

Males. T. L. —, 255, 255, 265, 248, 250, 250, 258, 265, 260, 247, 250, 250; W. 118, 118, 116, 126, 119, 117, 120, 117, 118, 124, 117, 121, 118 mm.

Females. T. L. —, —, 248, 237, 235, 243, 247; W. 115, 116, 114, 112, 111, 112, 114 mm.

Anderson's figure of *H. yunnanensis* (Anat. & Zool. Res. Yunnan, 1878, p. 656, pl. 50), though otherwise fairly good, does not indicate the quadrate black spot on the malar region beneath the ear-coverts which is present, to a greater or less extent, in all the above series.

113. *Hemixus davisoni* Hume.

Oustalet, p. 74.

3 ♂, 2 ♀. Dran, 3000 ft., S. Annam. 31 March–16 May, 1918.

“Iris crimson (male), reddish hazel or hazel (female); bill black; feet deep brown.”

Males. T. L. 210, —, —; W. 100, 100, 102 mm.

Females. T. L. 205, 204; W. 93, 96 mm.

Both this species and *H. hildebrandi* Hume (Stray Feath. ii. 1874, p. 508) are very rare in collections and seem also very closely allied, the former differing from the present one only in the tint of the head, which is described as deep blackish brown, while in *H. davisoni* it is rich warm brown. We have followed Oustalet in identifying the above series with the last-named form.

114. *Hemixus tickelli griseiventer*, subsp. nov.

Differs from *Hemixus tickelli peracensis* Hart. & Butl. (Nov. Zool. v. 1898, p. 506), from the mountains of the Malay Peninsula, in having the head rather duller brown, ear-coverts more greyish, and underparts greyer with practically no fulvous suffusion on the breast and sides of the body.

“Iris crimson, bill blackish, feet brown.”

Types. ♂ ♀. Langbian Peaks, 5500–7500 ft. 13 April, 1918.

1 ♂, 1 ♀. Dalat, 5000 ft., S. Annam. 8–10 April, 1918.

1 ♀. Arbre Broyé, 5400 ft., S. Annam. 13 May, 1918.

4 ♂, 3 ♀. Langbian Peaks, 5500–7500 ft., S. Annam.
13–20 April, 1918.

Males. T. L. 225, 228, 240, 224, —*; W. 96, 99, 105, 91 (imm.), 100*; T. 102*; Ts. 18*; b. f. g. 26* mm.

Females. T. L. 218, 210, —, 230, 228*; W. 96, 98, 97, 100, 98*; T. 105*; Ts. 18.5*; b. f. g. 24.5* mm.

115. *Xanthiscus flavescens sordidus*, subsp. nov.

Xanthiscus flavescens flavescens Stuart Baker (nec Blyth),
Bull. B. O. C. xxxviii. 1917, p. 16.

Differs from the typical *X. flavescens* in being darker and greyer, less olivaceous above; beneath the yellow confined to the vent and under tail-coverts, the remaining underparts dark grey, white on the throat, the centre of the abdomen yellowish white, the breast very faintly washed with yellow.

Types. ♂ ♀, Arbre Broyé, 5400 ft. 8 & 12 May, 1918.

1 ♀. Dalat, 5000 ft., S. Annam. 9 April, 1918.

2 ♂, 3 ♀. Arbre Broyé, 5400 ft., S. Annam. 8–14 May, 1918.

“Iris dark, bill and feet black.”

Males. T. L. 210*, 200; W. 86*, 88; tail 108*; bill from gape 17.5*; tarsus 20*.

Females. T. L. 195, 190, 190, 200*; W. 80 (imm.), 82, 79, 82*; tail 106*; bill from gape 17.5*; tarsus 20*.

Mr. Stuart Baker (Bull. Brit. Orn. Club, xxxviii. 1917, p. 16) has described *X. flavescens vivida* from Salwin and Muleyit, central Tenasserim, and gives a distribution from the Kauri Kachin Hills through the Shan States, Karennee and south Burma into the Malay Peninsula.

We have before us Blyth's types, collected in Arakan by Phayre (*vide* Blyth, Cat. Birds Mus. Asiat. Soc. 1849, p. 210), and these we have compared and found to be identical with two specimens from Loi San Pa, South Shan States, collected by Bingham. Thus it seems that Mr. Stuart Baker has inadvertently redescribed the typical form as *X. v. vivida*, and has attached the typical name to the

* Types of the subspecies.

unnamed subspecies. We therefore name the Annam birds, with which, by comparison of our series with the figure and description given by Baker (Journ. Bombay Nat. Hist. Soc. vii. 1892, p. 1, plate) North Cachar birds appear to be identical.

The character attached by Mr. Baker to his *vivida*, yellow extending from vent to throat, well applies to the types of *flavescens*.

116. *Iole olivacea cinnamomeoventris* Stuart Baker.

Bull. Brit. Orn. Club, xxxviii. 1917, p. 16.

1 ♂. Trang Bom, Cochin China. 4 June, 1918.

1 ♂, 1 ♀. Daban, 650 ft., S. Annam. 20–21 March, 1918.

“Iris dark, maxilla blackish, mandible grey, feet fleshy brown.”

Males. T. L. 172, 190; W. 81, 84 mm.

Female. T. L. 188; W. 82 mm.

These specimens agree with Stuart Baker's description and with four specimens from Trang, Peninsular Siam. They are distinctly smaller on average than typical specimens of *I. olivacea* from the southern parts of the Malay Peninsula.

117. *Criniger ochraceus* Moore.

Criniger ochraceus Robinson, Ibis, 1915, p. 746.

Criniger gutturalis sordidus Gyldenstolpe, Kungl. Sv. Vet.-Akad. Handl. lvi. no. 2, 1916, p. 67.

3 ♂, 2 ♀. Trang Bom, Cochin China. 31 May–6 June, 1918.

Males. T. L. 210, 218, 220; W. 102, 100, 101 mm.

Females. T. L. 218, 200; W. 100, — mm.

118. *Criniger tephrogenys henrici* Oust.

Criniger henrici Oust. Bull. du Mus. Paris, 1896, p. 183; id. op. cit. 1898, p. 15 [type-locality, Ban Mai, Tonkin]; id. Nouv. Arch. du Mus. v. 1903, p. 76.

5 ♂, 1 ♀. Daban, 650 ft., S. Annam. 10–21 March, 1918.

"Iris dark, maxilla blackish grey, mandible grey, feet fleshy brown."

Males. T. L. 222, 248, —, —, —; W. 101, 104, 107, 107, 108 mm.

Female. T. L. 224; W. 100 mm.

These specimens agree fairly well with Oustalet's description of *C. henrici* from Tonkin and Yunnan, and are within his limits of size (W. 100–115 mm.). They only differ from *C. t. tephrogenys* Jard. & Selby in being slightly larger, with the yellow on the belly brighter and the under tail-coverts richer in tone.

Stuart Baker (Bull. Brit. Orn. Club, xxxviii. 1917, p. 15) has described (as a subspecies of *Criniger pallida* from Hainan) *Criniger pallida grandis* from Yunnan, which appears to be inseparable from *C. t. henrici* (? W. 100–119 mm.).

119. *Pycnonotus blanfordi* (Jerd.).

6 ♂, 5 ♀. Tour Cham, Phanrang, S. Annam. 20–23 May, 1918.

"Iris ochre-brown; maxilla blackish; mandible, tip blackish, base fleshy; feet dark brown."

Males. T. L. 175, 190, 190, 190, 190, 195; W. 82, 80, —, 80, 78, 81 mm.

Females. T. L. 175, 188, 190, 195, 195; W. 78, 79, 80, 81, 81 mm.

120. *Pycnonotus aurigaster germaini* Oust.

Pycnonotus germaini Oustalet, p. 77.

1 ♂. Daban, 650 ft., S. Annam. 27 March, 1918.

9 ♂, 4 ♀. Dran, 3000 ft., S. Annam. 1 April–18 May, 1918.

1 ♂. Djiring, 3000 ft., S. Annam. 9 April, 1918.

"Iris hazel or brown, bill and feet black."

Males. T. L. 195, 200, 197, 200, 210, 212, 193, 208, 198, 204, 205; W. 86, 92, 92, 90, 92, 90, 91, 89, 87, 91, 90 mm.

Females. T. L. 195, 190, 195, 196; W. 85, 88, 85, 89 mm.

This Bulbul only differs from a series of *P. aurigaster* (Vieill.) from Java, with which we have compared it, in

having the head duller brownish, not black, the upper surface more uniform, the pale area on the rump less pronounced, less black on the chin, and the under tail-coverts chrome, not orange-yellow. From *P. a. xanthorrhous* Anderson from Yunnan it can be distinguished by the black chin, the browner cap, the deeper yellow under tail-coverts, and by the white ear-coverts.

121. *Pycnonotus finlaysoni* (Strickl.).

Oustalet, p. 78 ; Robinson, Ibis, 1915, p. 747 ; Kloss, Ibis, 1918, p. 199.

3 ♂. Daban, 650 ft., S. Annam. 18-23 March, 1918.

"Iris dark, bill black, feet blackish brown."

T. L. 190, 195, 200 ; W. 88, 89, 90 mm.

122. *Otocompsa emeria* (Linn.).

Otocompsa jocosa Oustalet, p. 80.

3 ♀. Dran, 3000 ft., S. Annam. 30 March-10 May, 1918.

"Iris brown, bill and feet black."

T. L. 180, 192, 193 ; W. 75, 78, 78 mm.

123. *Otocompsa flaviventris* (Tickell).

Otocompsa flaviventris Oustalet, p. 81 ; Robinson, Ibis, 1915, p. 747.

5 ♂, 2 ♀. Daban, 650 ft., S. Annam. 13-21 March, 1918.

"Iris pale yellow, bill and feet black."

Males. T. L. 190, 195, 190, 186, 187 ; W. 80, 85, 82, 84, 87 mm.

Females. T. L. 188, — ; W. 79 (imm.), 80 mm.

124. *Dryonastes chinensis germaini* Oust.

Dryonastes germaini Oust. Bull. Zool. Franc. xv. 1890, p. 153.

1 ♂, 1 ♀. Trang Bom, Cochín China. 1 June, 1918.

Male. T. L. 285 ; W. 122 mm.

Female. T. L. 265 ; W. 111 mm.

These are practically topotypes of the subspecies, which

only differs from *D. chinensis* in the absence of grey on the chest, abdomen, and flanks, which are olive-brown.

125. *Garrulax leucolophus diardi* (Less.).

Garrulax diardi Oustalet, p. 85 ; Robinson, Ibis, 1915, p. 747.

Garrulax leucolophus diardi Kloss, Ibis, 1918, p. 233.

1 ♂, 3 ♀. Trang Bom, Cochin China. 31 May-2 June, 1918.

1 ♀. Tour Cham, Phanrang, S. Annam. 21 May, 1918.

1 ♂, 4 ♀. Daban, 650 ft., S. Annam. 13-17 March, 1918.

"Iris crimson or brown, bill black, feet plumbeous brown."

Males. T. L. 300, 295 ; W. 133, 135 mm.

Females. T. L. 275, 280, 285, 280, 300, 290, 300, 288 ; W. 132, 131, 130, 126, 126, 134, 139, 127 mm.

126. *Garrulax moniliger mouhoti* Sharpe.

Kloss, Ibis, 1918, p. 232 ; Stuart Baker, Bull. Brit. Orn. Club, xxxviii. (1918) p. 65.

Garrulax moniliger leucotis Stuart Baker, tom. cit. p. 8 (1917).

3 ♂, 1 ♀. Trang Bom, Cochin China. 4-6 June, 1918.

2 ♀. Daban, 650 ft., S. Annam. 14-24 March, 1918.

"Iris yellow ; bill black, tip paler ; feet grey."

Males. T. L. 295, 290, 305 ; W. 128, 125, 135 mm.

Females. T. L. 290, 297, 305 ; W. 121, 120, 125 mm.

The rufous of the flanks and fore-neck is variable.

127. *Garrulax vassali* (Grant).

Dryonastes vassali Ogilvie-Grant, Bull. Brit. Orn. Club, xix. 1906, p. 13.

1 ♂, 1 ♀. Dran, 3000 ft., S. Annam. 30 March-9 May, 1918.

4 ♂, 3 ♀. Langbian Peaks, 5500-7500 ft., S. Annam. 22-27 April, 1918.

"Iris crimson ; maxilla black ; mandible, base blue-grey, tip whitish ; feet plumbeous."

Males. T. L. 283, 274, 269, 273, 275 ; W. 105, 117, 110, 108, 110 mm.

Females. T. L. 277, 276, 270, 270; W. 111, 111, 112, 107 mm.

Ogilvie-Grant's short description is not very clear, so we supplement it with a fuller one.

Extreme point of forehead and thence to eye, lores, feathers below eye and at base of bill, ear-coverts, chin, and median area of throat black; top of head, nape, and sides of neck slate-colour; a large malar patch white; fore-neck and upper breast light neutral grey, the feathers anteriorly with white, posteriorly with dark grey bases. Mantle, scapulars, and back Brussels-brown, upper tail-coverts duller and more olivaceous (deep olive). Middle pair of tail-feathers deep greyish olive with a broad subterminal black band, remaining feathers with the black band increasing in extent outwardly until only the extreme base is greyish, all the feathers with pale tips increasing in size and changing from grey to white from the middle pair outwards. Wing black, the outer webs of the primaries olive-grey (grey distally); outer webs of the secondaries and the exposed portion of the upper secondaries and tertiaries brown like the back. Primary wing-coverts brownish on the outer, dusky on the inner webs, the remainder like the scapulars; winglet grey. Under wing-coverts and axillaries greyish white tipped with olive-brown. Wings dusky below, inner edges of the quills pale. Breast, sides of flanks, and thighs buffy olive; centre of abdomen, vent, and under tail-coverts white. Tail below black, the outer feathers with broad white tips, gradually decreasing in size and becoming greyish on the two central pairs.

128. *Garrulax milleti*, sp. nov. (Plate XII.)

Head fully crested; the feathers pointed on the forehead and above the eyes; a large triangular bare space behind the eye. Entire head, fore-neck, and upper breast black, sharply margined; nape, sides of neck behind ear-coverts, and the lower breast narrowly white, becoming grey (between slate-grey and deep neutral grey) on the mantle and lower parts. Wings dusky brown, tail blackish; scapulars, back, and upper tail-coverts dark olive, the edges



GARRULAX MILLETI.

of the wing and tail-feathers washed with same colour. Axillaries, under wing-coverts, and inner side of wing dusky, thighs dusky brown, lower tail-coverts ochraceous grey, under surface of tail black, the quills whitish.

Types. ♂ ♀. Dalat, 5000 ft., S. Annam. 2-4 May, 1918.

Male. T. L. 295; W. 127; T. 129; tarsus 42.5; bill from gape 33 mm.

Female. T. L. 290; W. 124; T. 129; tarsus 41; bill from gape 31 mm.

"Iris crimson; edge of eyelid black; bare orbital skin bluish white; bill black; feet blackish; tarsi plumbeous black."

7 ♂, 3 ♀. Dalat, 5000 ft., S. Annam. 7 April-4 May, 1918.

4 ♂, 1 ♀. Dran, 3000 ft., S. Annam. 11 May.

Males. T. L. 295, 290, 285, 298, 285, 295, 297, 285, 285, 300, 282; W. 127, 131, 124, 122, 127, 130, 137, 122, 126, 134, 127 mm.

Females. T. L. 290, 295, 282; W. 124, 135, 125 mm.

[This striking species is named in honour of Monsieur F. Millet, Officer in charge of the forests of Langbian Province and a big-game hunter, to whom I owe thanks for much assistance, information, and hospitality during my visit to the Langbian Plateau.—C. B. K.]

129. *Trochalopteron yersini*, sp. nov. (Plate XIII. fig. 2.)

Sides of head below the eyes, including ear-coverts and areas behind eyes, silvery with black shafts to the feathers; entire remaining parts of head black, sharply margined on nape and sides of neck, rather less sharply margined on the fore-neck, where the black extends further down. Posterior nape and upper mantle, sides of neck, breast, and abdomen fulvous, between deep "Mars-yellow" and light "amber-brown"; lower mantle, scapulars, back, upper tail-coverts, flanks, vent, and tail-coverts deep neutral grey, tinged with olive on mantle, lower tail-coverts, and lower parts; thighs fuscous brown. Tail above olivaceous bronze, the outer

webs of all the feathers becoming shining rich golden olive at their edges, this colour increasing in extent on the outer feathers and towards the base of the tail; below black, edged externally with olivaceous. Wings black on the inner webs, the outer webs rather brighter than the tail, especially basally, the upper secondaries and the tertiaries dark grey washed on the outer webs with olivaceous, and with black shaft-stripes. Primary coverts intense black, lesser wing-coverts olive-grey tinged with rufous, median and greater coverts deep rufous, internally blackish, edge of wing yellowish white. Under wing-coverts and axillaries grey with fulvous tips; inner edges of rectrices narrowly fulvescent below.

Types. ♂ ♀. Langbian Peaks, 5500–7500 ft., S. Annam. 22–24 April, 1918.

Male. T. L. 278; W. 102; T. 133; tarsus 40; bill from gape 29 mm.

Female. T. L. 268; W. 97; T. 125; tarsus 37; bill from gape 27.5 mm.

“Iris crimson, brown, or hazel; bill black; feet dark brown.”

2 ♂, 2 ♀. Dalat, 5000 ft., S. Annam. 1 May, 1918.

6 ♂, 1 ♂ juv., 13 ♀. Langbian Peaks, 5500–7500 ft., S. Annam. 15–26 April.

Males. T. L. 278, 280, 274, 275, 280, 277, 260, 260; W. 102, 105, 98, 97, 101, 105, 100, 104 mm.

Females. T. L. 268, 265, 272, 265, 270, 272, —, 270, 270, 260, 275, 260, 265, 268, 266; W. 97, 96, 95, 97, 98, 100, —, 100, 102, 100, 100, 98, 102, 100, 102 mm.

The series is somewhat variable in the tint of the under surface, and some specimens have the sides of the breast in the vicinity of the black deeper in colour.

[This distinct species is named in honour of Dr. A. Yersin, Director of the Pasteur Institute, French Indo-China, whom I met at Nhatrang.

Dr. Yersin was the discoverer of the Langbian Plateau, and it gives a naturalist pleasure to associate his name with its fauna.—C. B. K.]



1.



2.

1. STACTOCICHLA MERULINA ANNAMENSIS.

2. TROCHALOPTERON YERSINI.

130. *Stactocichla merulina annamensis*, subsp. nov. (Plate XIII. fig. 1.)

Differs from *S. merulina* in being apparently more olivaceous above, the supraorbital stripe commencing at the forehead and being ochraceous, not white; the chin and throat and malar region black. Under surface deeper in tone, rich ferruginous, slightly paler in the middle of the abdomen, the black breast-markings much smaller and narrower. Under tail-coverts deepest in colour.

Types. ♂ ♀. Dran, 3000 ft., S. Annam. 11-12 May, 1918.

Male. T. L. 240; W. 97; T. 105; tarsus 36.5; bill from gape 31.5 mm.

Female. T. L. 235; W. 92; T. 103; tarsus 36.5; bill from gape 28.5 mm.

"Iris hazel, eyelids black; bill of male leaden; bill of female, maxilla black, edges grey at tip, mandible blackish plumbeous, edges pale; feet dark brown."

We have compared the Annamese birds with a co-type of the typical subspecies from Cherrapunji, Assam, and a female from Hungrum, North Cachar Hills, collected on 10 July, 1893, by E. C. Stuart Baker, and find that they constitute an excellent local form.

131. *Pomatorhinus olivaceus annamensis*, subsp. nov.

A member of the *schisticeps-olivaceus-nuchalis* group.

Differs from *P. olivaceus olivaceus* and *P. olivaceus ripponi* (specimens examined) in the darker head, defined from the mantle, and in having the maroon-chestnut of the neck-patches carried more or less down the flanks. From *P. o. fastidiosus* Hartert (topotypes examined), it differs in the darker tail and the richer colour of the flanks, which are streaked with white.

Type. ♂ ad. from Dran, 3000 ft., S. Annam. 13 May, 1918.

T. L. 225; W. 94; T. 113; bill from gape 28; tarsus 33.5 mm.

"Iris crimson; bill yellow, posterior culmen, nostril, and extreme base of maxilla dark brown; feet dull plumbeous, tarsi brownish."

2 ♂. Dran, 3000 ft., S. Annam. 13-17 May, 1918.

1 ♀. Arbre Broyé, 5400 ft., S. Annam. 15 May, 1918.

Males. T. L. 225 (type), 214; W. 94 (type), 89 mm.

Female. T. L. 208; W. 89 mm.

132. *Pomatorhinus tickelli brevirostris*, subsp. nov.

?*Pomatorhinus tickelli* Kuroda, Annot. Zool. Japon. ix. 1917, p. 233: Tonkin.

Compared with a specimen from Muleyit, the type of "*P. hypoleucus* var." Blyth (Journ. Asiat. Soc. Bengal, xxiv. 1855), and a topotype of the species which should be credited to it, these specimens agree in all essential respects except that the bill is about 5 mm. shorter and less decurved. The difference is, in view of the locality, sufficient to merit a name.

This form agrees in its short blackish bill with *Pomatorhinus tickelli hainanus* Rothschild, Bull. Brit. Orn. Club, xiv. 1903, p. 9, but this island form is smaller in other dimensions than typical *P. tickelli*; whereas the Cochin China and Tenasserim birds agree in all dimensions except those of the bill.

Types. ♂ ♀. Trang Bom, Cochin China. 5 June, 1918.

Male. T. L. 270; W. 110; T. 110; bill from gape 40; tarsus 39 mm.

Female. T. L. 255; W. 108; T. 115; bill from gape 40; tarsus 37.5 mm.

133. *Rimator danjoui*, sp. nov. (Plate XIV. fig. 2.)

Very much larger than the two other forms of the genus, *R. malacoptilus* Blyth and *R. albostratus* Salvad., with a relatively much longer tail.

Above olive-brown, the feathers of the mantle with dark edges and with white hair-line shaft-stripes, sides of the head whitish brown, the ear-coverts with pale shaft-stripes, a double stripe from the angle of the jaw dark brown separated by a whitish stripe. Chin and throat white, sides

of the neck and breast bright fulvous, the feathers of the breast with broad dusky centres giving a striped appearance; flanks, thighs, vent, and under tail-coverts olive-brown. Middle of the abdomen greyish white; tail olive-brown, duller beneath; wings like the back, the inner webs dusky; under wing-coverts and axillaries dusky, washed with olive-brown, carpal joint whitish.

Types. ♂ from Langbian Peaks, 6000 ft., S. Annam.
27 April, 1918.

♀ from Dalat, 5000 ft., S. Annam. 8 April, 1918.

Male. T. L. 200; W. 78; T. 71; tarsus 30; bill from gape 40·5 mm.

Female. T. L. 197; W. 77; T. 66; tarsus 29·5; bill from gape 38 mm.

“Iris crimson or hazel; bill bluish grey, tipped fleshy, base blackish; feet fleshy brown.”

2 ♂, 1 ♀. Langbian Peaks, 6000–7500 ft., S. Annam.
20–27 April, 1918.

1 ♂, 1 ♀, 1 ♀ juv. Dalat, 5000 ft., S. Annam. 8 April, 1918.

Males. T. L. 205, 202, —; W. 78, 73, 77 mm.

Females. T. L. 197, 188; W. 77, 70 mm.

Sex inc. T. L. 194; W. 76 mm.

The colour of the centre of the abdomen varies, in one specimen being almost pure white, while in some the dark edging to the feathers of the back is almost absent. The immature bird is more rufous and the under surface is more uniform and throat buffy.

The bird is a ground-feeder.

There is little doubt that this bird is either congeneric with *R. malacoptilus* or represents a distinct genus intermediate between *Rimator* and the *gravivox* section of *Pomatorhinus*.

[This species is named in honour of Monsieur André Danjou, Consul for France in Singapore, to whom I owe thanks for courtesies that greatly facilitated my visit to Indo-China.—C. B. K.]

134. *Gampsorhynchus rufulus torquatus* Hume.

Harington, Journ. Bombay Nat. Hist. Soc. xxiii. 1915, p. 422.

3 ♂. Dran, 3000 ft., S. Annam. 15 May, 1918.

“Iris yellow; bill fleshy, culmen brown; feet fleshy washed with greyish.”

T. L. 236, 240, 240; W. 95, 99, 96 mm.

The Malayan form *G. r. saturator* Sharpe is consistently more richly coloured above (12 specimens examined).

135. *Timelia pileata jerdoni* (Walden).

Timelia pileata Oustalet, p. 88; Hartert, Nov. Zool. viii. 1901, p. 53; Harington, Journ. Bombay Nat. Hist. Soc. xxiii. 1915, p. 427.

8 ♂, 5 ♀. Dran, 3000 ft., S. Annam. 28 March–18 May, 1918.

“Iris crimson, bill black, feet brownish grey.”

Males. T. L. 172, 177, 180, 180, 168, 156, 170, 178; W. 65, 67, 65, 65, 66, 63, 64, 66 mm.

Females. T. L. 168, 163, 165, 167, 160; W. 62, 61, 63, 62, 60 mm.

From their size these specimens evidently belong to the above-quoted form, which is widely spread over Tenasserim, Burma, Siam, and southern China.

136. *Pyctorhis sinensis* (Gm.).

1 ♀. Dran, 3000 ft., S. Annam. 30 March, 1918.

1 ♀. Arbrey Broyé, 5400 ft., S. Annam. 8 May, 1918.

“Iris yellow, orbital skin yellow, edge of eyelid deep orange; bill black, nostrils pale; feet ochreous yellow.”

T. L. 167, —; W. 68, 61 mm.

Inhabiting high grass.

137. *Pellorneum ruficeps subochraceum* Swinh.

Oustalet, p. 89.

Pellorneum subochraceum Kloss, Ibis, 1918, p. 202.

1 ♂, 1 ♀. Trang Bom, Cochin China. 31 May, 1918.

2 ♂. Daban, 650 ft., S. Annam. 23–25 March, 1918.

"Iris crimson; maxilla blackish, mandible yellowish, tipped darker; feet fleshy."

Males. T. L. 160, 163, 165; W. 64, 66, 68 mm.

Female. T. L. 150; W. 63 mm.

The feathers of the breast of three birds are much more heavily streaked with blackish brown than in birds from Siam and the Malay Peninsula.

138. *Drymocataphus ignotus cinnamomeus* Rippon.

Drymocataphus cinnamomeus Rippon, Bull. Brit. Orn. Club, xi. 1910, p. 12.

Pellorneum ignotum cinnamomeum Harington, Journ. Bombay Nat. Hist. Soc. xxiii. 1915, p. 433.

1 ♀. Dran, 3000 ft., S. Annam. 17 May, 1918.

1 ♂. Le Bosquet, 5200 ft., S. Annam. 7 May, 1918.

2 ♂, 2 ♀. Dalat, 5000 ft., S. Annam. 6 April-2 May, 1918.

1 ♂. Langbian Peaks, 6000 ft., S. Annam. 26 April, 1918.

"Iris hazel; maxilla black, mandible dirty fleshy to grey; feet fleshy brown."

Males. T. L. 143, 140, 140, 137; W. 55, 57, 55, 54; T. 52, 52, 51, 53 mm.

Females. T. L. 132, 141, 135; W. 54, 56, 53; T. 50, 57, 52 mm.

This series, which is very uniform, does not perfectly coincide with the descriptions of the types from the Shan States in that the breast, not the notæum, is deep ochraceous rather than cinnamon. Col. Rippon's and Col. Harington's descriptions do not, however, quite agree.

139. *Drymocataphus tickelli* Blyth.

Harington, loc. cit. p. 435.

1 ♀. Daban, 650 ft., S. Annam. 27 March, 1918.

"Iris red; maxilla brown, mandible fleshy; feet fleshy."

T. L. 142; W. 61 mm.

Agrees well with Malayan birds.

140. *Setaria lepidcephala* (Gray).

Malacopteryx rufifrons Oustalet, p. 90.

Setaria rufifrons (Cab.); Robinson, Ibis, 1915, p. 203.

Setaria lepidcephala Kloss, Ibis, 1918, p. 203.

6 ♂, 3 ♀. Trang Bom, Cochin China. 31 May–6 June, 1918.

Males. T. L. 160, 150, 150, 152, 152, 145; W. 75, 72, 74, 71, 70, 73 mm.

Females. T. L. 160, 146, 140; W. 75, 68, 67 mm.

This series agrees with birds from Siam. Whether they are strictly identical with the Siamese form still remains an open question.

141. *Turdinulus epilepidotus clarus*, subsp. nov.

Allied to *T. e. granti* Richmond (Proc. U.S. Nat. Mus. 1900, p. 230), from Trang, Peninsular Siam, with the throat white and unspotted, but with the striping below much bolder and defined, the feathers of the centre of the breast being striped, as are those of the flanks.

Types. ♂ ♀. Dalat, 5000 ft., S. Annam. 1–3 May, 1918.

“Iris brown; maxilla black, mandible pale plumbeous; feet dirty fleshy.”

1 ♂, 2 ♀. Dran, 3000 ft., S. Annam. 31 March, 1918.

1 ♂. Arbre Broyé, 5400 ft., S. Annam. 15 May, 1918.

1 ♂, 4 ♀. Dalat, 5000 ft., S. Annam. 10 April–5 May, 1918.

Males. T. L. 110, 115, 107*; W. 53, 50, 51*; T. 30*; Ts. 20*; B. f. g. 16* mm.

Females. T. L. 105, 105, 106, 108, 107, 105*; W. 53, 54, 50, 54, 52, 51*; T. 26*; Ts. 21*; B. f. g. 16* mm.

142. *Alcippe nepalensis annamensis*, subsp. nov.

Nearest to *A. n. peracensis* Sharpe (P. Z. S. 1887, p. 439), from the mountains of the Malay Peninsula, with the throat grey, but with the head and nape purer, less brownish, grey, and the back, wings, and tail olivaceous, not russet.

* Types of the subspecies.



1.



2.

1. PSEUDOMINLA ATRICEPS.
2. RIMATOR DANJOUI.

Underparts less strongly washed with fulvous. A narrow whitish eye-ring is present, but is not conspicuous.

Types. ♂ ♀. Dalat, 5000 ft., S. Annam. 5 April–4 May, 1918.

“Iris crimson, in the female hazel; bill greyish horn; feet pale fleshy brown.”

3 ♂, 2 ♀. Dran, 3000 ft., S. Annam. 29 March–1 April, 1918.

3 ♂, 3 ♀. Dalat, 5000 ft., S. Annam. 5 April–5 May, 1918.

1 ♂. Langbian Peaks, 5500–6500 ft., S. Annam. 27 April, 1918.

Males. T. L. 148, 147, 148, 140, 153, 156*, 150; W. 64, 63, 60, 63, 63, 64*, 61; T. 74*; Ts. 22*; B. f. g. 15* mm.

Females. T. L. 150, 147, 146, 150, 147*; W. 59 (worn), 58, 60, 59, 60*; T. 68*; Ts. 22*; B. f. g. 14* mm.

Nest of the type female uniform with the description of Mr. Gammie in Oates & Hume's ‘Nests & Eggs of Indian Birds,’ i. 1889, p. 105. The eggs were two in number; somewhat pointed-oval; ground-colour almost white, richly blotched with dull brownish crimson, much more thickly at the larger end. Dimensions 19×4.2 mm.

143. *Pseudominla atriceps*, sp. nov. (Plate XIV. fig. 1.)

Nearest to *P. castaneiceps* and *P. c. soror* from the Malay Peninsula. Differs from the latter in having the cap sooty black with broad white shaft-stripes, not deep chestnut with narrow pale shaft-stripes. From the former it differs further in its larger size. Colour above olivaceous, the outer webs of the primaries rufous ochraceous, not chestnut. Inner primary coverts rufous olivaceous, not black like the wing-edging; sides of breast and flanks less heavily washed with a dull ochraceous. Sexes similar.

Types. ♂ & ♀ from Langbian Peaks, 5500–7500 ft., S. Annam. 16 April, 1918.

Male. T. L. 123; W. 57; T. 53; Ts. 21; bill from gape 15 mm.

* Types of the subspecies.

Female. T. L. 118; W. 54; T. 49; Ts. 20; bill from gape 14.5 mm.

"Iris crimson; maxilla brown, tomia pale; mandible fleshy; feet (male) dull yellow, (female) greenish yellow washed with brown."

6 ♂, 3 ♀. Langbian Peaks, 5500–7500 ft., S. Annam. 16–24 April, 1918.

Males. T. L. 123, 122, 126, 123, 125, 128; W. 57, 56, 58, 58, 58, 60 mm.

Females. T. L. 118, 127, 120; W. 54, 56, 54 mm.

144. *Stachyris nigriceps dilutus*, subsp. nov.

Differs from *S. n. davisoni* Sharpe (Bull. Brit. Orn. Club, i. 1892, p. vii), from the Malay Peninsula, in having the top of the head paler and greyer, the white stripes almost absent. An intense black postorbital stripe, broadening to a patch on the sides of the nape; no white malar spot; throat white, tinged only with grey; underparts much paler olivaceous buff, except on the lower throat, where it is slightly more ochraceous; ear-coverts ochraceous tawny.

Types. ♂ ♀. Dran, 3000 ft., S. Annam. 1 April–17 May, 1918.

Male. T. L. 140*; W. 60*; T. 61*; Ts. 21*; B. f. g. 18* mm.

Females. T. L. 142*, 136, 138; W. 67*, 66, 68; T. 69*; Ts. 20*; B. f. g. 18* mm.

Two females, possibly somewhat immature, have the throat partly washed with buffy.

145. *Stachyridopsis ruficeps* Blyth.

Stachyridopsis ruficeps Blyth, Journ. Asiat. Soc. Bengal, 1847, p. 452.

Lower plumage pale uniform wax-yellow with fine dark shaft-stripes on the throat, rufous cap extending to the nape with no black shaft-stripes, mantle and back greyish olivaceous.

1 ♂, 2 ♀. Dalat, 5000 ft., S. Annam. 8–10 April, 1918.

* Types of the subspecies.

1 ♂, 2 ♀. Langbian Peaks, 6-7500 ft., S. Annam. 15-26 April, 1918.

"Iris crimson; maxilla brown, mandible fleshy washed with bluish; feet olive-yellow."

Males. T. L. 120, 122; W. 53, 53 mm.

Females. T. L. 118, 120, 119, 120; W. 50, 50, 51, 51 mm.

Without direct comparison we are unable to separate these birds from *S. r. ruficeps* from Darjiling. They are certainly not identical with either *S. r. præcognitus* from Formosa or *S. r. davidi* Oustalet from China (*vide* Harington, Journ. Bombay Nat. Hist. Soc. xxiii. 1915, pp. 627-31).

146. *Mixornis rubricapilla connectens* Kloss.

Kloss, Ibis, 1918, p. 207.

Mixornis gularis Oustalet, p. 90.

1 ♂, 2 ♀, 1 ♀ imm. Trang Bom, Cochin China. 2-6 June, 1918.

1 ♀. Tour Cham, Phanrang, S. Annam. 21 May, 1918.

6 ♂ ad., 1 ♂ imm., 3 ♀. Daban, 650 ft., S. Annam. 20-25 March, 1918.

3 ♂ ad., 1 ♂ juv., 1 ♀. Dran, 3000 ft., S. Annam. 10-17 May, 1918.

"Iris pale yellow; maxilla black, mandible plumbeous; feet greenish yellow or brownish olive."

Males. T. L. 128, —, 135, —, 136, 134, 140, 135, 140, 132; W. 58, 56, 55, 57, 55, 56, 56, 56, 57, 57 mm.

Females. T. L. 126, 126, 132, 132, 130; W. 51, 54, 53, 57, 56 mm.

This series agrees perfectly with the typical birds from the northern half of the Malay Peninsula.

147. *Myiophoneus eugenii* Hume.

Myiophoneus eugenii Robinson, Ibis, 1915, p. 750; Kloss, Ibis, 1918, p. 208.

2 ♂, 1 ♀. Daban, 650 ft., S. Annam. 16-27 March, 1918.

"Iris dark; bill deep yellow, culmen and nasal region black; feet black."

Males. T. L. 308, 330 ; W. 158, 175 mm.

Female. T. L. 345 ; W. 173 mm.

These birds seem perfectly typical ; there is no white on the feathers of the angle of the wings and the body-feathers are black to their bases. There is some variation in the tint of blue, one bird being rather brighter than the other two.

148. *Brachypteryx carolinæ* La Touche.

La Touche, Bull. Brit. Orn. Club, viii. 1898, p. ix ; Ibis, 1899, pp. 198–200.

1 ♂, 1 ♀. Arbre Broyé, 5400 ft., S. Annam. 13–14 May, 1918.

2 ♂, 1 ♀. Langbian Peaks, 55–7500 ft., S. Annam. 15–27 April, 1918.

“Iris dark, bill blackish brown, feet brownish grey.”

Males. T. L. 110, 122, 125 ; W. 62, 58, 59 mm.

Females. T. L. 116, 120 ; W. 58, 57 mm.

We have referred the above series to this species with some hesitation. The birds, however, agree fairly well, especially the females, with Mr. La Touche's description, while his male, and possibly ours also, does not appear to have been fully adult.

149. *Brachypteryx nipalensis nipalensis* (Hodgs.).

1 ♀. Arbre Broyé, 5400 ft., S. Annam. 13 May, 1918. T. L. 120 ; W. 61 mm.

We have for the present identified this single female with the above race : it is more rufous, less russet, both above and below, than the other two females obtained (*antea*). It differs from a topotypical series of *B. n. wrayi* O.-Grant, Bull. B. O. C. xix. 1906, p. 10, in being more ochraceous, less rusty rufous above.

150. *Malacias desgodinsi* (Oust. & David).

Sibia desgodinsi Oust. & David, Bull. Soc. Philom. Paris, (7) i. 1877, p. 139.

Malacias desgodinsi Oust. Nouv. Arch. du Mus. (3) vi. 1894, p. 279 ; Grant, Ibis, 1900, p. 589 ; Ingram, Nov. Zool. xix. 1912, p. 289.

3 ♂ ad., 2 ♂ juv., 4 ♀ ad., 1 ♀ juv. Dalat, 5000 ft., S. Annam. 4 April–1 May, 1918.

1 ♂, 1 ♀. Langbian Peaks, 55–7500 ft. 18–20 April, 1918.

“Iris hazel-crimson, bill black, feet dark brown.”

Males. T. L. 224, 220, 230, 218; W. 90, 92, 89, 89 mm.

Females. T. L. 228, 220, 220, 210, 217; W. 83, 85, 89, 83, 87 mm.

This series agrees well with the original description, except that the back is grey, only slightly washed with vinaceous, and the breast suffused with grey like the flanks. One female from Dalat is partially albinistic, being of various tints of isabelline corresponding to the normal birds in depth of tone, the head and wings being dark brown.

151. *Siva sordida orientalis*, subsp. nov.

Most nearly allied to *Siva sordidior* Sharpe (P. Z. S. 1887, p. 438) from the mountains of the Malay Peninsula, with the under surface white, slightly creamy on the abdomen, not vinous grey; but with practically no trace of stripes on the forehead or any blue tint. Secondaries edged with white, not with blue or violet; outer web of tertiaries broadly pale, contrasting markedly with the inner web which is much darker; rump paler than the back, which is also lighter than in *S. s. sordidior*. Tail with the two outer pairs of feathers white on the inner web; winglet not tipped with white.

Types. ♂ ♀. Langbian Peaks, 6–7500 ft., S. Annam. 18 April, 1918.

“Iris pale yellow; maxilla dark brown, mandible fleshy; feet dull fleshy brown.”

2 ♂. Drau, 3000 ft., S. Annam. 16–17 May, 1918.

2 ♂. Dalat, 5000 ft., S. Annam. 3–4 May, 1918.

5 ♂, 8 ♀. Langbian Peaks, 55–7500 ft., S. Annam. 16–26 April, 1918.

Males. T. L. 163, 165, 166, 176, 168, 157, 167, 168, 175*, W. 66, 66, 65, 63, 67, 65, 64, 66, 64*; T. 74*; Ts. 24*; B. f. g. 18 mm.

* Types of the subspecies.

Females. T. L. 172, 170, 172, 172, —, 160, 175, 163 * ; W. 65, 64, 66, 66, 63, 63, 62, 65 * ; T. 77 * ; Ts. 23 * ; B. f. g. 19 * mm.

152. *Herpornis xantholeuca sordida*, subsp. nov.

Herpornis xantholeuca Kloss, Ibis, 1918, p. 209.

Duller and more greyish above than other continental races, especially on the head: topotypes of *H. x. interposita* Hartert (Bull. Brit. Orn. Club, xxxviii. 1917, p. 20) compared. In Siamese specimens the difference is scarcely so marked.

Types. ♂ ♀. Daban, 650 ft., S. Annam. 14–21 March, 1918.

“Iris dark; maxilla horny brown, mandible fleshy; feet fleshy.”

3 ♂, 1 ♀. Daban, 650 ft., S. Annam. 14–21 March, 1918.

2 ♂. Dran, 3000 ft., S. Annam. 11–14 May, 1918.

Males. T. L. 122 *, 120, 120, —, 122; W. 67 *, 66, 67, 67, 65; T. 50 *; Ts. 17 *; B. f. g. 15.5 * mm.

Female. T. L. 118 *; W. 61 *; T. 46 *; Ts. 17 *; B. f. g. 15.5 * mm.

153. *Cutia nipalensis legalleni*, subsp. nov. (Plate XV.)

Male. Differs from both the other forms of the genus in having the whole of the under surface except the throat, but including the under tail-coverts, white barred with black, the bars narrower than in the other forms. Primaries and secondaries without the fine white tips present in the other races. Crissum and under tail-coverts slightly washed with buff. Crown with fine black shaft-stripes.

Total length 190; wing 87; tail 70; tarsus 25; bill from gape 24 mm.

Female. Differs from the females of the other races in having the cap and nape dark brown, slightly washed with grey, not markedly distinct from the ear-coverts. Ground-colour of the mantle light brownish-olive (*Ridgway*), much duller with no rufous tinge.

* Types of the subspecies.

1.

2.



CUTIA NIPALENSIS LEGALLEN. (Fig. 1 ♀ Fig. 2 ♂)

Total length 190 ; wing 88 ; tail 70 ; tarsus 27 ; bill from gape 23 mm.

Types. ♂ & ♀. Langbian Peaks, 7200 ft., S. Annam. 18 & 15 April, 1918.

“Iris brown, bill black with base of lower mandible grey, feet yellow.”

3 ♂, 4 ♀. Langbian Peaks, 6-7500 ft., S. Annam. 15-28 April, 1918.

1 ♂. Arbrey Broyé, 5200 ft., S. Annam. 14 May, 1918.

3 ♂, 6 ♀. Dalat, 5000 ft., S. Annam. 1-4 May, 1918.

2 ♀. Dran, 3000 ft., S. Annam. 10 May, 1918.

Males. T. L. 190 *, 192, 186, 185, 193, 195, 172 (imm.) ; W. 87 *, 90, 89, 85, 86, 88, 80 (imm.).

Females. T. L. 190 *, 180, 190, 176, 184, 176, 164 (juv.), 180, 175, 180, 176, 181 ; W. 88 *, 81, 83, 80, 82, 76 (juv.), 83, 82, 83, 82, 82 mm.

[Named in honour of Monsieur Maurice-Joseph Le Gallen, Governor of Cochin China, to whom I am indebted for courtesies that facilitated my journeys in Indo-China.—*C. B. K.*].

154. *Pterythius æralatus annamensis*, subsp. nov.

Adult male. Differs from *P. æralatus æralatus* from Tenasserim and the northern Malay Peninsula in being paler below with the white stripe separating the chin and throat from the cheek entirely absent, and in the entire absence also of black tips to the outer secondaries and tertiaries ; the white tips to the primaries much reduced in both sexes ; and from *P. æralatus ricketti* of southern China in having the ear-coverts black instead of very dark grey.

Adult female. Differs from *P. æralatus æralatus* in being less buffy beneath and having the tertiaries much more extensively rufous-brown ; and from *P. æ. ricketti* in having the chin and breast whitish instead of dull grey.

Types. ♂ & ♀ ad. Langbian Peaks, 6-7500 ft., S. Annam. 18-19 April, 1918.

“Iris grey ; maxilla black, sides of base grey ; mandible pale plumbeous ; feet fleshy.”

* Types of the subspecies.

1 ♂, 2 ♀. Dran, 3000 ft., S. Annam. 21 March–9 May, 1918.

1 ♂ ad., 1 ♂ imm., 1 ♀. Arbres Broyés, 5400 ft., S. Annam. 15 May, 1918.

3 ♂, 1 ♂ imm., 2 ♀. Dalat, 5000 ft., S. Annam. 11 April–7 May, 1918.

3 ♂, 4 ♀. Langbian Peaks, 6–7500 ft., S. Annam. 15–28 April, 1918.

Males. T. L. 172, 168, 165 (imm.), 158, 168, 166, 167*; W. 80, 79, 79, 82, 77 (imm.), 75, 82, 78, 79*; T. 64*; Ts. 26*; B. f. g. 21* mm.

Females. T. L. 166, 170, 175, 170, 167, 167, 170, 163, 167*; W. 78, 77, 77, 74, 78, 77, 81*; T. 66*; Ts. 25.5*; B. f. g. 20* mm.

Young males are olive-brown above, the heads more greyish, with pale shaft-stripes; lores and ear-coverts dusky, also with pale shafts; the white postorbital stripe only slightly indicated. Wing-coverts with large yellow tips, the breast washed with buffy and the under tail-coverts pale lemon-yellow.

155. *Tesia cyaniventris olivacea* McClell.

Saxicola olivacea McClell. P. Z. S. 1839, p. 161.

2 ♂. Arbres Broyés, 5400 ft., S. Annam. 14 May, 1918.

2 ♂. Dalat, 5000 ft., S. Annam. 5–11 April, 1918.

2 ♂, 4 ♀. Langbian Peaks, 6–7500 ft., S. Annam. 21–26 April, 1918.

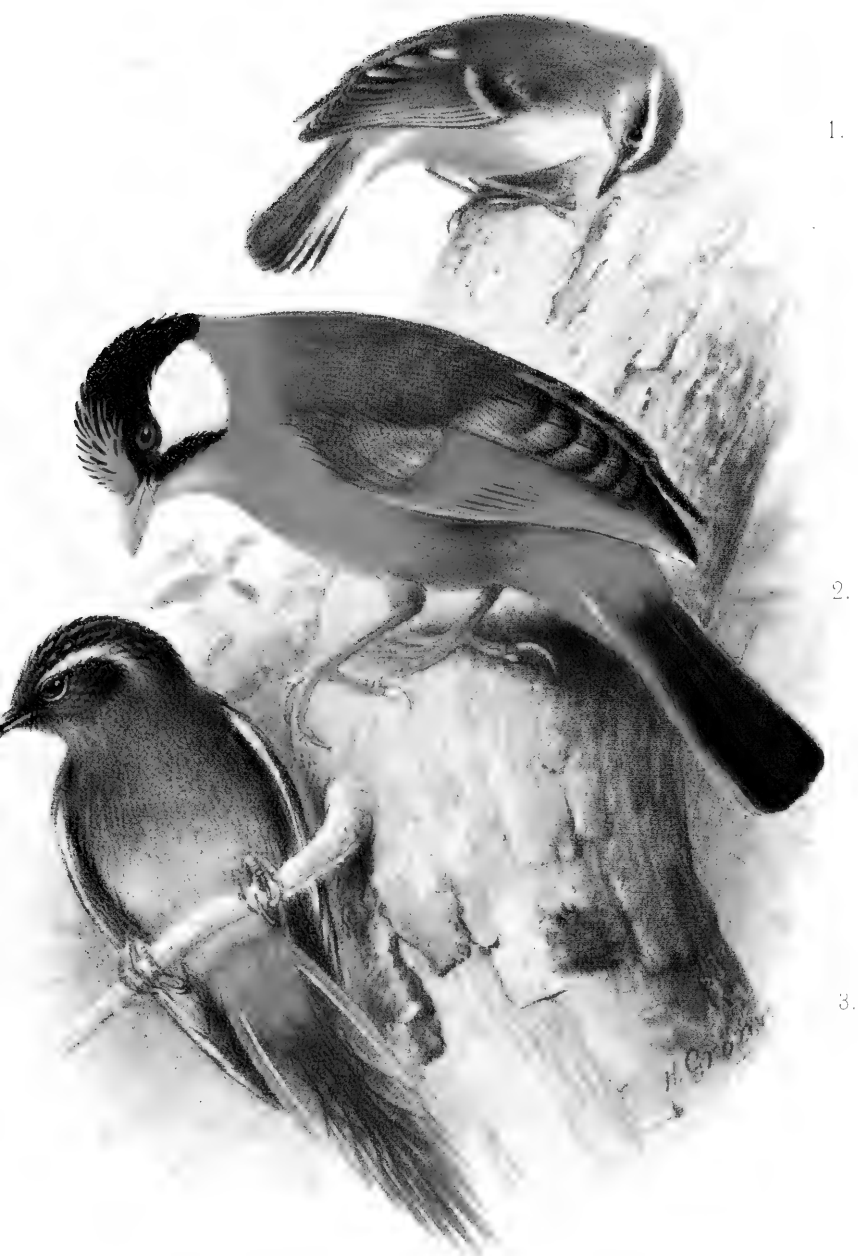
“Iris dark; maxilla black, mandible deep yellow, tip blackish; feet yellowish brown.”

Males. T. L. 85, 90, 90, 93, 95; W. 47, 49, 47, 49, 48, 51 mm.

Females. T. L. 89, 83, 90, 88; W. 45, 45, 48, 45 mm.

The sexes in the above series are exactly alike, and all the specimens have a pale yellow-green superciliary stripe fairly well marked, while the colour beneath is a paler grey than in a male from Sikhim. It would appear that no birds from east of the Bay of Bengal have the golden-green heads of

* Types of the subspecies.



1. *CRYPTOLOPHA MALCOLMSMITHI* (see p. 448.)

2. *MESIA ARGENTAUROS CUNHACI*.

3. *CERTHIA DISCOLOR MERIDIONALIS*.

the western males to which the name *cyaniventris* Hodgson applies. We have, therefore, used McClelland's name attached to a specimen from Assam. Descriptions of *Tesia grallator* Thayer & Bangs, from Szechuan are not accessible to us at the moment, but will require comparison.

156. *Mesia argentauris cunhaci*, subsp. nov. (Plate XVI. fig. 2.)

Differs from *M. a. argentauris* in having the anterior part of the forehead chrome, tinged with orange and rayed with yellow to the level of the eyes.

Type. ♂. Dalat, 5000 ft., S. Annam. 11 April, 1918.

"Iris crimson, bill yellow, feet greenish yellow."

1 ♂. Dran, 3000 ft., S. Annam. 30 March, 1918.

1 ♂. Arbre Broyé, 5400 ft., S. Annam. 15 May, 1918.

1 ♂. Dalat, 5000 ft., S. Annam. 7 April, 1918.

T. L. 180, 165, 170 *; W. 77, 79, 84 *; T. 78 *; Ts. 25.5 *; B. f. g. 17.5 * mm.

The first two specimens have the nasal plumes and sides of the throat more tinged with orange than the type.

Compared with large series of *M. a. argentauris* from the Malay Peninsula and *M. laurinae* from Sumatra.

[Named in honour of Monsieur Cunhac, resident of Dalat at the time of my visit.—C. B. K.]

157. *Pnoepyga pusilla annamensis*, subsp. nov.

A form heavily squamated below as in *P. p. lepida* (Salvad.) from Sumatra and *P. p. harterti* Robinson & Kloss (Journ. Fed. Malay States Mus. viii. pt. 2, 1918, p. 205) from the Federated Malay States, but differing from these in being duller, less rufous, this being specially noticeable on the sides of the head and nape. Sexes alike.

Types. ♂ & ♀ ad. Langbian Peaks, 6-7500 ft., S. Annam. 26 & 28 April, 1918.

"Iris dark; maxilla black, mandible brown, base fleshy; feet pale dull brown."

1 ♂. Arbre Broyé, 5400 ft., S. Annam. 15 May, 1918.

* Type of the subspecies.

1 ♂. Dalat, 5000 ft., S. Annam. 2 May, 1918.

7 ♂, 4 ♀. Langbian Peaks, 6-7500 ft., S. Annam. 15-28 April 1918.

Males. T. L. 97, 94, 95, 90, 92, 93, 95, 90*; W. 50, 52, 50, 52, 51, 52, 50, 51*; T. —; Ts. 19.5*; B. f. g. 15.5 mm.

Females. T. L. 90, 95, 92, 92*; W. 50, 51, 51, 50*; T. —; Ts. 19.5*; B. f. g. 16* mm.

158. *Geocichla citrina innotata* Blyth.

Geocichla innotata Robinson, Ibis, 1915, p. 752.

1 ♂. Dalat, 5000 ft., S. Annam. 5 May, 1918.

1 ♂. Langbian Peaks, 65-7500 ft., S. Annam. 28 April, 1918.

“Iris dark; maxilla black, gape dull yellow; mandible grey, tip black; feet fleshy, back of tarsi yellowish.”

T. L. 212, 212; W. 115, 117 mm.

159. *Cichloselys sibericus sibericus* (Pall.).

Hartert, Vög. paläarkt. Faun. i. 1910, p. 644.

1 ♂ ad. Dalat, 5000 ft., S. Annam. 7 April, 1918.

1 ♂ ad., 1 ♂ imm., 2 ♀. Langbian Peaks, 55-7500 ft., S. Annam. 19-25 April, 1918.

“Iris dark; maxilla black; mandible black, yellow at base; feet yellow to dull ochreous.”

Males. T. L. 233, 230, 240; W. 120, 119, 116 mm.

Females. T. L. 242, 237; W. 121, 116 mm.

These specimens are not *C. s. davisoni*, which breeds in Japan and winters in Burma, Tenasserim, Malay Peninsula, and Sumatra (cf. Robinson & Kloss, Journ. Fed. Malay States Mus. viii. pt. 2, 1918, p. 208), whereas the present bird winters in Java.

160. *Oreocincla aureus angustirostris* Gyldenstolpe.

Turdus aureus angustirostris Gyldenstolpe, Orn. Monatsb. xvi. 1916, p. 29; id. Kungl. Sv. Vet.-Akad. Handl. lvi. no. 2, 1916, p. 47.

* Types of the subspecies.

2 ♂, 3 ♀. Dalat, 5000 ft., S. Annam. 12 April–2 May, 1918.

1 ♀. Langbian Peaks, 6500 ft., S. Annam. 26 April, 1918.

“Iris dark ; maxilla blackish brown ; mandible greyish brown, sometimes partly fleshy ; feet dull fleshy, sometimes tinged with yellow.”

Males. T. L. 276, 280 ; W. 145, 146 ; T. 107, 109 mm.

Females. T. L. 278, 270, 277, 277 ; W. 145, 139, 142, 146 ; T. 110, 102, 108, 110 mm.

This series agrees with Gyldenstolpe's diagnosis of the bird from northern Siam, except that the general colour is not paler than in a recently collected toptotypical series of *O. a. aureus* Horsfield from Java. The tail is of fourteen feathers and the second primary between the fifth and sixth in length in all cases. In only two birds is the fourth primary longest, three having the third longest and one having the third equal to the fourth. In six adult Javan birds five have the fourth longest and one has the fourth equal to the third.

We have placed our series under Gyldenstolpe's name, but we have grave doubts if the subspecies has any real existence.

161. *Zoothera marginata* Blyth.

Robinson, Ibis, 1915, p. 751.

1 ♂, 1 ♀. Dalat, 5000 ft., S. Annam. 12 April–4 May, 1918.

1 ♂. Langbian Peaks, 55–7500 ft., S. Annam. 25 April, 1918.

“Iris dark ; bill blackish brown ; feet dark fleshy brown.”

Males. T. L. 235, 235 ; W. 123, 120 mm.

Female. T. L. 220 ; W. 119 mm.

The female, possibly a young bird, has the mantle more washed with rufous and the pale spots to the ends of the primary coverts more marked.

162. *Turdus obscurus* (Gm.).*Turdus obscurus* Robinson, Ibis, 1915, p. 753.

1 ♂. Dalat, 5000 ft., S. Annam. 7 April, 1918.

1 ♂ vix ad. Langbian Peaks, 55-7500 ft., S. Annam.
April 1918.

“Iris brown; maxilla black, sides at base yellow; mandible yellow, tip black; feet ochreous, washed with brown.”

T. L. 238, —; W. 124, 122 mm.

163. *Monticola solitarius philippensis* (P. L. S. Müll.).

Robinson, Ibis, 1915, p. 752; Kloss, Ibis, 1918, p. 209.

1 ♀ subad. Daban, 650 ft., S. Annam. 25 March, 1918.

1 ♂ subad. Dran, 3000 ft., S. Annam. 31 March, 1918.

“Iris dark, bill and feet black.”

Male. T. L. 225; W. 122 mm.*Female*. T. L. 230; W. 122 mm.

With less chestnut than the specimens from south-eastern Siam recorded above (Ibis, 1915, p. 752).

164. *Monticola gularis* (Swinh.).

Robinson, Ibis, 1915, p. 752.

3 ♂, 1 ♀. Daban, 650 ft., S. Annam. 15-26 March, 1918.

“Iris dark; maxilla blackish; mandible blackish, base fleshy or yellowish horny, gape yellowish; feet fleshy brown.”

Males. T. L. 180, 180, 189; W. 95, 99, 99 mm.*Female*. T. L. 188; W. 99 mm.165. *Henicurus guttatus* (Vig.).

Sharpe, Cat. Birds Brit. Mus. vii. 1883, p. 316.

3 ♂ ad., 1 ♂ juv. Dran, 3000 ft., S. Annam. 29 March-9 May, 1918.

1 ♂, 3 ♀. Dalat, 5000 ft., S. Annam. 8 April-3 May, 1918.

3 ♂, 1 ♀, 1 ♀ imm. Langbian Peaks, 55-7000 ft., S. Annam. 19 April-7 May, 1918.

“Iris dark, bill black, feet pale fleshy.”

Males. T. L. 275, 277, 275, 275, 280, 285, 285 ; W. 108, 104, 108, 106, 110, 108, 110 mm.

Females. T. L. 263, 260, 270, 270 ; W. 100, 102, 100, 102 mm.

Adult females differ slightly from adult males in having a tinge of sooty brown on the occiput and nape. An immature female, presumably of this species, has the head and mantle dull black washed with brown without any white cap, nape-band and spots on breast blackish brown, the upper abdomen with the feathers edged and tipped with dusky.

A juvenile male has the head and mantle uniform blackish grey without white; chin, breast, and anterior abdomen white, tipped and edged with dusky, the breast with a faint buff tinge; middle of abdomen and lower tail-coverts uniform white. This specimen is almost indistinguishable from *H. schistaceus* in a similar stage.

166. *Larvivora cyanea* (Pall.).

Kloss, Ibis, 1918, p. 209.

1 ♂. Daban, 650 ft., S. Annam. 17 March, 1918.

“ Iris dark; maxilla blackish brown, mandible fleshy; feet pale fleshy.”

T. L. 138; W. 72 mm.

167. *Notodela leucura* (Hodgs.).

Ingram, Nov. Zool. xix. 1914, p. 296; Kuroda, Annot.

Zool. Japon. ix. 1917, p. 240.

1 ♂. Dran, 3000 ft., S. Annam. 1 April, 1918.

1 ♂. Dalat, 5000 ft., S. Annam. 8 April, 1918.

2 ♂. Arbres Broyés, 5400 ft., S. Annam. 15 May, 1918.

4 ♂, 3 ♀. Langbian Peaks, 55–7500 ft., S. Annam. 16–22 April, 1918.

“ Iris dark, bill and feet black, females' feet brown.”

Males. T. L. 181, 190, 195, 192, 170, 186, 172, 195; W. 93, 96, 97, 95, 91, 91, 90, 95 mm.

Females. T. L. 172, 175, 166; W. 89, 87, 85 mm.

The male from Dran and three other males and a female

show faint remains of the immature plumage on the wing-coverts.

168. *Copsychus saularis musicus* (Raffles).

Robinson, Ibis, 1915, p. 754; Kloss, Ibis, 1918, pp. 210, 211.

2 ♂, 1 ♀. Tour Cham, Phanrang, S. Annam. 22–23 May, 1918.

Males. T. L. 210, 204; W. 99, 96 mm.

Female. T. L. 190; W. 91 mm.

Quite intermediate in the character of the axillaries and under wing-coverts between Sumatran and Indian birds.

169. *Kittacincla macrurus macrurus* (Gm.).

Robinson, Ibis, 1915, p. 753; Kloss, Ibis, 1918, p. 210.

3 ♂, 1 ♀. Daban, 650 ft., S. Annam. 14–20 March, 1918.

“Iris dark, bill black, feet fleshy.”

Males. T. L. 280, 275, 222; W. 94, 92, 88 mm.

Female. T. L. 217; W. 83.

These birds appear to be intermediate in size between the form from the Malay Peninsula and that from Hainan—*K. macrurus minor* (Swinh.). One specimen has the primaries edged with rufous ashy as in that form, but the tail is not developed to its full length and the bird is probably immature. All the specimens have relatively much less white in the four outer pairs of tail-feathers and the tail decidedly shorter than in the Malay Peninsula form. Possibly the Annam birds are identical with the true *K. m. macrurus*, of which the type-locality is the adjacent island of Pulau Condor, in which case the Malayan bird will require a new name.

170. *Oreicola ferrea* (Gray).

Kuroda, Annot. Zool. Japon. ix. 1917, p. 241.

1 ♂. Arbre Broyé, 5400 ft., S. Annam. 13 May, 1918.

3 ♂. Le Bosquet, 5000 ft., S. Annam. 7 May, 1918.

5 ♂, 5 ♀. Dalat, 5000 ft., S. Annam. 4 April–3 May, 1918.

Male. "Iris dark, bill and feet black."

Female. "Iris dark, bill black, feet dark brown."

Males. T. L. 140, 152, 150, 155, 146, 146, 145, 148, 144 ; W. 68, 68, 65, 70, 69, 68, 66, 66, 67 ; T. 69, 71, 70, 72, 70, 70, 65 (worn), 67, 67 mm.

Females. T. L. 153, 140, 145, 144, 155 ; W. 66, 63, 68, 65, 66 ; T. 69, 65, 67, 70, 70.

From their locality it might have been expected that this series would have been referable to the eastern form of the species, *O. f. haringtoni* (Hartert, Vög. paläarkt. Fauna, i. 1910, p. 711), described from Foochow and differing only from the western typical race in the shorter tail; 57–61.5 mm. against 63–68 mm. From the dimensions given above it will be seen that this is not the case. Kuroda (*loc. cit. supra*) records both forms from Tonkin shot within two or three days of each other!

171. *Cochoa viridis* Hodgs.

1 ♂, 1 ♀. Langbian Peaks, 7000 ft., S. Annam. 22 April, 1918.

"Iris dark, bill black, feet dark brown, soles dark fleshy."

Male. T. L. 272 ; W. 135 mm.

Female. T. L. 277 ; W. 137 mm.

172. *Calliope calliope* (Pall.).

Luscinia calliope Hartert, Vög. paläarkt. Faun. i. 1910, p. 738.

1 ♂. Dran, 3000 ft., S. Annam. 30 March, 1918.

"Iris dark ; maxilla brown, mandible horny brown ; feet fleshy brown."

T. L. 160 ; W. 73 mm.

173. *Locustella lanceolata* (Temm.).

Hartert, Vög. paläarkt. Faun. i. 1910, p. 553.

1 ♂. Dalat, 5000 ft., S. Annam. April 1918.

1 ♂. Langbian Peaks, 5500–6500 ft., S. Annam. 26 April, 1918.

"Iris dark ; maxilla blackish brown, mandible whitish fleshy ; feet deep fleshy."

T. L. 132, 130 ; W. 52, 53 mm.

174. *Orthotomus atrigularis* (Temm.).

Orthotomus atrigularis nitidus Kloss, Ibis, 1918, p. 210.

2 ♂, 1 ♀. Daban, 650 ft., S. Annam. 16-25 March, 1918.

1 ♀. Trang Bom, Cochin China. 3 June, 1918.

"Iris ochreous; maxilla brown, mandible fleshy; feet fleshy."

Males. T. L. 120, 122; W. 46, 46 mm.

Females. T. L. 113, 104; W. 43, 44 mm.

These specimens agree in their bright green upper parts with the majority of specimens of the Malay Peninsula from Koh Samui to Selangor, within which region, however, dark-coloured birds also occur. Comparison is needed with the true *O. atrigularis* from Borneo.

175. *Sutoria sutoria maculicollis* (Moore).

P. Z. S. 1854, p. 79.

1 ♂. Daban, 650 ft., S. Annam. 20 March, 1918.

"Iris ochreous; maxilla horny brown, mandible fleshy; feet yellowish fleshy."

T. L. 131; W. 45 mm.

This specimen agrees well with typical specimens of *S. s. maculicollis* from the Malay Peninsula, having the ear-coverts distinctly streaked. The form from eastern Siam is certainly true *S. s. sutoria* (Moore) with these parts quite uniform.

176. *Lusciniola luteiventris* (Hodgs.).

Hartert, Vög. paläarkt. Faun. i. 1910, p. 541.

1 ♀. Dalat, 5000 ft., S. Annam. 3 May, 1918.

"Iris brown; maxilla black, mandible brownish grey; feet brownish grey."

T. L. 140; W. 51; T. 67 mm.

The specimen is moulting and in poor condition; there are a few black spots on the sides of the breast, and our identification is therefore open to some doubt. The supercilium is white, tolerably distinct, not extending behind the eye; otherwise the bird agrees fairly well with the description of *Cettia russula* (H. H. Slater, Ibis, 1897, p. 171) from Kuatun, which Hartert (*loc. cit*) has identified with the

above form. The tail, however, seems to be somewhat long. We have compared our specimen with the type of *Tribura thoracica*, from which it differs in having the throat with fewer markings. It most nearly agrees with the bird described by Brooks as *Dumeticola mandelli* ('Stray Feathers,' iii. 1875, p. 284) in regard to the scanty throat-spots and dark mandibles; but we have followed Hartert (*l. c. s.*) in regarding this as synonymous with *L. luteiventris*.

177. *Lusciniola tacsanowskia* (Swinh.).

Hartert, Vög. paläarkt. Faun. i. 1910, p. 542.

Tribura intermedia Oates, Faun. Brit. Ind., Birds, ii. 1889, p. 363.

1 ♂. Dalat, 5000 ft., S. Annam. 5 May, 1918.

"Iris dark; maxilla blackish, mandible fleshy; feet pale fleshy."

T. L. 140; W. 55; T. 58 mm.

178. *Franklinia rufescens* Blyth.

Franklinia rufescens poliocephala Gyldenstolpe (nec H. Anderson), Kungl. Sv. Vet.-Akad. Handl. lvi. no. 2, 1916, p. 44.

2 ♂, 2 ♀. Daban, 650 ft., S. Annam. 25-26 March, 1918.

1 ♂ ad., 1 ♂ imm., 3 ♀. Dran, 3000 ft., S. Annam. 16-18 May, 1918.

"Iris crimson, yellow or ochre-brown; bill black; feet fleshy."

Males. T. L. 125, 127, 116; W. 45, 45, 49 mm.

Females. T. L. 114, 106, 110, 113, 115; W. 44, 42, 41, 43, 43 mm.

All the adult specimens are in breeding-plumage, with a blackish tail and practically no trace of yellowish on the under surface. The young male is slightly yellow beneath, and has a marked cinereous band across the breast, no white superciliary stripe, and but little rufous on the wings and back. It has a double-ringed iris of yellow and hazel, and the feet are brownish ochreous instead of fleshy.

179. *Arundinax aëdon* (Pall.).

Phragmaticola aëdon Hartert, Vög. paläarkt. Faun. i. 1910, p. 554.

1 ♂. Daban, 650 ft., S. Annam. 17 March, 1918.

1 ♂. Dran, 3000 ft., S. Annam. 10 May, 1918.

"Iris brown; maxilla horny brown, mandible fleshy; feet brownish plumbeous or dull pale brown."

T. L. 188, 182; W. 87, 85 mm.

180. *Acanthopneuste trochiloides* (Sundev.).

Phylloscopus trochiloides (Sundev.); Hartert, Vög. paläarkt. Faun. 1910, p. 522.

4 ♂, 1 ♀. Dalat, 5000 ft., S. Annam. 12 April–3 May, 1918.

9 ♂, 3 ♀. Langbian Peaks, 6000–7500 ft., S. Annam. 16–21 April, 1918.

"Iris dark; maxilla blackish, mandible ochreous; feet yellowish to dull brownish or yellowish green, tarsi sometimes plumbeous."

Males. T. L. 106, 104, 107, 105, 115, 108, 112, 112, 115, 117, —, 115, 115; W. 54, 52, 50, 51, 59, 54, 59, 52, 59, 56, 59, 60, 58 mm.

Females. T. L. 102, 110, 106, 102; W. 50, 55, 52, 49 mm.

The smaller birds appear to be young. They are much suffused with yellow below, and above are of a brighter yellower green; the second primary is shorter than the sixth.

181. *Acanthopneuste nitidus plumbeitarsus* (Swinh.).

Phylloscopus nitidus plumbeitarsus (Swinh.); Hartert, Vög. paläarkt. Faun. i. 1910, p. 511.

3 ♂, 2 ♀. Daban, 650 ft., S. Annam. 18–26 March, 1918.

1 ♂, 4 ♀. Dalat, 5000 ft., S. Annam. 6–10 April, 1918.

"Iris dark; maxilla brown; mandible distally brown, basally yellow; feet varying from greenish yellow to olive-brown and dark brown."

Males. T. L. 112, 108, 108, 104; W. 56, 55, 56, 55 mm.

Females. T. L. 113, 108, 102, 104, 106, 103; W. 59, 55, 58, 54, 55, 53 mm.

182. *Suya crinigera cooki* Harington.

Bull. Brit. Orn. Club, xxxi. 1913, p. 109.

3 ♂, 3 ♀. Dran, 3000 ft., S. Annam. 29 March–17 May, 1918.

Male (March). "Iris ochreous; maxilla and mandible black, base grey; feet fleshy."

Female (March). "Maxilla horny; mandible fleshy, grey below; feet pale fleshy."

Males. T. L. 178, 165, 160; W. 59, 57, 55; T. 88, 87, 85; Ts. 22.5, 22.5, 22 mm.

Females. T. L. 145, 145, 150; W. 52, 50, 51; T. 72, 73, 73; Ts. 21, 21, 21.5 mm.

The males of this series seem to be decidedly larger birds with longer tails than the females, the difference being especially noticeable in the bills, which also have the maxilla entirely black.

We have referred them to *S. c. cooki*, described from Upper Burma and occurring in the southern Shan States, which differs from the typical form, as do these birds, in the uniform under surface with the black base of the feathers not visible normally. The head is very distinctly striped in all the specimens, the rest of the upper surface much less so; properly speaking, there is no supercilium, but the anterior lores are pale.

183. *Suya superciliaris* Anderson.

Anderson, Anat. & Zool. Res. 1878, p. 642, pl. li.

5 ♂, 3 ♀, 1?. Dalat, 5000 ft., S. Annam. 6 April–5 May, 1918.

1 ♂. Arbre Broyé, 5400 ft., S. Annam. 12 May, 1918.

1 ♂. Langbian Peaks, 6000 ft., S. Annam. 27 April, 1918.

"Iris ochreous, maxilla brown, mandible fleshy, feet fleshy."

Males. T. L. 200, 197, 185, 183, 170, 200, 185; W. 50, 52, 50, 50, 49, 51, 51; T. 124, 117, 109, 105, 92, 120, 114 mm.

Females. T. L. 178, 170, 188; W. 48, 48, 48; T. 105, 105, 112 mm.

These specimens agree fairly well with Anderson's figure, except that the supercilium is very much narrower with no tinge of buff.

184. *Lanius collurioides* Less.

Oustalet, p. 23; Kloss, Ibis, 1918, p. 214.

5 ♂, 2 ♀, 1 pull. Dran, 3000 ft., S. Annam. 30 March—18 May, 1918.

2 ♂. Dalat, 5000 ft., S. Annam. 6–12 April, 1918.

“Iris dark, bill and feet black.”

Males. T. L. 175, 202, 296, 197, 197, 195, 193; W. 86, 87, 89, 87, 85, 87, 86 mm.

Females. T. L. 188, 188; W. 85, 84 mm.

All these specimens are practically adult, and none show any sign of white on the forehead or lores. Slightly younger birds have the head deep iron-grey, paler on the nape, not glossy black, and the mantle and rump less deep maroon. The speculum is very variable in extent. The whole series is pure white beneath.

185. *Tephrodornis pelvicus* (Hodgs.).

Oustalet, p. 22.

3 ♂, 4 ♀. Daban, 650 ft., S. Annam. 20–23 March, 1918.

6 ♂, 1 ♂ juv., 2 ♀. Dran, 3000 ft., S. Annam. 13 March—17 May, 1918.

“Iris, inner ring yellow, outer reddish or hazel; bill black; feet plumbeous to greenish black.”

Males. T. L. 218, 208, 205, 210, 205, —, —, 211, 207; W. 114, 114, 111, 117, 117, 110 (imm.), 108, 114, 118 mm.

Females. T. L. 210, 210, 207, 205, 224, 207; W. 116, 117, 110, 113, 115, 113 mm.

These specimens are distinctly larger than the form from the north of the Malay Peninsula, which we have described as *T. p. annectens*, differing from eastern Sumatran and southern Malayan birds, *T. p. sordida* Stoliczka, in their larger size and less grey coloration in the mantle and back.

From the Hainan bird, *T. p. hainanus* Grant, they appear to differ in the absence of all rufous brown in the back and wings.

186. *Tephrodornis pondicerianus* (Gm.).

Oustalet, p. 26.

2 ♂, 1 ♀. Tour Cham, Phanrang, S. Annam. 20-23 May, 1918.

"Iris brown; maxilla blackish brown; mandible brown distally, grey at base; feet dark greyish brown."

Males. T. L. 165, 160; W. 83, 86 mm.

Female. T. L. 158; W. 84 mm.

187. *Hemipus picatus* (Sykes).

Hemipus capitalis Oustalet, p. 50 (partim).

Hemipus picatus Kloss, Ibis, 1918, p. 213.

1 ♀. Dran, 3000 ft., S. Annam. 18 May, 1918.

2 ♂, 1 ♂ imm., 6 ♀. Daban, 650 ft., S. Annam. 14-26 March, 1913.

Males. T. L. 136, 142, 145; W. 61, 63, 62 mm.

Females. T. L. 140, 158, 144, 145, 145, 144; W. 61, 61, 63, 60, 62, 65 mm.

188. *Corvus macrorhynchus* Wagl.

Robinson, Ibis, 1915, p. 761; Kloss, Ibis, 1918, p. 230.

1 ♀ mm. Tour Cham, Phanrang. 23 May, 1918.

1 ♀. Daban, 650 ft., S. Annam. 22 March, 1918.

"Iris dark, bill and feet black."

T. L. 450, 500; W. 295, 325 mm.

Agreeing with Cambodian specimens in having the throat-hackles very poorly developed. The existing material in our hands is at present not sufficient to discriminate the various races of Indo-Malayan Crows, excluding, of course, the well-marked *enca* (*compiler* Richm.) group.

189. *Garrulus leucotis* Hume.

Sharpe, Cat. Birds Brit. Mus. iii. 1877, p. 99, pl. iv.; Gyldenstolpe, Kungl. Sv. Vet.-Akad. Handl. lvi. no. 2, 1916, p. 19.

2 ♂, 1 ♀. Daban, 650 ft., S. Annam. 17-27 March, 1918.

4 ♂. Dran, 3000 ft., S. Annam. 30 March-11 May, 1918.

1 ♂ imm. Le Bosquet, 5000 ft., S. Annam. 7 May, 1918.

2 ♂, 1 ♂ imm., 3 ♀, 2 ♀ imm. Dalat, 5000 ft., S. Annam. 10 April-5 May, 1918.

"Iris dark, bill blackish, feet brownish fleshy."

Males. T. L. 325, 330, 320, 316, 315, 325, 321, 300; W. 171, 173, 170, 171, 170, 170, 174, 170 mm.

Females. T. L. 310, 318, 322, 330; W. 165, 166, 172, 165 mm.

Immature birds differ from the adults in having a less extent of white on the forehead with the black stripes less conspicuous.

190. *Cissa hypoleuca* Gigl. & Salvad.

Atti Accad. Torino, xx. 1885, p. 427.

Cissa gabriellæ Ogilvie-Grant, Bull. Brit. Orn. Club, xix. 1906, p. 12.

1 ♂, 1 ♀. Trang Bom, Cochin China. 3-6 June, 1918.

Male. T. L. 315; W. 155; T. 157 mm.

Female. T. L. 315; W. 149; T. 114 mm.

Mr. Grant, in describing *C. gabriellæ*, has evidently overlooked the bird from Cochin China described by Salvadori and Giglioli (in an unusual publication for Oriental birds), of which the above specimens are practically topotypes.

191. *Cissa margaritæ*, sp. nov. (Plate XVII.)

Differs from all known species of the genus in having the whole of the head above the black auricular area rich golden-yellow (brighter than light cadmium, Ridgway), much brighter and deeper than in the under surface of *C. hypoleuca*. Longest feathers of the crest and of the forehead faintly tinged with green. Secondaries with subterminal black bars and greenish-white tips decreasing towards the outer ones. Longest tail-feathers tipped with greenish-white, the others with dirty yellowish-white.



CISSA MARGARITÆ.

Under surface uniform apple-green (very slightly tinged with yellow on the breast and sides of neck and head in life).

Types. ♂ ♀. Langbian Peaks, 6500 ft., S. Annam. 21-22 April, 1918.

Male. T. L. 405 ; W. 145 ; T. 213 ; Ts. 42 ; B. f. g. 39 mm.

Female. T. L. 396 ; W. 142 ; T. 220 ; Ts. 42 ; B. f. g. 37 mm.

"Iris crimson, edge of eyelid crimson, bill and feet blood-red."

1 ♂, 1 ♂ juv., 2 ♀, 1 ♀ vix ad., 1 ♀ juv. Langbian Peaks, 6-7500 ft., S. Annam. 21-28 April, 1918.

Male. T. L. 405 ; W. 145 mm.

Females. T. L. 396, 335, 375 ; W. 142, 143, 140 mm.

Juvenile birds have the abdomen almost white, faintly washed with green ; the crown pale yellow mixed with streaks of apple-green. "Iris dark, bill pale dull brown, tip and gape orange, feet deep orange washed brown."

As we have found it necessary to reduce *Cissa gabriellæ* to a synonym of *Cissa hypoleuca*, it gives us much pleasure to be able to name this far more beautiful Hunting-Crow after Mrs. G. M. Vassal, who seems to have been the first collector of any zoological specimens on the Langbian Plateau.

192. *Urocissa occipitalis magnirostris* Blyth.

Kloss, Ibis, 1918, p. 230.

1 ♂. Djiring, 3000 ft., S. Annam. 10 April, 1918.

"Iris brown, bill deep blood-red, feet scaling-wax red."

T. L. 555 ; W. 182 (worn).

193. *Crypsirhina varians* (Lath.).

Kuroda, Annot. Zool. Japon. ix. 1917, p. 248 ; Kloss, Ibis, 1918, p. 233.

3 ♂, 4 ♀. Tour Cham, Phanrang, S. Annam. 20-22 May, 1918.

"Iris sky-blue, bill and feet black."

Males. T. L. 322, 320, 305 ; W. 118, 117, 117 mm.

Females. T. L. 325, 306, (imm.) 300, 255 ; W. 113, 109, (imm.) 115, 112 mm.

194. *Parus monticolus* (Vig.).

4 ♂, 2 ♀. Dran, 3000 ft., S. Annam. 31 March–18 May, 1918.

1 ♀. Arbre Broyé, 5200 ft., S. Annam. 1 May, 1918.

3 ♂, 2 ♀, 1 ♀ imm. Dalat, 5000 ft., S. Annam. 6–9 April, 1918.

“Iris dark, bill black, feet dull plumbeous.”

Males. T. L. 132, 135, 137, 126, 132, 138; W. 67, 66, 65, 66, 69, 65, 65 mm.

Females. T. L. 130, 144, 136, 135, 133, 130; W. 65, 67, 66, 65, 65, 65.

195. *Machlolophus spilonotus* (Blyth).

1 ♂ ad., 1 ♀ imm. Dalat, 5000 ft., S. Annam. 5–12 April, 1918.

2 ♂ ad., 1 ♂ imm., 1 ♀ ad., 4 ♀ imm. Langbian Peaks, 55–7500 ft., S. Annam. 16–26 April, 1918.

“Iris dark, bill black, feet plumbeous.”

Males. T. L. 145, 142, 145, 138; W. 80, 76, 78, 73 mm.

Females. T. L. 137, 156, 138, 137, 147, 135; W. 75, 80, 73, 74, 79, 71 mm.

196. *Ægithaliscus annamensis*, sp. nov.

Differs from *Æ. pulchellus* Rippon* from the southern Shan States in having the crown a grey-, not ochreous-brown, and in the presence of white feathers on the postocular region.

Adult male. Forehead dirty white, middle of crown to nape grey tinged with drab; a broad black stripe starting from the lores on each side of the head, including the ocular region and ear-coverts, and converging on the nape; feathers behind the eye and above the ear-coverts flecked with white forming an ill-defined postocular stripe; posterior margin of ear-coverts blackish brown; centre of the throat glossy black surrounded by a conspicuous pure white border starting from the chin and broadening on the upper breast to form a collar, which is succeeded by another greyish-drab band narrowest in the centre and somewhat flushed with pink;

* Bull. B. O. C. xi. 1910, p. 11; Ibis, 1901, p. 528, pl. xi. fig. 2.

centre of abdomen white, flanks pinkish salmon-buff; thighs greyish-buff; under tail-coverts greyish-white. Mantle and back slate, slightly washed with drab; primaries fuscous edged externally with silver-grey, except the outermost, and narrowly margined with whitish internally; under wing-coverts and axillaries white. Tail brownish black edged with grey especially near the base, the outermost pair of feathers white on the outer web with a large white patch in the extremity of the inner webs; next two pairs with much smaller areas of white, the third outer dusky on the outer webs.

“Iris pale lemon, bill black, feet ochreous, claws black.”

Female. Similar to male.

Immature male and female. Differ from the adult in having the black throat-patch only indicated by dark bases to the feathers and by the absence of the pinkish flush on the flanks which are pale ochreous-buffy.

“Iris dull ochreous or ochreous-white, bill black, feet dull ochreous.”

1 ♂ ad., 1 ♂ imm., 2 ♀ ad., 2 ♀ imm. Dran, 3000 ft., S. Annam. 1 April–16 May, 1918.

1 ♂ ad., 1 ♀ imm. Dalat, 5000 ft., S. Annam. 8 April–3 May, 1918.

1 ♂ ad. Langbian Peaks, 6500 ft., S. Annam. 6 April, 1918.

1 ♂, 1 ♀ ad. (types of the species). Langbian Peaks, 6500 ft. 17 April, 1918.

Males. T. L. 114, 112, 115, 115; W. 49, 51, 50, 51*; T. 52·5, 53·5, 55, 53*; Ts. 16, 15, 16·5, 16·5* mm.

Females. T. L. 108, 112, 112*; W. 50, 50, 52*; T. 51, 51, 52*; Ts. 15·5, 16·5, 15* mm.

Found flying about trees in small flocks.

197. *Sylviparus modestus* Burton.

P. Z. S. 1835, p. 154.

4 ♂, 3 ♀. Langbian Peaks, 6000–7500 ft., S. Annam. 17–22 April, 1918.

* Types of the species.

“Iris dark ; maxilla blackish, mandible dull plumbeous ; feet plumbeous.”

Males. T. L. 98, 95, 95, 94 ; W. 60, 61, 56, 56 mm.

Females. T. L. 99, 93, 92 ; M. 59, 56, 55 mm.

There have been five distinct races of this Tit described, namely :—

1. *Sylviparus modestus modestus* Burton, P.Z. S. 1835, p. 154. “Himalayan Mountains” (Gharwal to Sikkim).

2. *Sylviparus modestus sericophrys* “Hodgs.” ; Blyth, Journ. Asiat. Soc. Bengal, xiii. 1844, p. 942. Nepal.

3. *Sylviparus modestus saturator* Rippon, Bull. Brit. Orn. Club, xvi. 1906, p. 87. Mt. Victoria, S. Chin Hills, Burma.

4. *Sylviparus modestus occultus* Thayer & Bangs, Mem. Mus. Comp. Zoöl. Cambridge, Mass. xl. 1912, p. 185. Szechuan, W. China.

5. *Sylviparus modestus simlaensis* Stuart Baker, Bull. Brit. Orn. Club, xxxviii. 1917, p. 8. Simla, N.W. Himalayas.

We have compared our series with two birds from Sikkim and Nepal, which are certainly typical of the second of these races and probably of the first, but these specimens are not in first-rate condition. We can, however, detect no material differences, and for the present, therefore, we leave the Annam series without a subspecific name.

198. *Sitta nagaensis* Godwin-Austen.

P.Z. S. 1874, p. 44.

3 ♂, 1 ♀. Dran, 3000 ft., S. Annam. 1 April–18 May, 1918.

3 ♂, 1 ♀. Dalat, 5000 ft., S. Annam. 6–7 April, 1918.

1 ♂. Langbian Peaks, 55–7500 ft., S. Annam. 18 April, 1918.

“Iris dark ; maxilla black, mandible grey, tipped black ; feet dark brown or leaden.”

Males. T. L. 132, 128, 130, 130, 132, 134 ; W. 74, 71, 75, 79, 74 (imperfect), 80 mm.

Females. T. L. 126, 130, 130 ; W. 75, 69, 75 mm.

Four of the series have the flanks only cinnamoneous and the under tail-coverts white, edged with the same colour, but in the others these areas are a deep chestnut or cinnamon-rufous. These latter colours occur in five of the males. There is occasionally a slight wash of dull buffy on the underparts. The under tail-coverts seem to be less completely bordered with rufous than in topotypes examined, but the diminution may be due to wear.

199. *Dendrophila frontalis* (Horsf.).

Oustalet, p. 7.

3 ♂, 1 ♀. Daban, 650 ft., S. Annam. 15-24 March, 1918.

1 ♂. Dalat, 5000 ft., S. Annam. 6 April, 1918.

"Iris lemon-yellow; bill deep blood-red, tip sometimes black, in immature birds yellow tipped black; feet dark brown."

Males. T. L. 130, 135, 122; W. 80, 75, 73, 78 mm.

Female. T. L. 122; W. 73 mm.

200. *Certhia discolor meridionalis*, subsp. nov. (Plate XVI. fig. 3.)

A very distinct form of *Certhia discolor* Blyth (topotypes examined). Throat and breast dark grey with a faint earthy tinge, belly paler and purer grey, upper flanks almost whitish; tail uniform dark brownish-rufous, the feathers brighter on the outer webs, shafts clear brownish-orange; upper tail-coverts rufous, under tail-coverts paler.

Types. ♂ ♀ ad. Langbian Peaks, 6-7500 ft., S. Annam. 8 April, 1918.

Male. T. L. 156; W. 67; T. 79; B. f. g. 20; Ts. 16.5 mm.

Female. T. L. 156; W. 69; T. 83; B. f. g. 20; Ts. 16.5 mm.

"Iris dark; bill black-brown, base of lower mandible fleshy; feet dull flesh-brown."

6 ♂, 3 ♀. Dalat, 5000 ft., S. Annam. 8 April-3 May 1918.

5 ♂, 4 ♀. Langbian Peaks, 55-7500 ft., S. Annam. 18-27 April, 1918.

Males. T. L. 163 (imm.), 163, 158, 160, 197, 155 (vix ad.), 156, 161, 163, 163, 154 (imm.); W. 70 (imm.), 70, 71, 71, 70, 67 (vix ad.), 67, 68, 70, 68, 66 (imm.) mm.

Females. T. L. 160, 162 (vix ad.), 156, 166, 162, 157; W. 68, 70, 67 (imm.), 69, 71, 68, 67 mm.

A very distinct form, separable from all others with unbarred tails.

201. *Buchanga leucophæa mouhoti* (Wald.).

Buchanga mouhoti Walden, Ann. Mag. Nat. Hist. (4) v. 1870, p. 220.

Buchanga leucophæa Oust. p. 32; Kloss, Ibis, 1918, p. 227.

Buchanga cineracea mouhoti Robinson, Ibis, 1915, p. 759.

1 ♂, 1 ♀. Daban, 650 ft., S. Annam. 20–24 March, 1918.

7 ♂ ad., 1 ♂ imm., 5 ♀. Dran, 3000 ft., S. Annam. 29 March–18 May, 1918.

1 ♀. Le Bosquet, 5200 ft., S. Annam. 7 May, 1918.

2 ♂, 1 ♀. Dalat, 5000 ft., S. Annam. 10 April–2 May, 1918.

“Iris crimson, bill and feet black.”

Unworn specimens:—

Males. T. L. 263, 265, 273, 277, 265, 266, 275, 265; W. 131, 136, 139, 133, 134, 136, 136, 134; Tail (length of outer feather) 140, 139, 142, 144, 138, 140, 150, 140 mm.

Females. T. L. 255, 255, 255, 262; W. 125, 130, 133, 131; Tail (length of outer feather) 127, 135, 135, 134 mm.

Though there is no perceptible difference in colour between this series and a large series of the typical *B. leucophæa* from Java, the tails of the mainland birds are consistently longer, and Walden's name, *B. l. mouhoti*, type from Cambodia, may therefore be retained for them.

202. *Buchanga atra cathœca* Swinh.

Buchanga atra Oustalet, p. 29.

3 ♂, 2 ♀. Tour Cham, Phanrang, S. Annam. 20–23 May, 1918.

“Iris crimson or brown, bill and feet black.”

Males. T. L. 311, 285, 275; W. 141, 135, 138; T. 172, 161, — mm.

Females. T. L. 280, 275; W. 131, 130; T. 146, 150 mm.

We refer this series to *B. a. cathæca*, as they have the decided bronze tinge given by Swinhoe as one of the characters of his type-series; they have, however, a shorter wing and a longer tail than indicated by him. From Dr. Hartert's statements the Hainan form must be a different race, as he assigns to it a shorter wing and tail than the Indian races (Nov. Zool. xvii. p. 249).

203. *Chibia hottentota* (Linn.).

Oustalet, p. 27; Kloss, Ibis, 1918, p. 226.

5 ♂, 2 ♀. Daban, 650 ft., S. Annam. 16-27 March, 1918.

"Iris dark, bill and feet black."

Males. T. L. 320, 310, 315, 318, 325; W. 160, 160, 156, 161, 165 mm.

Females. T. L. 295, 308; W. 158, 157 mm.

204. *Chaptia ænea malayensis* (H. Hay).

Chaptia malayensis Oustalet, p. 28.

2 ♂, 1 ♂ imm., 1 ♀, 1 ♀ imm. Trang Bom, Cochin China. 3-4 June, 1918.

2 ♂, 2 ♀. Daban, 650 ft., S. Annam. 16-26 March, 1918.

1 ♂. Dran, 3000 ft., S. Annam. 18 May, 1918.

"Iris dark, in one specimen red; bill and feet black."

Males. T. L. 234, 230, 210 (imm.), 235, 240, 230; W. 124, 121, 112 (imm.), 120, 122, 122 mm.

Females. T. L. 220, 210 (imm.), 243, 235; W. 118, 113, (imm.), 118, 120 mm.

205. *Bhringa remifer peracensis* (Baker).

Bhringa remifer Oustalet, p. 34; Robinson, Ibis, 1915, p. 69.

Bhringa remifer peracensis Stuart-Baker, Bull. Brit. Orn. Club, xxxix. 1918, p. 18.

Bhringa remifer attenuata Robinson & Kloss, Journ. Fed. Malay States Mus. viii. pt. 2, 1918, p. 235.

2 ♂, 1 ♀. Dran, 3000 ft., S. Annam. 1 April–9 May, 1918.

3 ♂, 6 ♀. Dalat, 5000 ft., S. Annam. 4 April–5 May, 1918.

1 ♀. Arbre Broyé, 5400 ft., S. Annam. 11 May, 1918.

1 ♂. Langbian Peaks, 5500–6500 ft., S. Annam. 24 April, 1918.

“Iris crimson, bill and feet black.”

Males. T. L.* 260, 255, 270, 260, 260, 255; W. 134, 132, 132, 133, 128, 129 mm.

Females. T. L.* 265, 260, 255; W. 132, 132, 131, 134, 127, 132, 130, 132 mm.

These birds had better be assigned to the recently described *B. r. peracensis*. They differ constantly from a large series of the typical *Edolius remifer* Temm., of Java, with which they have been compared, in having the tail-rackets much longer and tapering gently towards the base, not abruptly terminated, though the difference is not so marked as in the typical Malay Peninsula birds. A single specimen from Darjiling, typical of *B. r. tectirostris* (Hodgs.), besides the very short broad tail-rackets, differs in a somewhat more robust bill.

206. *Dissemurus paradiseus paradiseus* (Linn.).

Oustalet, p. 35; Robinson, Ibis, 1915, p. 760; Kloss, Ibis, 1918, p. 218.

3 ♂, 2 ♀. Trang Bom, Cochin China. 31 May–5 June, 1918.

4 ♂, 1 ♀. Daban, 650 ft., S. Annam. 14–31 March, 1918.

“Iris crimson or brown, bill and feet black.”

Males. T. L.* 325, 355, 310, 333, —, —, —; W. 157, 161, 156, 155, 157, 151, 150 mm.

Females. T. L.* 310, —, —; W. 144, 148, 151 mm.

* To the end of the basal webs of the outer tail-feather.

The Cochin China birds have a smaller crest than those from Annam, and show an approach to the central Malayan race *D. p. malayensis* (Blyth).

207. *Oriolus melanocephalus* (Linn.).

Oriolus melanocephalus Oustalet, p. 41.

1 ♂. Trang Bom, Cochin China. 5 June, 1918.

1 ♂, 1 ♀. Tour Cham, Phanrang, S. Annam. 21 May, 1918.

2 ♂, 1 ♀. Daban, 650 ft., S. Annam. 20 March, 1918.

"Iris red, bill fleshy, feet dark dull plumbeous."

Males. T. L. 218, 230, 234, 230; W. 129, 137, 131, 137 mm.

Females. T. L. 220, 220; W. 131, 127 mm.

Hartert, Bull. Brit. Orn. Club, xxxviii. 1918, p. 63, has described the Indo-Chinese form of this Oriole (type from Koh Lak, S.W. Siam) as a new race under the name *O. luteolus thaiacous*, basing his differences on smaller size; wing average 133 against 133 minimum in the Indian form, which ranges up to 140: the tail is said to have at most the two outer feathers without bars across both webs, and this accords with a series of five adults from the type-locality (*Oriolus melanocephalus himalayanus* Kloss, Ibis, 1918, p. 225).

On the other hand, two adult birds from the islands of Langkawi and Lontar, west coast of Trang, Peninsular Siam, are typical *O. melanocephalus*, one having only patches of black on both webs of the fourth outer tail-feather, and the other on the inner webs of the third and fourth outer feathers. In the above series the Trang Bom bird has only a patch on the outer web of the outer feathers and spots on both webs of the fourth, the second and third being unbarred.

The Tour Cham bird has a patch on the outer web of the outer feather, small patches on both webs of the third feather, and the fourth barred; the female has the third feather entirely barred.

One of the Daban males has only a large patch on the

inner web of the fourth feather, and the other male small patches on both webs of the fourth feather. The female has the third feather barred and patches on the outer webs of the first and second.

It is evident therefore that the Malay Peninsula and Annam birds cannot in these characters be referred to Dr. Hartert's subspecies, which, in fact, is interpolated between two areas of distribution of the older form, leading one to the belief that the barring of the tail is a variable character (possibly dependent on age) and of no taxonomic importance.

208. *Oriolus indicus* (Jerd.).

Oustalet, p. 39 ; Robinson, Ibis, 1915, p. 759 ; Kloss, Ibis, 1918, p. 225.

1 ♂ ad. Daban, 650 ft., S. Annam. 18 March, 1918.

"Iris crimson-brown, bill deep livid pink, feet plumbeous."

T. L. 265 ; W. 156 mm.

A very brilliant adult.

209. *Oriolus tenuirostris* Blyth.

3 ♂, 4 ♀. Dran, 3000 ft., S. Annam. 29 March-18 May, 1918.

1 ♀. Arbre Broyé, 5400 ft., S. Annam. 13 May, 1918.

1 ♀. Le Bosquet, 5000 ft., S. Annam. 7 May, 1918.

"Iris crimson, bill fleshy pink, feet dark plumbeous."

Males. T. L. 245, 235, 250 ; W. 138, 144, 145 mm.

Females. T. L. 248, 250, 247, 250, 230, 240 ; W. 146, 143, 145, 141, 138, 144 mm.

This species can with difficulty be distinguished from the preceding. It is perhaps slightly smaller and has a narrower black nape-band and a broader yellow spot on the primary coverts. The males have the back strongly washed with green, and the bird is altogether dingier than *O. indicus*. Differences in the amount of yellow on the tail-feathers are quite inconstant and unreliable as differential characters. The bill is relatively longer and much narrower at the base than in *O. indicus*.

210. *Oriolus trailli* (Vig.).

Oustalet, p. 42.

1 ♂, 1 ♀ imm. Dran, 3000 ft., S. Annam. 30-31 March, 1918.

1 ♂, 1 ♀ juv. Arbre Broyé, 5400 ft., S. Annam. 13-15 May, 1918.

2 ♂ ad., 1 ♀ vix ad., 1 ♀ imm. Dalat, 5000 ft., S. Annam. 6 April, 5 May, 1918.

"Iris pale yellow, bill pale greyish turquoise, feet plumbeous."

Males. T. L. 265, 235, 260, 260 ; W. 145, 134, 142, 144 mm.*Females.* T. L. 250, 255, 252, 260 ; W. 137, 134, 133, 141 mm.

The above series exhibits very perfect gradation from birds with dark brown backs and striped under surface to the fully adult with deep maroon back, rump, and under surface, with no darker clouding on the tail, which is uniform wine-red.

211. *Artamus fuscus* (Vieill.).

2 ♂, 2 ♀. Dran, 3000 ft., S. Annam. 13-17 May, 1918.

1 ♂, 1 ♀. Arbre Broyé, 5000 ft., S. Annam. 12 May, 1918.

"Iris dark ; bill dull pale blue, tip black ; feet black."

Males. T. L. 173, 180, 178 ; W. 129, 129, 136 mm.*Females.* T. L. 177, 182, 173 ; W. 130, 129, 131 mm.212. *Gracula javana intermedia* (Hay).

Stresemann, Nov. Zool. xix. 1912, p. 314 ; Robinson, Ibis, 1915, p. 758 ; Kloss, Ibis, 1918, p. 223.

Eulabes intermedia Kuroda, Annot. Zool. Japon. ix. 1917, p. 248.

2 ♂, 3 ♀. Trang Bom, Cochin China. 2-3 June, 1918.

3 ♂, 4 ♀. Daban, 650 ft., S. Annam. 15-18 March, 1918.

1 ♂. Dalat, 5000 ft., S. Annam. 5 May, 1918.

"Iris dark ; bill orange-red, yellow at tip ; feet Indian yellow."

Males. T. L. 270, 277, 295, 293, 295, 280 ; W. 156, 167, 156, 159, 158, 158 mm.

Females. T. L. 255, 275, 277, 285, 277, 280, 280 ; W. 160, — (worn), 152, 168, 160, 151, 155.

The whole series is very uniform in the character of the lappets and the feathering of the ear-coverts.

213. *Sturnia malabarica nemoricola* (Jerd.).

3 ♂, 1 ♀. Tour Cham, Phanrang. 21 May, 1918.

5 ♂, 2 ♀. Dran, 3000 ft., S. Annam. 30 March–18 May, 1918.

1 ♂, 1 ♀. Le Bosquet, 5000 ft., S. Annam. 10 May, 1918.

“Iris bluish white ; bill, tip yellow, middle portion green, base cobalt ; feet dull ochreous.”

Males. T. L. 195, 192, 195, 185, 205, 200, 193, 193, 183 ; W. 99, 102, 100, 101, 99, 99, 96, 99, 102 mm.

Females. T. L. 193, 190, 188, 193 ; W. 96, 96, 99, 99 mm.

214. *Æthiopsar cristatellus brevipennis* Hartert.

Hartert, Nov. Zool. 1910, p. 250.

3 ♀. Tour Cham, Phanrang, S. Annam. 20–22 May, 1918.

“Iris orange ; bill ivory, base yellow ; feet ochreous.”

T. L. 247, 258, 240 ; W. 130, 128, 126 mm.

Described from Hainan : differing from the typical southern Chinese bird in having the wing considerably shorter.

215. *Graculipica leucocephala* (Gigl. & Salvad.).

Kloss, Ibis, 1918, p. 223.

1 ♂. Daban, 650 ft., S. Annam. 27 March, 1918.

1 ♂, 2 ♀. Dran, 3000 ft., S. Annam. 11–17 May, 1918.

“Iris black, spotted with yellowish white ; orbital skin black ; bill ochreous, base of the lower mandible black ; feet ochreous.”

Males. T. L. 235, 250 ; W. 129, 129 mm.

Females. T. L. 235, 235 ; W. 126, 122 mm.

216. *Graculipica nigricollis* (Payk.).

Robinson, Ibis, 1915, p. 757; Kloss, Ibis, 1918, p. 224.

1 ♂, 1 ♂ juv. Trang Bom, Cochin China. 2-4 June, 1918.

1 ♀. Tour Cham, Phanrang, S. Annam. 20 May, 1918.

1 ♂. Dran, 3000 ft., S. Annam. 31 March, 1918.

"Iris and orbital skin yellow, bill black, feet dirty ivory."

Males. T. L. 275, 295; W. 151, 155 mm.

Female. T. L. 272; W. 141 mm.

217. *Ampeliceps coronatus* Blyth.

Robinson & Kloss, Ibis, 1911, p. 68.

1 ♀. Daban, 650 ft., S. Annam. 20 March, 1918.

"Iris brown, edge of eyelid black, orbital skin ochreous; bill dark olive-ochreous; feet ochreous."

T. L. 223; W. 120 mm.

218. *Ploceus manyar flaviceps* (Less.).

Ploceus manyar flaviceps Less.; Stresemann, Nov. Zool. xix. 1912, p. 319.

1 ♂, 1 ♀. Tour Cham, Phanrang, S. Annam. 20-22 May, 1918.

1 ♂. Dran, 3000 ft., S. Annam. 15 May, 1918.

"*Male.* Iris dark; maxilla brownish black, mandible brownish black, lower surface yellowish; feet deep dull fleshy."

Males. T. L. 138, 133; W. 67, 63 mm.

Female. T. L. 135; W. 61 mm.

219. *Munia punctulata subundulata* Godwin-Austen.

1 ♂, 1 ♀. Tour Cham, Phanrang, S. Annam. 22-23 May, 1918.

3 ♂, 1 ♀. Dran, 3000 ft., S. Annam. 1 April-17 May, 1918.

"Iris hazel, bill black, feet plumbeous."

Males. T. L. 123, 123, 120, 127; W. 54, 55, 54, 54 mm.

Females. T. L. 120, 120; W. 52, 53 mm.

220. *Passer flaveolus* Blyth.

7 ♂ ad., 1 ♂ imm., 1 ♂ juv., 6 ♀. Tour Cham, Phanrang, S. Annam. 21–23 May, 1918.

“Iris dark; male, bill black; female, maxilla brown, mandible fleshy; feet brown.”

Males. T. L. 150, 138, 144, 140, 135, 140, 138; W. 71, 72, 69, 72, 69, 68, 68 mm.

Females. T. L. 140, 140, 137, 135, 138, 133; W. 68, 68, 65, 67, 65, 63 mm.

221. *Loxia curvirostra meridionalis*, subsp. nov.

Nearest *L. c. albiventris*, but with a very much coarser, more massive bill: larger than *L. c. himalayensis* and *L. c. luzonensis*, and the males with no trace of pink in the under tail-coverts as in the latter form.

Out of the large series obtained no male is entirely devoid of green feathers intermixed with the red of the head and underparts. In the sequence of plumages males appear to pass through a stage in which they exactly resemble the adult females, except that they are a little darker on the chin and have the green on the under surface more yellow. On the other hand, three birds in the heavily striped immature livery already show traces of the orange-red adult plumage.

Types. ♂ ♀. Dalat, 5000 ft., S. Annam. 4 & 7 May, 1918.

Male. T. L. 167; wing 96; tail 64; tarsus 17; bill from gape 20; height of maxilla 8.2, breadth at base 10 mm.

Female. T. L. 167; wing 90; tail 60; tarsus 16; bill from gape 19.7; height of maxilla 8.0, breadth at base 9 mm.

“Iris dark; bill blackish brown, tomia paler; feet dark brown.”

6 ♂ ad., 2 ♂ mm. (in female plumage), 6 ♀ ad., 1 ♀ juv. Dalat, 5000 ft., S. Annam. 11 April–7 May, 1918.

1 ♂ juv., 1 ♀ ad. Arbre Broyé, 5400 ft., S. Annam. 14 May, 1918.

2 ♂ juv., 1 ♀ juv. Dran, 3000 ft., S. Annam. 17 May, 1918.

Males. T. L. 167, 177, 170, 174, 168, 166, 165, 163, 170, 176, 169; W. 96, 94, 96, 93, 94, 91, 91, 91, 95, 95, 90 mm.

Females. T. L. 167, 166, 167, 168, 170, 170, 160 (juv.), 167, 171 (juv.); W. 90, 90, 89, 88, 93, 93, 86, 91, 93.

222. *Anthus trivialis maculatus* Jerdon.

Hartert, Vög. paläarkt. Faun. i. 1908, p. 273.

1 ♂. Daban, 650 ft., S. Annam. 25 March, 1918.

1 ♀. Dran, 3000 ft., S. Annam. 18 May, 1918.

1 ♀. Dalat, 5000 ft., S. Annam. 5 May, 1918.

3 ♂, 1 ♀. Langbian Peaks, 5500-6500 ft., S. Annam. 18 April-27 April, 1918.

"Iris dark; maxilla blackish brown; mandible fleshy, tip black; feet fleshy."

Males. T. L. 172, 175, 179, 170; W. 82, 86, 85, 86 mm.

Females. T. L. 164, 164, 170; W. 83, 80, 83 mm.

This series, presumably in summer plumage, is darker than specimens from Siam and the Malay Peninsula collected in the winter months. The edgings to the wing-coverts are also much narrower.

223. *Mirafra assamica marionæ* Stuart Baker.

Kloss, Ibis, 1918, p. 222.

5 ♂, 2 ♀. Tour Cham, Phanrang, S. Annam. 20-22 May, 1918.

1 ♂. Daban, 650 ft., S. Annam. 23 March, 1918.

"Iris brown or hazel; maxilla dark brown, tomia fleshy; mandible fleshy; feet deep fleshy."

Males. T. L. 142, 150, 143, 148, 135, 143; W. 77, 80, 80, 78, 76, 77 mm.

Females. T. L. 152, 135; W. 77, 74 mm.

Agrees well with specimens from Siam.

224. *Dendronanthus indica* (Gm.).

Hartert, Vög. paläarkt. Faun. i. 1908, p. 309.

1 ♀. Daban, 650 ft., S. Annam. 23 March, 1918.

"Iris dark; maxilla brown, mandible pale fleshy; feet dark fleshy."

Total length 172; W. 76 mm.

225. *Cinnyris asiatica intermedia* (Hume).

Arachnecthra intermedia Hume, Ibis, 1870, p. 436.

Cinnyris edeni Anderson, Anat. & Zool. Res. 1878, p. 661, pl. xlix. ; Oustalet, p. 9.

1 ♂. Tour Cham, Phaurang, S. Annam. 20 May, 1918.

2 ♂. Daban, 650 ft., S. Annam. 18-25 March, 1918.

"Iris dark, bill and feet black."

T. L. 105, 113, 115; W. 56, 57, 57; bill from gape 18·5, 18·5, 19 mm.

These birds appear to belong to the eastern form of this widely spread species, differing from the typical race in the purplish, not greenish, metallic tint of the upper surface and in a slightly longer bill. They are, however, not nearly so strongly violaceous above as the figure of *C. edeni* (loc. cit.), which is possibly somewhat exaggerated.

226. *Æthopyga siparaja tonkinensis* Hartert.

Æthopyga siparaja (Raffles); Oustalet, Bull. Soc. Zool. France, xv. 1890, p. 158.

Æthopyga seheriæ subsp., Kuroda, Annot. Zool. Japon. ix. 1917, p. 249.

Æthopyga seheriæ tonkinensis Hartert, Bull. Brit. Orn. Club, xxxviii. 1917, p. 7.

Æthopyga seheriæ (partim) Oustalet, p. 8.

1 ♂. Daban, 650 ft., S. Annam. 26 March, 1918.

"Iris dark; maxilla dark brown, mandible brownish yellow; feet brownish black."

T. L. 137; W. 54 mm.

This form differs from *Æ. s. cara* Hume, in having the nape brown, the red of the breast decidedly darker, the bases of the feathers blackish grey, not whitish yellow. From descriptions it would appear to come exceedingly close to *Æ. s. owstoni* Rothschild, Bull. Brit. Orn. Club, xxv. 1907, p. 32, from Nanchan Id., Kuangtung Peninsula, southern China.

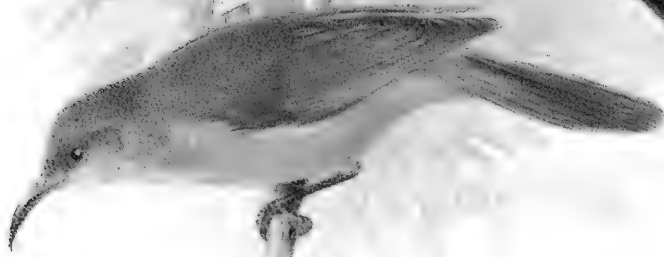
All the forms, as noted by Hartert (loc. cit.), are obviously subspecies of *Æthopyga siparaja* (Raffles), typical locality, West Sumatra.



1.



2.



3.

1. *ÆTHOPYGA SANGUINIPECTUS* JOHNSI. ♂

2. *ÆTHOPYGA GOULDIÆ ANNAMENSIS*. ♂

3. *ÆTHOPYGA GOULDIÆ ANNAMENSIS*. ♀

227. *Æthopyga sanguinipectus johnsi*, subsp. nov. (Plate XVIII. fig. 1.)

A very distinct subspecies of *Æ. sanguinipectus* Wald., the male differing in the almost total suppression of the yellow of the breast, so that it appears almost uniform scarlet, finely streaked with yellow, not yellow lightly streaked with orange-red. Abdomen greyish olive-green, darker than in *Æ. sanguinipectus*. Black pectoral band almost absent.

Type. Adult male from Dran, 3000 ft., S. Annam. 15 May, 1918.

T. L. 114; W. 50; tail 48; tarsus 11; bill from gape 15.6 mm.

"Iris dark, bill black, feet blackish brown."

3 ♂. Dran, 3000 ft., S. Annam. March 1918–15 May, 1918.

Total length 112, 115, 114; wing 49, 51, 50 mm.

In patches of evergreen forest: not common.

[Named in honour of Mr. J. F. Johns, Acting British Consul at Saigon at the dates of my visit, to whom I am very grateful for much hospitality and assistance.—*C. B. K.*]

228. *Æthopyga gouldiæ annamensis*, subsp. nov. (Plate XVIII. figs. 2, 3.)

Male. Like that of *Æ. g. gouldiæ*, but without any indication of red stripes on the breast and with no yellow whatever on the lower back and rump, which is dull olive-brown; yellow of the under surface less orange, being "lemon-chrome" of Ridgway. Shoulder-patch and upper tail-coverts steel-blue without violet reflections. Total length 162; wing 57; tail 98; tarsus 14; bill from gape 17.5 mm.

Female. Less distinctly yellow on the rump and with the throat, neck, and sides of breast greyish instead of greenish yellow. Tail more elongated than in the typical subspecies. Belly and under tail-coverts bright clear yellow. Total

length 117; wing 51.5; tail 49; tarsus 14; bill from gape 16 mm.

Types. ♂ ♀. Langbian Peaks, 6500 ft., S. Annam. 19 & 26 April, 1918.

"Iris dark; male, maxilla black, mandible brown and fleshy; female, maxilla blackish brown, mandible brown; male, feet blackish brown; female, feet brown."

7 ♂, 2 ♀. Dalat, 5000 ft., S. Annam. 6 April–1 May, 1918.

4 ♂, 2 ♀. Langbian Peaks, 6000–7000 ft., S. Annam. 19–27 April.

Males. T. L. 158, 165, 139, 150, 150, 131, 160, 162, 149, 168, 118; wing 57, 59, 54, 55, 54, 57, 58, 57, 56, 55, 59 mm.

Females. T. L. 110, 116, 118, 117; wing 50, 52, 50, 51.5 mm.

Very common among the pines and exceedingly tame.

229. *Chalcoparia singalensis koratensis* Kloss.

Kloss, Ibis, 1918, p. 218.

2 ♂, 1 ♀. Dran, 3000 ft., S. Annam. 11–16 May, 1918.

1 ♀ juv. Trang Bom, Cochin China. 2 June, 1918.

"Iris dark, bill black, feet yellowish olive."

Males. T. L. 111, 110; W. 51, 52 mm.

Females. T. L. 108, 107; W. 50, 51 mm.

Amongst a large series from the Malay Peninsula of the typical *Ch. s. singalensis* we have found no young birds with a pure green throat as is the case with a proportion of immature birds from more northern localities.

230. *Arachnothera magna aurata* Blyth.

Arachnothera magna Oustalet, p. 11; Kuroda, Annot. Zool. Japon. ix. 1917, p. 351.

1 ♂, 5 ♀. Dran, 3000 ft., S. Annam. 1 April–16 May, 1918.

1 ♂. Arbre Broyé, 5400 ft., S. Annam. 1 May, 1918.

"Iris brown; maxilla black; mandible brown, tomia yellow; feet ochreous."

Males. T. L. 203, 195; W. 94, 86; bill from gape 45.5, 45.5 mm.

Females. T. L. 177, 172, 180, 180, 172; W. 80, 76, 84, 83, 79; bill from gape 39.5, 40, 41.5, 42, 41.5 mm.

Compared with a Darjiling specimen, which is typical *A. magna*, these specimens differ in being much less striped above, therein agreeing with *A. m. aurata* Blyth, from Pegu.

231. *Arachnothera longirostra* (Lath.).

1 ♂. Daban, 650 ft., S. Annam. 16 March, 1918.

1 ♂. Dran, 6000 ft., S. Annam. 11 May, 1918.

"Iris brown; maxilla black; mandible, tip black, base plumbeous; feet cobalt-blue or dark plumbeous."

T. L. 163, 163; W. 63, 66; bill from gape —, 37 mm.

Differs in no way from Malayan specimens. Much duller below than the Javan and Bornean birds (*A. l. prillwitzii* Hartert and *A. l. büttikoferi* Van Oort).

232. *Dicaeum minullum olivaceum* (Wald.).

Dicaeum olivaceum Walden, Ann. & Mag. Nat. Hist. (4) xv. 1875, p. 101.

Dicaeum minullum Hartert, Nov. Zool. xvii. 1910, p. 243.

Dicaeum inornatum Oustalet, p. 15.

3 ♂, 2 ♀. Daban, 650 ft., S. Annam. 20–27 March, 1918.

"Iris dark; maxilla blackish; mandible deep plumbeous, tip black; feet black. Young birds, bill largely yellow.

Males. T. L. 86, 85, 80 (imm.); W. 46, 47, 44 mm.

Females. T. L. 81, 78 (imm.); W. 44, 43 mm.

Though these birds average greyer and less ochreous than those from Sumatra and the Malay Peninsula they can be matched by one from the former locality. The Hainan race *D. m. minullum* Swinhoe is said to be more greenish than the mainland bird.

233. *Dicaeum ignipectus* (Hodgs.).

3 ♂, 1 ♀. Langbian Peaks, 5500–7500 ft., S. Annam. 17–27 April, 1918.

"Iris dark ; bill black ; feet blackish brown, in female leaden."

Males. T. L. 85, 85, 88 ; W. 50, 47, 48 mm.

Female. T. L. 82 ; W. 46 mm.

This series is inseparable from birds from the mountains of the Malay Peninsula.

234. *Dicæum chrysorrheum* (Temm.).

Sharpe, Cat. Birds Brit. Mus. x. 1885, p. 411 ; Robinson, Ibis, 1915, p. 756.

1 ♀. Daban, 650 ft., S. Annam. 20 March, 1918.

"Iris scarlet ; maxilla black, mandible plumbeous ; feet black."

T. L. 104 ; W. 58 mm.

235. *Dicæum cruentatum siamensis* Kloss.

Ibis, 1918, p. 216.

1 ♀. Tour Cham, Phanrang, S. Annam. 21 May, 1918.

2 ♂, 1 ♀. Daban, 650 ft., S. Annam. 25 March, 1918.

"Iris, bill, and feet black."

Males. T. L. 85, — ; W. 49, 49 mm.

Females. T. L. 85, 87 ; W. 45, 44 mm.

The males agree well with the type of *D. c. siamensis* in having the under surface paler and less buffy than the large majority of Malayan birds from south of Trang. The wing-coverts are steel-blue without any trace of green. A female from Tour Cham is more patched with rusty above than the other specimens, as is stated to be the case with birds from Hainan (Hartert, Nov. Zool. xvii. pp. 243-244).

*List of new Species and Subspecies figured, with
details of the specimens figured.*

PLATE X. *Arboricola rufogularis annamensis*: p. 403.

♂. Langbian Peaks, Annam. 16/iv./18.

PLATE XI. *Arboricola brunneipectus albigula*: p. 405.

♂. Dran, Annam. 1/iv./18.

PLATE XII. *Garrulax milleti*: p. 574.

♂. Dran, Annam. 11/v./18.

PLATE XIII. fig. 1. *Stactocichla merulina annamensis*: p. 577.

♂. Dran, Annam. 12/v./98. (Type.)

fig. 2. *Trochalopteron yersini*: p. 575.

♂. Langbian Peaks, Annam. 26/iv./18.

PLATE XIV. fig. 1. *Pseudominla atriceps*: p. 583.

♀. Langbian Peaks, Annam. 16/iv./18. (Type.)

fig. 2. *Rimator danjoui*: p. 578.

♂. Langbian Peaks, Annam. 20/iv./18.

PLATE XV. *Cutia nipalensis legalleni*: p. 588.

♂. Dalat, Annam. 4/v./18.

♀. Langbian Peaks. 15/iv./18.

PLATE XVI. fig. 1. *Cryptolopha malcolmsmithi*: p. 448.

♀. Langbian Peaks, Annam. 19/iv./18.

fig. 2. *Mesia argentaureis cunhaci*: p. 591.

♂. Dran, Annam. 30/iii./18.

fig. 3. *Certhia discolor meridionalis*: p. 609.

♂. Dalat, Annam. 11/iv./18.

PLATE XVII. *Cissa margaritæ*: p. 604.

♀. Langbian Peaks. 22/iv./18. (Type.)

PLATE XVIII. fig. 1. *Æthopyga sanguinipectus johnsi*: p. 621.

♂. Dran, Annam. —/iii./18.

figs. 2 & 3. *Æthopyga gouldiæ annamensis*; p. 621.

♂. Langbian Peaks. 20/iv./18.

♀. " " —/iv./18.

XXX.—Note on the Jays of Holland.

By Baron R. C. SNOUCKAERT VAN SCHAUBURG, M.B.O.U.

IN 1903 Dr. Hartert (Vög. pal. Faun. p. 30) separated the British Jays from the Continental birds under the name of *Garrulus glandarius rufitergum*, on account of their more reddish backs. On examination of a series of these birds, all collected in Holland, and most of them shot by myself, I was struck by the decidedly vinaceous tinge of the lower back of some of them; others show this tinge more or less mixed with grey, while one bird, which I shot on 5 November, has the back of a beautiful grey hue contrasting with the reddish tone of the hind-neck. When I shot this bird in the course of a pheasant-shoot and picked

it up, I remember that its grey back at once struck me, so that I took it with me and had it skinned.

The colour of the underside of my Dutch birds varies considerably: in some it is light, even whitish, on the abdomen, in others it is dark, and one or two have the underparts nearly uniformly dull vinaceous, with only a slightly lighter shade in the middle. One of these more sombre-coloured birds has a semicircular collar of black blotches across the throat. These dark patches are to be found on the throats of a few other birds, but less defined and much lighter, and they are, according to Dr. Hartert, mostly to be found on true *G. g. glandarius* and seldom on *G. g. rufitergum*.

So my series of Jays collected in Holland may be said to be a kind of mixture of the two forms. This is, however, not to be wondered at, as all my birds have been collected during the winter half-year when, of course, a large influx of migratory birds may be expected. That our country should be visited by great quantities of Jays from the north-east on migration is natural, but the question was whether Holland is also visited by British birds. In order to ascertain this as far as possible, I requested one of my correspondents in London to send me some English skins, and in compliance this gentleman sent me two specimens, from Montgomeryshire and Kent respectively. These I compared with my birds, and found some of the latter exactly like the two British Jays. So, in all probability, some birds migrate from England to Holland, and maybe go farther still. The same has been proved, by means of ringing, for other species, *e. g.*, the Redbreast.

Some time ago I received for examination, by the courtesy of Count Gyldenstolpe, four Jays from the Natural History Museum at Stockholm. These birds were collected near Uppsala (east Sweden) between 23 October and 23 January, and are all undoubted *G. g. glandarius*, although collected during the winter. Count Gyldenstolpe at the same time informed me that the Museum unfortunately does not possess any obtained during the breeding-season, but that there are some mounted birds

which were shot at the end of April. In these birds the backs are "light brownish drab" (Ridgway), though slightly washed or tinged with reddish vinous.

The four Swedish birds have all dark undersides, and on three of them I find an indistinct blackish shade on the throat. They differ a little *inter se* in the colouring of the back, but all of them are much darker than my British specimens. One of the Swedish birds is the exact counterpart of the beautiful grey bird shot by myself and mentioned above.

So, to my mind, it may be taken as proved that in the autumn, British as well as north-eastern Jays migrate to Holland; but which is the breeding-form in our country? I myself possess only two young birds of the year, collected by myself in July and August, and these are, so far as can be seen in such immature specimens, decidedly red-backs. I examined a few old Jays in rather worn plumage shot by a friend of mine in the breeding-season. They too resemble much more the English than the Swedish birds, but they are too few in number to judge about the breeding-form generally. I suspect that very likely an intermediate form between *G. g. glandarius* and *G. g. rufitergum* may ultimately be shown to breed in Holland. In order to decide this, however, more summer material must be forthcoming.

Heavily-striped heads no more than sparsely-striped ones are signs of maturity or youth. I have found both in very young birds of the year, and the black stripes vary individually. The same seems to be the case with the transverse bands on the basal part of the tail-feathers. I have in my possession birds with entirely black tails, others with a grey shade on the basal part nearest the body, and others again with more or less distinct greyish-blue transverse bands. Not two of my birds are alike in this respect. These bluish bars sometimes even extend over the greater part of the tail, leaving only a broad terminal band black. My two young birds of the year show the bars quite distinctly.

It is, of course, a well-known fact that the intensity of

the blue colour on the wing-coverts is liable to considerable variation. Sometimes the transverse bars are blue and black; in other birds white, blue, and black, and I find that when the latter is the case, the pattern of the whole is changed, the black bars being more apart. Now and then, but as it seems rarely, tiny white spots can be detected at the end of some of the coverts.

XXXI.—*A List of the Birds of the Anglo-Egyptian Sudan, based on the Collections of Mr. A. L. Butler, Mr. A. Chapman and Capt. H. Lynes, R.N., and Major Cuthbert Christy, R.A.M.C. (T.F.). Part III. PICIDÆ—SAGITTARIIDÆ.* By W. L. SCLATER, M.B.O.U., and C. MACKWORTH-PRAED, M.B.O.U.*

(Plate XIX.)

THIS, the third portion of the Birds of the Sudan, contains the Picarian and Accipitrine birds, and we trust that the next part will complete this somewhat lengthy paper.

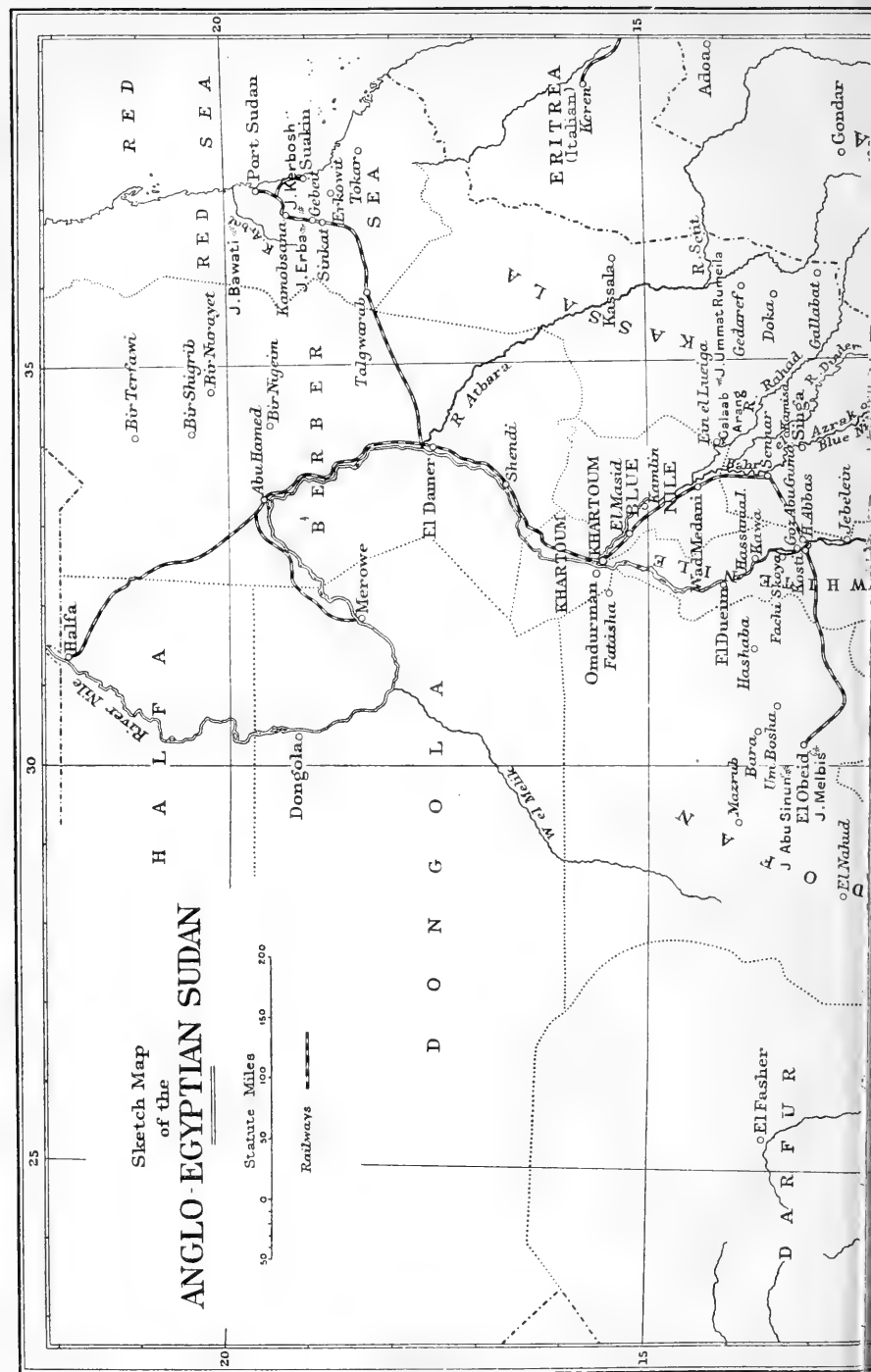
In working out this part we have found Mr. Claude Grant's unfinished account of the birds of the Cosens collection from British East Africa (Ibis, 1915, pp. 1-76, 235-316, 400-473) most useful, as he paid special attention to the racial forms of many of the species met with, and we have very frequently referred to his work. We hope that he may soon return to this country and complete his task which was interrupted by military duty.

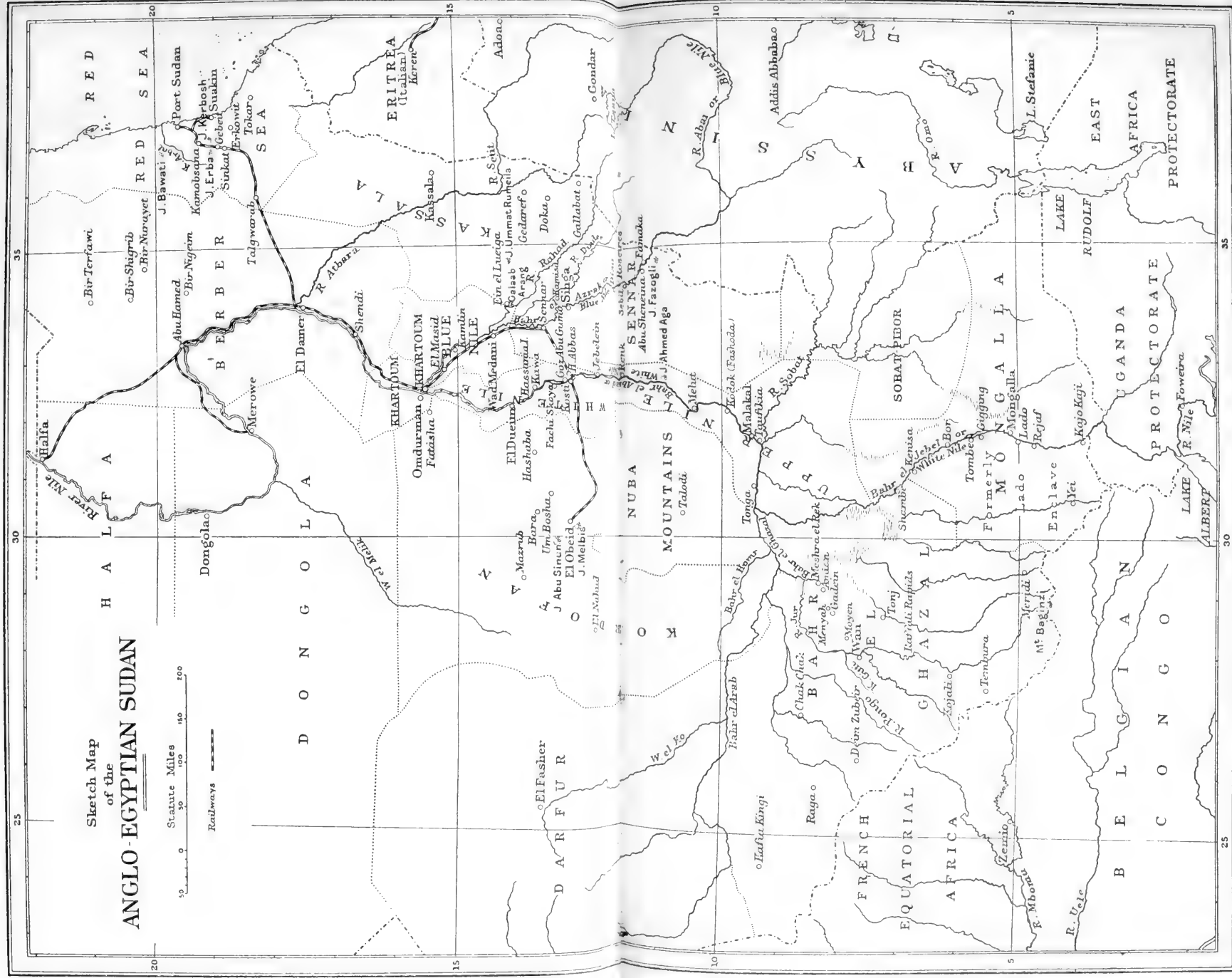
For the convenience of readers we have reprinted the map of the Sudan, published in the first portion of our paper.

As before, the names of the Provinces into which the Anglo-Egyptian Sudan is divided for administrative purposes have been added to the localities cited. These have been abbreviated as follows:—

Ber. = Berber Province, R.S. = Red Sea Province, Kas. =

* Continued from Ibis, 1918, p. 721.





Kassala, **Sen.** = Sennar, **B.N.** = Blue Nile, **Kh.** = Khartoum Province, **Kor.** = Kordofan Province, **W.N.** = White Nile Province, **U.N.** = Upper Nile Province, **B.G.** = Bahr el Ghazal, **Mon.** = Mongalla Province, and **L.E.** = Lado Enclave.

There are no new subspecies described in the present part.

Family PICIDÆ.

Campethera nubica nubica.

Picus nubicus Gmelin, Syst. Nat. i. pt. 1, 1788, p. 439: Nubia.

Dendromus nubicus (Gm.) ; Reichenow, V. A. ii. p. 178.

Campothera nubica (Gm.) ; Butler, Ibis, 1905, p. 358, 1909, p. 401.

[B. coll.] 1 Khor Arbat May, **R.S.** ; 5 Roseires Apl. June Aug. Sept., 1 Gerif Apl. **Sen.** ; 1 Sherif Yakub Apl., 1 Ein el Lueiga May, **B.N.** ; 1 Jebel Melbis Apl. **Kor.** ; 1 Jebel Ahmed Agha Feb., 1 Bahr el Zeraf June, **U.N.** ; 1 Giggig, **Mon.**

[C. & L. coll.] 1 Kamisa Dec. **Sen.** ; 2 Kostî Jan. **W.N.** ; 1 nr. Lake No Feb. **U.N.**

[Gurney coll.] 1 Metemma Feb. **Ber.**

Widely distributed throughout the Sudan from north of Khartoum to Uganda and from the Red Sea to Kordofan (*A. L. B.*).

Campethera punctata balia.

Picus balius Heuglin, Orn. N.O.-Afr. i. 1871, p. 810 : Djur and Bongo river, **B.G.**

Dendromus balius (Heugl.) ; Reichenow, V. A. ii. p. 182.

Campothera nubica apud Butler, Ibis, 1908, p. 248.

[B. coll.] 1 Chak Chak Feb. **B.G.**

[Chr. coll.] 2 Mt. Baginzi Mch., 1 Wau, **B.G.**

With this subspecies *Dendromus hargitti* Sharpe (Ibis, 1902, p. 638 : Semmio, Niam-Niam), the type of which is in the British Museum, is synonymous.

Campethera abingoni chrysurus.

Dendromus chrysurus Swainson, Birds W. Afr. ii. 1837, p. 158: Senegal; Reichw. V. A. ii. p. 173.

Dendromus abingoni chrysurus Neum. Bull. B. O. C. xxi. 1908, p. 96.

[Chr. coll.] 1 Meridi Feb. **B.G.**

This bird closely resembles those taken on the Bamingi and Shari rivers by Alexander, and alluded to by Neumann. It has not hitherto been recorded from the Sudan or the Nile valley.

Dendropicos lafresnayi lepidus.

Ipoctonus lepidus Cab. & Heine, Mus. Hein. iv. pt. 2, 1863, p. 118: Abyssinia.

Dendropicos lafresnayi lepidus Claude Grant, Ibis, 1915, p. 462.

[B. coll.] 2 Sheik Tombé, summer, **Mon.**; 1 Lado Feb. **L.E.**

[Chr. coll.] 2 Yambio. Mch. **B.G.**

We have followed Claude Grant in his revision of this group. This form is only found in the Mongalla Province, the Lado enclave, and the Bahr el Ghazal, and ranges to Abyssinia, German East Africa, and the eastern Belgian Congo.

Dendropicos pœcilolæmus.

Dendropicos pœcilolæmus Reichw. O. M. 1893, p. 30: Songa west of Lake Albert; id. V. A. ii. p. 196.

[B. coll.] 2 Kajo Kaji Mch. **L.E.**

[Chr. coll.] 2 Meridi Jan. Feb. **B.G.**

This little Woodpecker with a spotted breast is known from Uganda and the upper Welle valley, but does not appear to have been hitherto recorded from the Sudan. It is probable that *Picus minutus* recorded by Des Murs (Lefebvre's 'Voyage en Abyssinie,' vi. 1845, p. 176*, and Reichw. V. A. ii. p. 199 under *Dendropicus minutus*) as having been obtained on the White Nile by M. d'Arnaud really referred to this species.

Thripias namaquus schoënsis.

Picus schoënsis Rüppell, Mus. Senck. iii. 1842, p. 120 : Shoa.

Mesopicus schoënsis (Rüpp.) ; Reichw. V. A. ii. p. 191.

Campothera shoënsis (Rüpp.) ; Butler, Ibis, 1908, p. 247.

[B. coll.] 1 Khor Gitti Jan. B.G.

Yungipicus obsoletus obsoletus.

Picus obsoletus Wagler, Isis, 1829, p. 510 : Senegambia.

Dendropicos obsoletus (Wagl.) ; Reichw. V. A. ii. p. 199.

Iyngipicus obsoletus (Wagl.) ; Butler, Ibis, 1905, p. 358, 1908, p. 248.

[B. coll.] 2 Roseires Apl. Aug., 1 Rahad river May, Sen. : 1 Kaka Feb., 1 Bahr el Zeraf June, U.N. ; 1 Kátta Jan., 1 Chak Chak Feb. B.G. ; 2 Sheik Tombé, Mon.

[C. & L. coll.] 1 nr. Sennar Jan., 2 Kamisa Dec. Sen. ; 1 Jebelein Jan. W.N. ; 1 Jebel Ahmed Agha Jan., 3 Tonga Feb. U.N.

[Chr. coll.] 1 Yei Nov. L.E.

Some of these birds, especially those from the Bahr el Ghazal and Lado, are slightly darker than the typical race and approach *Y. o. ringens* Hartert from British East Africa.

Yungipicus obsoletus heuglini.

Iyngipicus obsoletus heuglini Neumann, J. f. O. 1904, p. 402 : Eritrea.

Iyngipicus obsoletus apud Butler, Ibis, 1909, p. 401.

[B. coll.] 1 Khor Arbat May, R.S.

[C. & L. coll.] 1 Sinkat Mch. R.S.

Distinguished from the typical race by the small amount of the white on the wing-coverts. This bird is apparently new to the British Museum collection.

Mesopicos goertæ poicephalus.

Dendrobates poicephalus Swainson, Birds W. Afr. ii. 1837, p. 154 : W. Africa.

Mesopicos goertæ poicephalus (Swains.) ; Reichw. V. A. ii. p. 186.

Mesopicus pæocephalus (Swains.) ; Butler, Ibis, 1908, p. 248.

[B. coll.] 1 Shendi May, Ber. ; 1 nr. Renk Feb. U.N. ;
1 Gardain Jan., 1 Pongo Feb., 1 Chak Chak Feb.,
1 Wau Apl. B.G. ; 3 Mongalla Jan. July, 1 Sheik
Tombé May, 1 Kenisa, 2 Giggling, 2 Shambe Jan.
Mon. ; 1 Lado Feb. L.E.

[C. & L. coll.] 1 Jebel Ahmed Agha Jan. U.N.

[Chr. coll.] 3 Meridi Jan., 1 Yambio Mch., 1 Wau
July-Aug. B.G. ; 1 Yei Dec. L.E.

[Gurney coll.] 1 Meroë Jan. Ber.

Mesopicos goertæ abessinicus.

Mesopicos goertæ abessinicus Reichw. O. M. 1900, p. 58 :
Abyssinia ; id. V. A. ii. p. 187.

[B. coll.] 2 Roseires July, Aug. Sen.

[C. & L. coll.] 2 Kamisa Dec., 1 Senga Dec. Sen.

Owing to the large amount of material, notably from the Sudan, which has come into the Museum since Claude Grant reviewed this group (Ibis, 1915, pp. 467-470), we think it advisable to do so again. As we now have specimens of *M. g. abessinicus* Reichw., the connecting link between *M. goertæ* (S. Müll.) and *M. spodocephalus* (Bp.), it becomes clear that all are best treated as subspecies of *M. goertæ*.

We recognize the following races :—

1. *M. G. GOERTÆ* (S. Müll.).

Underside distinctly yellowish ; throat pale grey ;
centre of abdomen orange.

Range. Senegal.

2. *M. G. POICEPHALUS* (Swains.).

Underside greyer, not so yellow, throat somewhat
darker grey, otherwise similar to *M. g. goertæ* ;
centre of abdomen orange-red.

Range. Gambia to the mouth of the Congo on the west,
east to the Nile valley.

This species was described by Swainson from West Africa without definite locality, nor is there anything in the description to show that he was describing the Gambian and Gold Coast bird rather than the one from Senegal. Still, as Reichenow (O. M. 1900, p. 58) has assigned Swainson's name to the Gambia race, we may leave it at that. *M. g. königi* (Neumann, O. M. 1913, p. 181: Mutmir, Berber Province) is, if distinct, which we cannot with our present material determine, confined to the Berber Province. We have three examples—one from Shendi in the Butler collection, one from Nakheila (C. N. Rothschild coll.), and one from Meroë (Gurney coll.)—which are undoubtedly somewhat paler than the birds from the upper Nile valley, but they are all in worn plumage.

3. *M. G. CENTRALIS* Reichw.

Underside darker and washed with greenish on the flanks; throat and chest still darker grey.

Range. Uganda and Niam Niam country.

4. *M. G. ABESSINICUS* Reichw.

At once distinguished by the greater amount of red in the centre of the abdomen; underside also more barred and washed with greenish yellow.

Range. North Abyssinia and Blue Nile.

5. *M. G. SPODOCEPHALUS* (Bp.).

Darker grey below and with yet more red on the abdomen, but still with a pronounced greenish wash on the flanks.

Range. South Abyssinia.

6. *M. G. RHODEOGASTER* Fschr. & Reichw.

Like the last race, but clear grey below with no greenish wash.

Range. British East Africa.

A single bird in the British Museum, said to be from Nairobi, collected by Percival is undoubtedly the Abyssinian form. We cannot explain this until a larger series from the intervening country is available.

Iynx torquilla torquilla.

Iynx torquilla torquilla (Linn.) ; Hartert, Vög. pal. Faun. p. 938 ; Butler, Ibis, 1905, p. 358.

[B. coll.] 2 Erkowit Meh. Apl. **R.S.** ; 1 nr. Renk Jan. **U.N.** ; 1 Chak Chak Feb. **B.G.**

[C. & L. coll.] 1 Kamisa Dec. **Sen.**

[Chr. coll.] 1 Yei Nov. **L.E.**

Widely distributed in winter, but not abundant (*A. L. B.*).

Iynx ruficollis pulchricollis.

Iynx pulchricollis Hartlaub, Ibis, 1884, p. 28, pl. iii. : Babira, east of the Bahr el Gebel. (In the Mongalla Province of the Sudan or possibly in the Nile Province of Uganda.)

This bird is known only from the pair originally obtained by Emin and described by Hartlaub. It is not represented in the Museum collection. It is distinguished by the black and white banding on the chin and throat.

Family CAPITONIDÆ.

Pogonorhynchus rolleti.

Pogonias rolleti De Filippi, Rev. Mag. Zool. 1853, p. 290 : Upper White Nile.

Pogonorhynchus rolleti (Fil.) ; Reichw. V. A. ii. p. 117.

Erythrobucco rolleti (Fil.) ; Butler, Ibis, 1908, p. 246, 1909, p. 87.

[B. coll.] 1 Buval Jan., 3 Chak Chak Feb., 1 Pongo river Meh., 1 Dud Majok Meh., 1 Kojali Meh., 1 Wau Apl. **B.G.** ; 2 Rejaf Feb. Apl. **L.E.**

[Chr. coll.] 2 Mt. Baginzi Meh., 6 Wau July Aug. **B.G.**

This handsome bird ranges from the valley of the upper White Nile westwards to the upper Shari, where it was obtained by Alexander at Bunda near Fort Archambault in July 1905.

Lybius bidentatus æquatorialis.

Melanobucco æquatorialis Shelley, Ibis, 1889, p. 476 : Hparo.

Lybius æquatorialis (Shell.); Reichw. V. A. ii. p. 119.

[Chr. coll.] 4 Meridi Jan., 2 Mt. Baginzi Mch.,
2 Yambio Mch. **B.G.**

This subspecies takes the place of the West African *L. b. bidentatus* from the Shari river eastwards to Mau and southern Abyssinia, but it does not seem to have been met with by Butler though mentioned by Heuglin as rare on the upper Nile.

Neumann (Bull. B. O. C. xxiii. 1908, p. 29) separates the southern Ethiopian form as *L. b. æthiops* on account of its slightly smaller size, but there appears to be a good deal of variation in this respect, and there is hardly any ground for recognizing it as distinct. The wings of the Christy birds vary from 95 to 105 mm.

Lybius leucocephalus.

Laimodon leucocephalus De Filippi, Rev. Mag. Zool. 1853, p. 291 : White Nile.

Lybius leucocephalus (Fil.); Reichw. V. A. ii. p. 121 ; Butler, Ibis, 1908, p. 246, 1909, p. 87.

[B. coll.] 1 Menyah Jan., 2 Gardain Jan., 1 Ayem Jan., 2 Doleiba May, **B.G.** ; 1 Kajo Kaji Mch. **L.E.**

[Chr. coll.] 1 Mt. Baginzi Mch., 3 Wau July-Aug. **B.G.** ; 3 Yei Nov. Dec. **L.E.**

Claude Grant suggests in 'The Ibis,' 1915, p. 438, that this bird may be the young of *L. senex*. This we cannot agree with, as no specimens of *L. senex* are known from the main range of *L. leucocephalus*. No doubt they are closely related and were developed from a common stock, but we cannot admit their identity or even that they are subspecies of the same bird at the present time. One of the birds collected by Christy at Wau has considerably more white on the belly than the others, thus showing a tendency to *L. senex*, which is possibly the ancestral form.

Lybius tridactylus.

Loxia tridactyla Gmelin, Syst. Nat. i. pt. 2, 1789, p. 866 ; Abyssinia.

Lybius tridactylus (Gm.) ; Reichw. V. A. ii. p. 124.

Lybius abyssinicus (Lath.) ; Eutler, Ibis, 1908, p. 246, 1909, p. 88.

[B. coll.] 4 Roseires Apl. July Aug., 1 Jebel Fazogli May, Sen. ; 1 Ardebba Jan. B.G. ; 1 Mongalla, 3 Bor May, 1 Kenisa May, 3 Sheik Tombé Jan. May, 4 Giggig Oct. Mon.

[Chr. coll.] 4 Yei Nov. Dec. L.E.

We agree with Grant (Ibis, 1915, p. 438) in not recognizing *L. t. ugandæ* Berger (O. M. 1907, p. 201 : Nimule, Mon.). Our birds do not differ appreciably from the Abyssinian typical form.

Lybius vieilloti vieilloti.

Pogonias vieilloti Leach, Zool. Misc. ii. 1815, pl. 97 : Africa—probably Abyssinia.

Melanobucco vieilloti (Leach) ; Butler, Ibis, 1905, p. 358.

Lybius vieilloti (Leach) ; Butler, Ibis, 1908, p. 246, 1909, p. 88.

[B. coll.] 5 Roseires Apl. July Aug. Sept. Sen. ; 1 El Ein Mch. Kor. ; 1 Kaka Feb., 1 Jebel Ahmed Agha Jan. U.N. ; 1 Gardain Moyan Jan., 1 Chak Chak Feb., 2 Raffali Feb. Mch., 1 Wau Apl. B.G.

[C. & L. coll.] 5 Kamisa Dec. Sen. ; 3 Jebel Ahmed Agha Mch. U.N.

[Chr. coll.] 5 Wau July Aug. B.G.

Ogilvie-Grant pointed out (Ibis, 1902, p. 426) that the West African race of this bird had considerably more red on the underparts and breast than Abyssinian and Sudanese examples, and could be distinguished under the name *L. v. rubescens* (Temm.). We follow him also in believing that Leach's type came from Abyssinia.

Tricholæma diademata diademata.

Pogonorrhynchus diadematus Heuglin, Ibis, 1861, p. 126, pl. 5. fig. 3 : West of Bahr el Abiad, between 7° and 8° N.

Tricholæma diadematum Reichw. V. A. ii. p. 135.

Tricholæma diademata diademata Claude Grant, Ibis, 1915, p. 441.

[B. coll.] 3 Mongalla Jan. and summer; 1 Lado Feb.
L.E.

Apparently not a common bird in the Sudan. Its range extends to southern Abyssinia and British East Africa, where it intergrades with *T. d. massaica*.

***Tricholæma melanocephala melanocephala*.**

Pogonias melanocephala Cretzschmar in Rüppell's Atlas, 1826, p. 41, pl. 28 : Kordofan.

This species, said to have been obtained by Rüppell in Kordofan and Sennar, is not represented by Sudanese examples in the Museum, nor has it been met with by Butler. There is a good series of Abyssinian specimens in the National collection. Possibly Rüppell's birds really came from Abyssinia.

***Pogoniulus chrysoconus schubotzi*.**

Barbatula chrysocoma schubotzi Reichw. O. M. 1912, p. 28 : Ft. Archambault, Shari River.

Barbatula chrysocoma apud Butler, Ibis, 1908, p. 247, 1909, p. 88.

Pogoniulus chrysoconus schubotzi (Reichw.) ; Claude Grant, Ibis, 1915, p. 446.

[B. coll.] 1 Makwak, 1 Buval Jan., 1 Chak Chak Feb.,
1 Meshra el Rek May, B.G.

We agree with Claude Grant's revision of this group (Ibis, 1915, pp. 444-447) except that the material before us now extends the range of *P. c. schubotzi* to the Bahr el Ghazal and confines that of *P. c. zedlitzi* to the lower White and Blue Niles, if not to Sennar alone. The specimens from the Ubangi river, which Grant referred to the typical form, are, we believe, not that form but *P. c. centralis*.

Of the Sudanese forms, *P. c. zedlitzi* is distinguished from *P. c. schubotzi* by its slightly paler yellow underside

and distinctly yellower back, the edges of the light-coloured feathers of the mantle being bright yellow and not white.

Dr. Otto von Wettstein has also described a race from Kordofan (Anz. k. Akad. Wien, 1916, no. 13, p. 131) which from the description does not appear to differ from *P. c. schubotzi*; but we have no examples from that region, and it may be quite a valid subspecies.

***Pogoniulus chrysoconus zedlitzi*.**

Barbatula chrysocoma zedlitzi Neum. Bull. B. O. C. xxiii. 1909, p. 30: Sennar.

Pogoniulus chrysoconus zedlitzi Claude Grant, Ibis, 1915, p. 446.

[B. coll.] 1 Roseires July, 1 Abu Shogal Apl. Sen.

[C. & L. coll.] 1 nr. Sennar, 4 Kamisa Dec. Sen.

***Pogoniulus pusillus uropygialis*.**

Barbatula uropygialis Heuglin, J. f. O. 1862, p. 37: Ain Saba, Eritrea; Reichw. V. A. ii. p. 152.

This bird is recorded by Heuglin (Orn. N.O.-Afr. p. 762) from Khartoum and the Blue Nile. We have seen no Sudanese examples of this bird, and Mr. Butler never met with it. It is distinguished from the *P. chrysoconus* group by its red forehead and more reddish rump, and is represented in the Museum by specimens from Abyssinia and Somaliland.

***Trachyphonus margaritatus margaritatus*.**

Bucco margaritatus Cretzschmar, Atlas, 1826, p. 30, pl. 20: Sennar.

Trachyphonus margaritatus Reichw. V. A. ii. p. 156; Butler, Ibis, 1905, p. 358, 1908, p. 247, 1909, p. 401.

[B. coll.] 2 Erkowit Mch., 1 Talgwareb Apl., 1 Kamob-sana Mch., 1 Khor Arbat May, R.S.; 3 nr. Fatasha Jan. & Feb. Kh.; 1 Setit River May, Kas.

[C. & L. coll.] 2 Port Sudan Dec., 2 Erkowit Apl., 1 Sinkat Mch. R.S.; 1 Kamisa Dec. Sen.

The three specimens from Fatasha in the Butler collection are markedly more orange on the breast and back of the

neck than the other examples. Lake Chad examples, however, collected by Boyd Alexander, appear to be quite typical. Zedlitz, O. M. 1910, p. 57, has separated the Somaliland birds by their paler underside as *T. m. somalicus*, and this is borne out by the series in the Museum.

Trachyphonus darnaudii darnaudii.

Micropodon darnaudii Des Murs in Lefebvre, Abyss. 1850, p. 133: Kordofan.

Trachyphonus arnaudi Reichw. V. A. ii. p. 157; Butler, Ibis, 1908, p. 247.

[B. coll.] 11 Bor Jan. May, July, Aug. Sept. **Mon.**

We have no examples from anywhere near the type-locality, so we can only follow Dr. Reichenow in believing southern specimens to be identical with those from Kordofan.

Family INDICATORIDÆ.

Indicator indicator.

Cuculus indicator Gmelin, Syst. Nat. i. pt. 1, 1788, p. 418: South Africa.

Indicator indicator (Gm.) and *Indicator major* Steph.; Reichw. V. A. ii. pp. 104, 106.

Indicator sparrmani Steph.; Butler, Ibis, 1905, p. 357, 1908, p. 245, 1909, p. 87.

[B. coll.] 1 Roseires Aug. **Sen.**; 1 Wau Jan., 3 Pongo R. Feb., 1 Kojali Mch. **B.G.**; 2 Mongalla Jan. July; 1 Lado Feb., 2 Rejaf, Jan. Apl. **L.E.**

[Chr. coll.] 1 Mt. Baginzi Mch. **B.G.**; 3 Yei Sept. **L.E.**

We follow Claude Grant (Ibis, 1915, p. 430) in regarding *I. indicator* and *I. major* as merely plumage phases of the same bird and also in not recognizing any racial forms of this species.

Indicator minor diadematus.

Indicator diadematus Rüppell, N. Wirbelt. 1835, p. 61: Abyssinia.

Indicator minor diadematus Rüpp.; C. Grant, Ibis, 1915, p. 432.

Indicator minor apud Butler, Ibis, 1909, p. 87.

[B. coll.] 2 Roseires Apl. July, Sen.; 3 Mongalla summer, 2 Kenisa summer, 1 Shamba Dec. Mon.

[C. & L. coll.] 1 Kamisa Dec. Sen.; 1 nr. Lake No Meh. U.N.

We follow Claude Grant in referring these birds to Rüppell's *diadematus*, from which we believe, notwithstanding what Zedlitz (J. f. O. 1915, p. 11) states, Ogilvie-Grant's *I. lovati* cannot be distinguished.

Indicator exilis pygmæus.

Indicator pygmæus Reichw. Sitzb. D. O. G. 1891, p. 4; id. J. f. O. 1892, p. 24: Bukoba; id. V. A. ii. p. 112.

[Chr. coll.] 1 Tembura Apl. B.G.

This Honey-Guide exactly matches a series in the Museum from Cameroon collected by Bates which have been identified as *I. exilis*; from this last, however, they all differ in their considerably larger size, the wing measuring in *I. e. pygmæus* 73–80 mm. as compared with 63–67 of the true *exilis* from Gaboon.

This form combines the heavily-striped back of the *exilis* with the larger size of the *minor* group, and appears to form a link between the two.

Prodotiscus regulus regulus.

Prodotiscus regulus Sundev. Öfv. Ak. Förh. 1850, p. 109: Natal; Reichw. V. A. ii. p. 114.

[B. coll.] 3 south of Roseires, Apl. & May, Sen.

These birds appear to be indistinguishable from the typical race of this species from southern and central Africa. The wing-measurement in each case is 80 mm. Our birds have the two outer pairs of tail-feathers, which are considerably worn, pure white. It appears that these feathers, when they first appear, are brown and wear to white. *P. r. peasei* O.-Grant of southern Abyssinia, as pointed out by C. Grant (Ibis, 1915, p. 437), only differs by its slightly larger size.

Feeds on the flowers of the "Tartar" tree (*Sterculia cinerea*), on which I always found it (*A. L. B.*).

Family CUCULIDÆ.

Clamator glandarius.

Cuculus glandarius Linn. Syst. Nat. 10th ed. 1758, p. 111: North Africa and South Europe.

Coccytes glandarius (Linn.); Reichw. V. A. ii. p. 81; Butler, Ibis, 1905, p. 257, 1908, p. 245, 1909, p. 87.

Clamator glandarius (Linn.); Hartert, Vög. pal. Faun. p. 955.

[B. coll.] 1 Erkowit Mch. 25, R.S.; 1 Roseires July 16, Sen.; 1 Tawela June 24, U.N.; 1 Dud Majok Mch. 31, 1 nr. Rumbek Jan. 11, 2 Madal May 5, B.G.; 1 Kajo Kaji Mch. 31, L.E.

[C. & L. coll.] 1 Erkowit Apl. 7, R.S.

From the dates given above it appears to be not unlikely that the Great Spotted Cuckoo breeds in the Sudan, as it certainly does in South Africa. The bird collected by Butler at Erkowit is abnormally large, the wing measuring 224 mm. against the usual 190 to 210. Another bird in the British Museum from Suakim, collected by Capt. Penton, measures 222, and a third, collected by G. Blaine, but without locality, probably also from the Sudan, attains to 225. Whether this indicates the existence of a larger race breeding somewhere in Asia cannot at present be settled, but it seems worth while drawing attention to the matter.

Clamator cafer.

Cuculus cafer A. Lichtenstein, Cat. rer. rar. Hamb. 1793, p. 14: Kaffirland, *i. e.* eastern Cape Colony.

Coccytes cafer (Licht.); Reichw. V. A. ii. p. 76; Butler, Ibis, 1909, p. 87.

[B. coll.] 1 Roseires Aug. 25, Sen.; 2 Tembura Mch. 3, B.G.; 1 Mongalla "summer."

[Chr. coll.] 1 Yambio Mch. B.G.

Clamator jacobinus jacobinus.

Cuculus jacobinus Boddaert, Tabl. Pl. Enl. 1783, p. 53: Coromandel coast of India, ex Daubenton.

Coccystes jacobinus (Bodd.) ; Reichw. V. A. ii. p. 78 ;
Butler, Ibis, 1908, p. 245.

[B. coll.] 1 Khartoum Aug. ; 1 Malakal June, U.N. ;
2 Mongalla "summer," 1 Bor May, Mon.

[Chr. coll.] 1 Tembura Apl. B.G.

Hartert (Nov. Zool. xxii. 1915, p. 254) has recently suggested that it might be possible to recognize the African bird as distinct from that of India, in which case the name of our bird should be *Clamator jacobinus pica* (*Cuculus pica* Hempr. & Ehr. Symb. Phys. 1828, fol. r. : Ambukol in Dongola).

We have measured the wings of the large series of Indian and African birds in the British Museum, and our results are almost exactly the same as those of Hartert, the African birds averaging 154, the north Indian 149, the south Indian 144, and the Singalese 138. If these slight differences are considered to be sufficient ground for doing so we must recognize three or four races, but there is no other tangible difference.

Butler states that this Cuckoo breeds near Khartoum, and that he believes *Argya acaciæ* is the probable foster-parent.

Pachycoccyx validus.

Cuculus validus Reichw. Orn. Centralb. 1879, p. 139 :
Muniuni, Tana river, B.E.A.

[Chr. coll.] 1 Yambio, 2 Mt. Baginzi Mch. B.G.

This remarkable Cuckoo is an addition to the Sudan fauna. It was met with by Emin at Tingasi on the upper Welle, but its occurrence in the Bahr el Ghazal extends its range considerably farther northwards.

Cuculus canorus.

Cuculus canorus Linn. Syst. Nat. 10th ed. 1758, p. 110 :
Europe ; Butler, Ibis, 1905, p. 356, 1908, p. 245, 1909, p. 87.

[B. coll.] 1 Roseires Sept. 13, Sen. ; 1 Gedaref Apl. 21,
Kas. ; 5 Khartoum July 24-31 Apl. 19.

[Chr. coll.] 1 Mt. Baginzi Mch. B.G.

Two of these Cuckoos have distinctly finer barring on the

underside than is usual in the European form, as also has one collected by Hawker at Fashoda. This last is referred by Hartert to *C. c. telephonus*, but as the type of that subspecies came from Japan, we prefer not to commit ourselves to any racial name at the moment. The dates of capture of these specimens are of interest. It is surprising to record European Cuckoos from Khartoum in July.

A common winter migrant; most pass through and go farther south (*A. L. B.*).

Cuculus gularis.

Cuculus gularis Stephens in Shaw's Gen. Zool. ix. 1815, p. 83, pl. 17: Camdeboo, Cape Colony (ex Levaillant); Reichw. V. A. ii. p. 91.

[B. coll.] 1 Fazogti May, **Sen.**; 1 Mongalla July-Sept.,
2 Bahr el Zeraf June, **Mon.**

A widely-distributed resident (*A. L. B.*).

Cuculus solitarius.

Cuculus solitarius Stephens in Shaw's Gen. Zool. ix. 1815, p. 84: Caffraria (*i. e.* eastern Cape Colony) ex Levaillant.

[B. coll.] 1 south of Karia river Apl. 15, **L.E.**

[Chr. coll.] 3 Yambio Meh., 1 Tembura Apl. **B.G.**

Cuculus jacksoni.

Cuculus jacksoni Sharpe, Bull. B. O. C. xiii. 1902, p. 7: Toro, Uganda.

[Chr. coll.] 1 Yambio Meh., 1 Mt. Baginzi Meh. **B.G.**

We have examined all the examples of the *C. solitarius* group in the Museum, and we find that it is distributed all over Africa from the Gold Coast and Abyssinia to Cape Colony.

The forms known as *C. gabonensis* and *C. jacksoni* apparently occupy thickly forested districts within the distribution area of *C. solitarius* and must, we think, at our present state of knowledge, be regarded as distinct species.

Of *C. jacksoni* the Museum possesses the type from Toro, a good series from the Mbira forest in Uganda (*Seth-Smith*), an example from the slopes of Kenya (*Delamere*), and two large series from N'Dalla Tando in northern Angola

(*Ansorge*), and the Charada forest in southern Abyssinia (*Zaphiro*), which we are unable to distinguish from the Uganda bird.

With regard to *C. mabiræ* (Somerén, Bull. B. O. C. xxxv. 1915, p. 116), this species, of which we have examined the type and two other examples at Tring, is as nearly as possible intermediate between *C. solitarius* and *C. gabonensis*.

Of *C. gabonensis* we have examples from Gaboon and Cameroon (*Bates*). There is a good description of this form in the Catalogue (vol. xix. p. 259), and it need not detain us here. We cannot accept *C. aurivillii* Sjöst. from Cameroon as distinct from *C. gabonensis*, as the character of the absence of the white spot of the tail is obviously a variable one.

The relationship of the *solitarius* group with *C. clamosus*, the Black Cuckoo, which is also found all over Africa, is very obscure, as is also the relationship of *C. solitarius* and *C. gabonensis*. There appear to be a series of intermediate forms (which has been called *C. jacksoni*) between *C. clamosus* and *C. solitarius*. There is also a series of intermediate forms (called *C. mabiræ*) between *C. gabonensis* and *C. solitarius*. It is possible that these may be regarded either as three separate species intergrading in certain areas, or as three species in process of evolution from one form within those areas.

The type of *C. mabiræ* has practically no barring on the underside, but we regard this as unusual, as the other specimens are barred as in *C. solitarius*.

Chrysococcyx caprius.

Cuculus caprius Boddaert, Tabl. Pl. Enlum. 1783, p. 40 : Cape of Good Hope.

[B. coll.] 1 juv. nr. Giggling summer, Mon.

The Emerald Cuckoo is recorded from Fazogli by Heuglin, but is evidently a rare bird in the Sudan. It is more abundant in southern Abyssinia, and there is a good series in the Museum from the Jimma and Kaffa districts collected by Zaphiro.

We follow Claude Grant (*Ibis*, 1915, p. 417) in his conclusions in regard to nomenclature.

Chrysococcyx auratus.

Cuculus auratus Gmelin, Syst. Nat. i. pt. i, 1788, p. 421 : Cape of Good Hope.

Chrysococcyx cupreus auct. ; Reichw. V. A. ii. p. 94 ; Butler, Ibis, 1909, p. 87.

[B. coll.] 1 Tawela June, **U.N.** ; 3 Bahr el Zeraf June 12 & 14, 3 Giggling "summer," 8 Mongalla "summer," **Mon.** ; 1 Meshra el Rek May 10, **B.G.**

[Chr. coll.] 2 Tembura Apl. **B.G.** ; 1 Yei Dec. **L.E.**

Claude Grant has shown (Ibis, 1915, p. 417) that the name *C. cupreus* Bodd. is non-existent, and we must therefore adopt Gmelin's name for this species.

Chrysococcyx klaasi.

Cuculus klaasi Stephens in Shaw's Gen. Zool. ix. 1815, p. 128 : Cape Colony (ex Levaillant).

Chrysococcyx klaasi (Steph.) ; Reichw. V. A. ii. p. 98 ; Butler, Ibis, 1908, p. 245.

[B. coll.] 10 Roseires Apl. 18-27 May 11 July 10 Aug. 1-30 Sept. 5-21, 1 Famaka May 3, **Sen.** ; 2 Kátta Jan. 31, **B.G.**

[Chr. coll.] 3 Meridi Jan. & Feb., 1 Wau July-Aug. **B.G.**

Centropus grillii.

Centropus grillii Hartlaub, J. f. O. 1861, p. 13 : Gaboon.

Centropus nigrorufus (nec Cuv.) Reichw. V. A. ii. p. 70.

[B. coll.] 1 Bahr el Zeraf June, **U.N.**

Claude Grant in 'The Ibis' for 1915, p. 419, gives reasons for not accepting Cuvier's name for this species, and also discusses the races of it. As, however, we have no material from the type-locality, we prefer not to commit ourselves to any subspecific name. As compared with Nyasaland birds, which Neumann pronounced as identical with the typical race, our specimen shows a somewhat bluer metallic sheen on the head, but this is not so pronounced as in Claude Grant's description of *C. g. ceruleiceps*. We know of no previous record from the Sudan.

***Centropus monachus fischeri*.**

Centropus fischeri Reichw. J. f. O. 1887, p. 57: Niakatschi, N.E. Victoria Nyanza; id. V. A. ii. p. 64.

Centropus monachus apud Butler, Ibis, 1905, p. 356, 1908, p. 245.

[B. coll.] 1 Jebel Ahmed Agha May, 1 Lake No Feb., 1 Abu Kika May, **U.N.**; 1 Bor "summer," **Mon.**

[C. & L. coll.] 1 Jebel Ahmed Agha Jan., 1 Tonga Feb., 2 White Nile lat. 12° N. Jan., 1 White Nile lat. 9½° N. long. 31° E. Feb. **U.N.**

[Chr. coll.] 1 Tembura Apl., 1 Meridi Jan. **Ber.**

We have followed Claude Grant's revision of the races of this species (Ibis, 1915, p. 421) and consider *Centropus heuglini* Neum. Verh. V. Intern. Ornith. Kongr. 1910, 1911, p. 504, pl. i., from the Bahr el Ghazal, to be identical with this race.

For some reason the birds collected by Messrs. Chapman and Lynes are quite noticeably darker than either the Christy or Butler specimens, though collected at the same time of year, and in some cases in the same localities. The stomach of one of these specimens is stated to have contained a large Reed-Warbler, probably one shot by Capt. Lynes half an hour before, and this is said to be a not uncommon trick of these birds.

***Centropus senegalensis senegalensis*.**

Cuculus senegalensis Linn. Syst. Nat. 12th ed. 1766, p. 169: Senegal.

Centropus senegalensis (Linn.); Reichw. V. A. ii. p. 58.

Centropus monachus nec Rüpp.; Butler, Ibis, 1909, p. 87.

[B. coll.] 1 east of Rumbek Jan. **B.G.**

[C. & L. coll.] 1 Mouth of Zeraf river Feb. **U.N.**

[Chr. coll.] 3 Meridi Jan., 1 Yambio Meh. **B.G.**

This species has also been reviewed by Claude Grant (Ibis, 1915, p. 423), and we agree with his revision from the present material at our disposal. In the J. f. O. 1915,

p. 124, Reichenow describes another race from Lake Chad under the name of *C. s. tschadensis*. We have only one specimen from that exact locality, and so we cannot say whether or not the differences he points out are constant, but if they are, it is a very local race, as specimens from the Niger as well as the Shari and Welle are certainly the typical race.

C. senegalensis is not unlike *C. m. fischeri*, but may always be distinguished by its dull green and not blue head and nape.

***Centropus superciliosus superciliosus*.**

Centropus superciliosus Hempr. & Ehr. Symb. Phys. 1828, fol. 1: S. Arabia; Reichw. V. A. ii. p. 65; Butler, Ibis, 1905, p. 357.

Centropus superciliosus superciliosus Hempr. & Ehr.; Claude Grant, Ibis, 1915, p. 424.

[B. coll.] 1 Eilafun Jan. **B.N.**; 1 Roseires July, 1 Sowleit Apl. **Sen.**; 1 north of Khartoum; 1 Reuk Jan., **U.N.**; 1 Rejaf Feb. **L.E.**

[C. & L. coll.] 1 Sennar Jan., 2 Kamisa Dec. **Sen.**; 1 White Nile lat. $10\frac{3}{4}^{\circ}$ N., **U.N.**

***Ceuthmochares æreus intermedius*.**

Ceuthmochares intermedius Sharpe, J. Linn. Soc. London, xvii. 1884, p. 432: Semmio, Niam Niam Country.

Ceuthmochares æreus intermedius Reichw. V. A. ii. p. 74.

[Chr. coll.] 1 Meridi Jan., 1 Tembura Apl., 3 Yambio Meh. **B.G.**

This race is distinguished from typical *C. æ. æreus* from the Congo by its greener and less blue back, but we confess that it is with some hesitation that we keep the two races separate. Our birds are still more green than the type of the subspecies from Semmio. This bird does not appear to have been previously recorded from the Sudan, though not uncommon in Uganda and on the upper Welle.

Family MUSOPHAGIDÆ.

Turacus leucolophus.

Corythaix leucolophus Heuglin, J. f. O. 1855, p. 65 : Bahr el Abiad, *i. e.* Upper White Nile.

Turacus leucolophus (Heugl.) ; Butler, Ibis, 1908, p. 244, 1909, p. 86.

[B. coll.] 3 Kátta Jan., 1 Pongo river Feb., 2 Chak Chak Feb., 2 Kojali Feb. Mch., 3 Tembura Mch. B.G. ; 2 Kajo Kaji Mch. L.E.

[Chr. coll.] 8 Meridi Jan. Feb. B.G. ; 1 Yei Dec. L.E.

Turacus leucotis.

Corythaix leucotis Rüppell, N. Wirbelt. 1835, p. 8, pl. 3 : Abyssinia.

The Abyssinian Plantain-eater is recorded by Heuglin from Fazogli, and there is a specimen in the British Museum labelled "White Nile," but the latter is of doubtful authenticity.

Butler states : "Probably works down the Blue Nile from Abyssinia to Fazogli in the rains. I never met with it."

Musophaga violacea rossæ.

Musophaga rossæ Gould, P. Z. S. 1851, p. 93 : Loanda (see C. Grant, Ibis, 1915, p. 413) ; Reichw. V. A. ii. p. 29.

[Chr. coll.] 1 Yambio Mch. B.G.

This species has not previously been met with in the Bahr el Ghazal, though known from Semmio (*Bohndorff*). It ranges through Uganda and Belgian Congo to Cameroon and Angola.

Chizærhis zonurus.

Chizærhis zonurus Rüppell, N. Wirbelt. 1835, p. 9, pl. 4 : Temben, Abyssinia.

Schizorhis zonurus Butler, Ibis, 1905, p. 356, 1908, p. 244, 1909, p. 87.

[B. coll.] 1 Gallabat Apl. Kas. ; 1 Pongo river Feb., 1 Tonj river Jan., 4 Tembura Mch. B.G.

[Chr. coll.] 4 Meridi Jan., 3 Yambio Mch. B.G.

This Plantain-eater appears to us to be sufficiently distinct from the West African form to merit specific distinction.

Family TROGONIDÆ.

Apaloderma narina narina.

Trogon narina Stephens in Shaw's Gen. Zool. ix. 1815, p. 14: Knysna.

Apaloderma narina narina (Steph.); C. Grant, Ibis, 1915, p. 406.

[B. coll.] 3 Roseires July Sept. Sen.

A rare bird found at Roseires in the rainy season and also observed at Kajo Kaji, L.E. (A. L. B.); Heuglin records it from Fazogli, Sen.

Family COLIIDÆ.

Colius striatus leucotis.

Colius leucotis Rüppell, Mus. Senck. iii. 1845, p. 42, pl. 2: Tamben, N. Abyssinia; Reichw. V. A. ii. p. 204 part; Butler, Ibis, 1905, p. 356.

[B. coll.] 1 Setit river May, Kas.; 2 Roseires Aug. & Sept. Sen.

This race is confined to northern Abyssinia. Eritrea, and the adjacent part of the Sudan.

Colius striatus erlangeri.

Colius striatus erlangeri Zedlitz, O. M. 1910, p. 58, and J. f. O. 1910, p. 756, pl. 10: Adis Ababa.

Colius striatus jebelensis Mearns, Proc. U.S. Nat. Mus. xlviii. 1915, p. 394: Gondokoro.

[B. coll.] 3 Abu Kika May, 3 Mongalla, 2 Bor, 1 Shambe "summer," Mon.

[Chr. coll.] 2 Yei Nov. L.E.

We cannot agree with Claude Grant in his review of the races of this species in 'The Ibis,' 1915, p. 402. We consider that on our present material we must admit the validity of both this race from south-western Abyssinia, and of *C. s. hilgerti* from central and eastern Abyssinia. The present race differs

from *C. s. leucotis* from northern Abyssinia by its darker throat, more sharply defined white ear-coverts, and finer barring of the mantle, whereas *C. s. hilgerti* is still darker than *C. s. erlangeri*. The plate in the J. f. O. 1910, though not perhaps as accurate as might be wished, nevertheless gives a very fair idea of the differences between the three forms. With regard to *C. s. jebelensis* Mearns, from Gondokoro, we cannot ourselves make out any distinction between it and *C. s. erlangeri* Zedl.

Mearns does not in his description compare the two forms though he mentions the plate in the J. f. O. Our present good series from the upper Nile agrees very well with the figure of *C. s. erlangeri* there depicted, and we can find nothing in Mearns' description incompatible with that of Zedlitz. We must therefore consider Mearns' name as a synonym. The race differs from *C. s. nigricollis*, as we have indicated under that species.

Colius striatus nigricollis.

Colius nigricollis Vieill. Nouv. Dict. d'Hist. Nat. vii. 1817, p. 378 : Malimbe, Congo ; Reichw. V. A. ii. p. 203.

Colius leucotis nec Rüpp., Butler, Ibis, 1909, p. 86.

[B. coll.] 2 Kojali Feb. B.G.

[Chr. coll.] 2 Meridi Feb., 1 Mt. Baginzi Mch. B.G.

This is an extension of the known range of this race: it is found through Portuguese and French Congo to Cameroon, and, like many other species, enters our limits by way of the Welle valley. Its distinction from the upper Nile race, *C. s. erlangeri*, is obvious at a glance, owing to the much deeper and greater extent of black on the throat, the heavier barring of the chest, and the complete lack of white on the ear-coverts.

Colius macrourus macrourus.

Lanius macrourus Linn. Syst. Nat. 12th ed. 1766, p. 134 : Senegal.

Colius macrourus (Linn.) ; Reichw. V. A. ii. p. 210 ; Butler, Ibis, 1905, p. 356, 1908, p. 243.

[B. coll.] 1 Jebel Kerbosh Mch. R.S. ; 3 Khartoum July, 1 Fatasha Jan. Kh. ; 5 Mongalla July-Sept.

[C. & L. coll.] 2 Sinkat Mch. R.S. ; 2 Kamisa Dec. Sen. ;
1 White Nile lat. 11° N. Jan. U.N.

[Gurney coll.] 1 Meroë Feb. Ber.

We have no hesitation in assigning all the birds from the Sudan to the typical race. There is one example from the Baro river in the Museum, collected by Zaphiro, which is quite remarkably dark below and blue above. This led Claude Grant (Ibis, 1915, p. 406) to suppose that the darker East African race, *C. m. pulcher* Neum., extended north into the Sudan up to the Baro river. Our birds from Mongalla, however, show that this is not the case, and probably the boundary between *C. m. macrourus* and *C. m. pulcher* is somewhere about Lake Albert, though one from Lado is somewhat intermediate. In Abyssinia *C. m. syntactus* is stated by Claude Grant to be identical with *C. m. macrourus*.

Family MICROPODIDÆ:

***Micropus apus apus*.**

Hirundo apus Linn. Syst. Nat. 10th ed. 1758, p. 192 : Europe, restricted type-locality Sweden.

Apus apus apus (Linn.) ; Hartert, Vög. pal. Faun. p. 836.

Cypselus apus (Linn.) ; Butler, Ibis, 1905, p. 344.

[B. coll.] 1 Kaka June 3, U.N.

***Micropus apus kollibayi* ?**

Apus apus kollibayi Tschusi, Orn. Jahrb. xiii. 1902, p. 234 : Curzola I., Dalmatia ; Hartert, Vög. pal. Faun. p. 837.

[B. coll.] 2 Bahr el Jebel, 1 Lake No May 14 & 16,
U.N.

Of these four specimens of Swifts, three seem to belong to the long-winged race which, according to Hartert, breeds in southern Dalmatia and probably elsewhere in southern Europe. The wing-measurements of these three examples, all males, are 184, 178, and 174 mm. The other specimen which we refer to *M. a. apus* has a wing of 165 mm. At

the same time we would point out that the dates of capture of these birds are very remarkable if they were going to breed in Europe that year. We rather wonder therefore if there is not a breeding race of Swift in the Sudan, corresponding to the considerably smaller Abyssinian breeding race, *M. a. shelleyi*. It is probable also that the browner Asiatic race, *M. a. pekinensis*, also passes through the Sudan in winter, though the only record of its occurrence that we can find is one mentioned by Hartert from Gondokoro.

***Micropus apus shelleyi*.**

Cypselus shelleyi Salvad. Ann. Mus. Civ. Gen. xxix. 1888, p. 227 : Dembi, Shoa.

Apus shelleyi (Salvad.) ; Reichw. V. A. ii. p. 373.

Antinori is said to have obtained specimens of this small Abyssinian race of Swift from Berber. He named it *C. dubius*, but in his original description, Cat. coll. uccelli, 1864, p. 25, he says "equal in size to *C. murarius*" = *M. a. apus*. We should require further confirmation therefore before admitting it to the Sudanese list.²

***Micropus melba melba*.**

Hirundo melba Linn. Syst. Nat. 10th ed. 1758, p. 192 : Straits of Gibraltar.

Apus melba melba Hartert, Vög. pal. Faun. p. 834.

[B. coll.] 1 Kajo Kaji Mch. 27, L.E.

We are strongly inclined to assign this bird to the European race and not to the African. If we are right, it will then be the first record from what may be termed "tropical" Africa. The only constant differences we can find between *M. m. melba* and *M. m. africana*, is that the latter is usually darker and has a broader breast-band and a smaller extent of white on the throat. The wing-measurements do not differ much. This specimen is a pale-coloured bird with a narrow breast-band and a large amount of white on the throat, and we can in no way distinguish it from European examples. Wing 213 mm.

There is also in the Museum collection a bird from

Ruwenzori, collected by Blaine in February, wing 219 mm., which we are also inclined to assign to the present race. Ruwenzori is the type-locality of *M. m. maximus* O.-Grant, but this is a very much larger and darker resident form.

Micropus affinis.

Cypselus affinis Gray & Hardw. Ill. Ind. Zool. i. 1832, pl. 35. fig. 2: India.

This species, which ranges throughout India and Africa, must no doubt occur in the Sudan, and Heuglin records it from eastern Sennar, but we are not certain as to whether it is this species or *M. horus* that is referred to, since Heuglin considered the latter a variety of *M. affinis*.

Micropus horus.

Cypselus horus [Hartl. & Finsch in MSS.] ; Salvad. & Antin. Atti R. Accad. Torino, viii. 1872, p. 94: Wad Medani, Blue Nile.

Apus horus (Salvad. & Antin.) ; Reichw. V. A. ii. p. 381.

[C. & L. coll.] 1 Blue Nile, 20 miles above Sennar, Sen.

This specimen, a female of small size, wing 143 mm., against 153 given for the type by Salvadori, comes from close to the type-locality, and is the first specimen received by the Museum from the Sudan. This species is distinguished from *Micropus caffer streubeli* by the shortness of its tail.

Micropus caffer streubeli.

Cypselus streubeli Hartl. J. f. O. 1861, p. 418: Keren (*vide* Heuglin, *ibid.* p. 422).

Apus streubeli (Hartl.) ; Reichw. V. A. ii. p. 381.

Cypselus affinis nec Gray & Hardw., Butler, Ibis, 1905, p. 342.

[B. coll.] 1 Gedaref June, Kas. ; 1 Rejaf Apl. L.E.

Mr. Butler apparently did not distinguish between this Swift and the true *M. affinis* without a forked tail, so we are unable to say anything of its distribution.

This form has a strongly forked tail, thus differing from

M. horus with a slightly forked tail and *M. affinis* without a fork. *M. c. streubeli* differs from *M. c. caffer* only in its slightly smaller dimensions.

Tachornis parvus parvus.

Cypselus parvus Licht. Verz. Doubl. 1823, p. 58: N.E. Nubia.

Tachornis parvus (Licht.); Reichw. V. A. ii. p. 283; Butler, Ibis, 1905, p. 344, 1908, p. 239.

[B. coll.] 2 Khartoum Apl.; 1 Malakal May, U.N.

[C. & L. coll.] 2 Jebel Ahmed Agha Jan. U.N.

Widely distributed wherever Dom or Doleib palms occur. The two eggs are glued to the bottom of the nest, which can be turned upside down without their falling out (A. L. B.).

Family CAPRIMULGIDÆ.

Caprimulgus europæus europæus.

Caprimulgus europæus Linn. Syst. Nat. 10th ed. 1758, p. 193: "Habitat in Europa & America," restricted type-locality, Sweden; Butler, Ibis, 1905, p. 344.

Caprimulgus europæus europæus Hartert, Vög. pal. Faun. p. 846.

[B. coll.] 3 Khartoum Sept. 9–Oct. 25.

Caprimulgus europæus unwini.

Caprimulgus unwini Hume, Ibis, 1871, p. 406: west of Kashmir.

Caprimulgus europæus unwini Hartert, Vög. pal. Faun. p. 849.

[B. coll.] 3 Khartoum Oct. 21 & 24.

Both these forms of the Common Nightjar winter in the Sudan, but we have no evidence of two other subspecies recognized by Hartert, *C. e. meridionalis* and *C. e. sarudnyi*, both of which might be presumed to come to the Sudan in winter.

Another Nightjar, marked "♂ Khartoum 18/x./07," is rather different from the others, being a good deal smaller, wing 165 mm., against 178 and over in *C. e. unwini*. It

has, however, the appearance of youth and matches very closely, except for size, an example of *C. e. unwini* from Sirsa in the Punjab now in the Museum. We can only provisionally identify it with this species. Dr. Hartert has also examined this bird and writes, "If not a young *C. e. unwini*—and I do not think it is, being so very small—it must be an unknown species or a hybrid, for it is not any other known species."

***Caprimulgus inornatus*.**

Caprimulgus inornatus Heuglin, Orn. Nordost-Afr. i. 1869, p. 129: Bogosland.

[Chr. coll.] 1 Meridi Jan., 3 Mt. Baginzi Mch. B.G.

This Nightjar was met with by Mr. Butler in the Kaji Kaji plateau, but is not represented in the collection in the Museum.

One of Dr. Christy's examples is in the grey phase and three are in the red phase. This latter, judging by the series in the Museum, is more usually met with to the westward, while the birds from Bogosland and Somaliland are more usually in the grey phase; but some of these latter approach the reddish phase, though the colour is never so rich as in the West African examples. A nestling from Mt. Elgon collected by R. Kemp is distinctly in the red phase.

***Caprimulgus natalensis chadensis*.**

Caprimulgus chadensis Alexander, Bull. B. O. C. xxi. 1908, p. 90: Lake Chad.

Caprimulgus natalensis chadensis Claude Grant, Ibis, 1915, p. 303.

[B. coll.] 1 west of Tonga Mch. U.N.

[C. & L. coll.] 1 Lake No Feb.; 5 White Nile lat. $9\frac{1}{2}^{\circ}$ N. long. 31° E. Feb. U.N.

We have followed Claude Grant in his revision of the races of this Nightjar, though we have grave doubts as to whether this subspecies is really separable from *C. n. natalensis*. The wings of our specimen measures ♂ ♂ 154, 156, 160, 161 mm., ♀ ♀ 149, 152 mm.

Caprimulgus eximius.

Caprimulgus eximius Temminck, Pl. Col. livr. 67, 1826, pl. 398 : Sennar ; Butler, Ibis, 1905, p. 344, 1908, p. 239.

[B. coll.] 1 Shendi Mch. **Ber.**

[Gurney coll.] 1 Meroë Feb. **Ber.**

Butler has written at length on the distribution and breeding of this Nightjar in the Sudan.

Caprimulgus ægyptius ægyptius.

Caprimulgus ægyptius Lichtenstein, Verz. Doubl. Mus. Berlin, 1823, p. 59 : Upper Egypt ; Reichw. V. A. ii. p. 361 ; Butler, Ibis, 1905, p. 345, 1908, p. 239.

[B. coll.] 3 Shendi Mch. **Ber.** ; 1 Khartoum Dec. ; 1 Junction of Bahr el Homar and Bahr el Ghazal Mch. **B.G.**

[C. & L. coll.] 2 Kamisa Dec. **Sen.** ; 2 Lake No, Feb. **B.G.**

Caprimulgus nubicus nubicus.

Caprimulgus nubicus Licht. Verz. Doubl. Mus. Berlin, 1823, p. 59 : Nubia.

Caprimulgus nubicus nubicus Hartert, Vög. pal. Faun. p. 851.

There are two examples of this, the typical form, in the Museum collected by the Hon. C. N. Rothschild at Nakheila and Shereik in the Berber province. There are no specimens in the present collections.

Caprimulgus nubicus tamaricis.

Caprimulgus tamaricis Tristram, Proc. Zool. Soc. London, 1864, pp. 170, 430 : Dead Sea Basin.

Caprimulgus nubicus tamaricis Hartert, Vög. pal. Faun. p. 852.

Caprimulgus nubicus apud Butler, Ibis, 1908, p. 400.

[B. coll.] 1 Khor Arbat May, **R.S.**

This example differs considerably from the Berber specimens in the distinctly greyer and less sandy tone of the

upper surface, and resembles closely a series from the Aden district, and one from Zoulla on the shores of the Red Sea near Massowah collected by Blanford. The Arabian birds are referred by Hartert to Tristram's species. We have seen Palestine examples in the Tring Museum and are in agreement with this view.

Caprimulgus trimaculatus tristigma.

Caprimulgus tristigma Rüppell, Neue Wirbelt. 1840, p. 105 : Gondar.

Caprimulgus trimaculatus tristigma Claude Grant, Ibis, 1915, p. 307.

[B. coll.] 1 Jebel Fazogli May, Sen.

Claude Grant has monographed this group of Nightjars in 'The Ibis,' 1915, pp. 306-308, and we agree with his conclusions. In the Proceedings of the Biological Society of Washington, xxvi. 1913, p. 167, Dr. J. C. Phillips describes a new Nightjar under the name of *Caprimulgus eleonoræ* from Fazogli. Mr. A. L. Butler, Ibis, 1915, p. 181, who has seen Dr. Phillips' coloured plate, unhesitatingly identifies it with the above species.

Scotornis climacurus.

Caprimulgus climacurus Vieill. Gal. Ois. i. 1825, p. 195, pl. 122 : Senegal.

Scotornis climacurus (Vieill.) ; Reichw. V. A. ii. p. 368 ; Butler, Ibis, 1905, p. 347, 1908, p. 240, 1909, p. 84.

[B. coll.] 1 Shendi Mch. Ber. ; 1 Kamlin Mch. B.N. ;
1 Hillet Abbas Dec. W.N. ; 1 Renk Mch. U.N.

[C. & L. coll.] 1 Senga Dec. Sen. ; 1 Jebel Ahmed
Agha Mch., 1 White Nile lat. 12° N. Mch., 2 Tonga
Mch. U.N.

[Chr. coll.] 1 Meridi Jan. B.G.

This little long-tailed Nightjar, according to Mr. Butler probably the commonest of its family in the Sudan, has a remarkable range of variations. These variations are generally geographically constant, but not always. They cannot therefore be regarded as subspecies, unless one

admits a large percentage of wanderers from other districts. The explanation probably lies in the colour or nature of the soil. In Senegal and again in northern Nigeria round Lake Chad the palest form occurs. This is a bird of which the general tone is pale grey and yellow. Next, from Gambia round the coast to Southern Nigeria and along the Shari comes a form with a distinctly rufous or vinous tinge, which is particularly noticeable on the shoulders and wing-coverts. Thirdly, from the upper Welle and western Lado Enclave comes a form of which the prevailing tinge is rich rufous, almost chocolate. A fourth form from the White Nile below Kaka and from the Blue Nile is most like the Senegal form, but the yellow is richer and the scapulars more boldly marked. The last form and the most distinct of all is very dark grey, almost black, and comes from the country east of Lake No to the Sobat river and about as far north as Kaka on the White Nile.

Of the examples in the present collections most of the birds belong to the fourth form alluded to above, but the two from Tonga in the Chapman & Lynes collection are very richly coloured specimens of the fifth and last-mentioned group, while the Meridi bird approaches the rufous form from the upper Welle and Lado.

Macrodipteryx longipennis.

Caprimulgus longipennis Shaw, Nat. Misc. viii. 1796, pl. 265: Sierra Leone.

Macrodipteryx macrodipterus (Afz.); Reichw. V. A. ii. p. 370.

Macrodipteryx longipennis (Shaw); Butler, Ibis, 1905, p. 345, 1908, p. 239, 1909, p. 84; C. Grant, Ibis, 1915, p. 302.

[B. coll.] 1 Gedaref May, **Kas.**; 1 Gardain Apl., 1 Tonj Jan. **B.G.**; 1 Mongalla, summer.

[Chr. coll.] 1 Meridi Jan. **B.G.**

Mr. Butler has written at some length on this species, which is a resident and known to breed in the Sudan.

Cosmetornis vexillarius.

Semeiophorus vexillarius Gould, Icon. Av. ii. 1838, pl. xiii. : Sierra Leone.*

Macrodipteryx vexillarius (Gd.) ; Reichw. V. A. ii. p. 371.

[B. coll.] 2 Mongalla (one a wing only), summer, Mon.

[Chr. coll.] 1 Wau Aug., 1 Mt. Baginzi Mch. B.G.

Mr. Chapin (Bull. Amer. Mus. N. Y. xxxv. 1916, pp. 73-78) has recently written a very interesting account of the transequatorial migrations of this Nightjar. His conclusions are that it breeds in southern Africa only between the months of September and November, and migrates northwards in February to the grass country of the Welle, the Sudan, and Nigeria. An examination of the material in the Museum confirms Mr. Chapin's statements as to dates, but the bird does not appear to come north of Lake No.

Family MEROPIDÆ.***Merops apiaster.***

Merops apiaster Linn. Syst. Nat. 10th ed. 1758, p. 117 : southern Europe ; Reichw. V. A. ii. p. 320 ; Butler, Ibis, 1905, p. 350, 1909, p. 490.

[B. coll.] 2 Shendi 2 May, Ber. ; 2 Khartoum 15 & 25 Apl. ; 2 Gedaref 29 Apl. Kas.

[C. & L. coll.] 2 Erkowit 5 Apl. R.S. ("from a flock of 30 flying north"—W. C. Lowe).

"An abundant cold weather migrant" (*A. L. B.*).

* In Gould's original description he writes "Little is known respecting this singular species further than that it inhabits the islands lying between those of Bourbon and Madagascar ; that it is numerous on the shores of the Red Sea and in the Island of Scutra (? Socotra)." In the National collection there is an old dismantled specimen with the following on the ticket : "Jas. Barlow Esq., Sierra Leone. Orig. descr. J. Gould Esq., under the name of *Caprimulgus vexilla* copied from under stand of bird which was mounted in bird-gallery." This specimen, Mus. reg. no. 55/12/19/63, was purchased at the disposal of the Zoological Society's Museum. Curiously enough it is omitted in the Cat. Bds. B. M. xvi. p. 598 ; but we see no reason why it should not be accepted as the type of the species and the locality accepted as the type-locality, especially as the bird is not known from Madagascar, Bourbon, or the intervening islands.

Merops persicus persicus.

Merops persica Pallas, Reise versch. Prov. russ. Reichs, ii. 1773, p. 78: Caspian sea; Butler, Ibis, 1905, p. 351, 1909, p. 400; Reichw. V. A. ii. p. 322.

[B. coll.] 1 Khor Arbat May 16, **R.S.**; 1 ♀ imm. Khartoum May 21; 1 Kenisa Jan. 21, **Mon.**; 1 Lado Feb. 10, **L.E.**

[C. & L. coll.] 6 near Lake No. Feb. Mch. **U.N.**

[Chr. coll.] 3 Yambio Mch. **B.G.**

The Persian Bee-eater is a common winter bird throughout the greater part of Africa. Young birds are exceedingly difficult to distinguish from those of the allied species *M. superciliosus*, of which there is a large series in the Museum from Madagascar, East Africa, Uganda, Nyasaland, and Angola, and a single example from Abyssinia. The young bird from Khartoum taken on 21 May might possibly be referred to this species, and there seems to be no valid reason why it should not be found in the Sudan.

Merops lamark viridissimus.

Merops viridissimus Swainson, Birds W. Afr. ii. 1837, p. 82: Senegal.

Merops viridis apud Butler, Ibis, 1905, p. 351, 1908, p. 242, 1909, p. 85.

[B. coll.] 6 Khartoum Feb. & May; 1 Kaka May, **U.N.**

[C. & L. coll.] 4 Sinkat Mch. **R.S.**; 1 Kamisa Dec. **Sen.**; 1 Jebelein Jan. **W.N.**

This race appears to range from Senegal to the Sudan. We have no specimens from Senegal, but a small series from Lake Chad collected by Alexander average slightly smaller than the Sudan birds, wing 87 mm. against 91.5.

Parrot, O. M. xviii. 1910, p. 13, describes a race from Eritrea as *M. viridis reichenowi*, and it is probable that the Sudan birds are intermediate if this latter race proves to be recognizable.

There is also a race breeding in Egypt, *M. l. cleopatra*

Nicoll, Bull. B. O. C. xxvii. 1910, p. 11 : Mazghouna near Cairo, of which Nicoll has seen specimens from the Sudan. It is distinguished by its greener, less golden colour, wing-measurement of British Museum examples averaging 63 mm. We cannot, however, find any Sudanese birds in these or the British Museum collections which we can definitely assign to this race.

Dr. Hartert points out (Nov. Zool. xvii. 1910, p. 482) that this species must now be known as *M. lamark* Cuvier.

Merops nubicus nubicus.

Merops nubicus Gmelin, Syst. Nat. i. pt. 1, 1788, p. 464 : Nubia ; Reichw. V. A. ii. p. 329 ; Butler, Ibis, 1905, p. 352, 1908, p. 242, 1909, p. 85.

[B. coll.] 1 Gallabat, 1 Setit R. May, **Kas.** ; 1 Blue Nile. "winter," 1 Sherif Yakub June, **Sen.** ; 2 Bahr el Zeraf June, **U.N.** ; 2 Mongalla "summer" ; 1 Raffali Feb., 1 nr. Kojali Mch, 3 Tembura Mch. & May, **B.G.**

[C. & L. coll.] 2 Singa Dec. **Sen.**

[Chr. coll.] 6 Meridi Jan. & Feb., 1 Mt. Baginzi Mch. **B.G.**

Abundant and widely distributed (*A. L. B.*).

Merops albicollis.

Merops albicollis Vieill. Nouv. Dict. xiv. 1817, p. 15 : Senegal ; Butler, Ibis, 1905, p. 351.

Merops albicollis Reichw. V. A. ii. p. 317.

[B. coll.] 1 Setit R. May, 1 Ummat Rumeila June, **Kas.** ; 1 Fou Wells May, **Sen.** ; 4 Lado Feb. **L.E.**

[Chr. coll.] 2 Yambio Mch. **B.G.** ; 2 Yei Nov. **L.E.**

A widely distributed species in the Sudan. In the O. M. xviii. 1910, p. 12, Parrot distinguishes the eastern and north-eastern birds under the name of *Merops albicollis major* from the north-west African form, on account of their

wider black throat-band and larger size. We cannot think these differences sufficient to uphold this race.

In the very large series before us it is true that wider throat-bands appear in the north-east than in the north-west, but only exceptionally ; while the wing-measurements also seem to us insufficient grounds for separation. They are as follows for series of 20 adults from each locality :—Northern West Africa av. 97·7 ; Sudan and Uganda av. 99·7 ; north-east Africa and Arabia av. 102·7.

Melittophagus pusillus meridionalis.

Melittophagus meridionalis Sharpe, Cat. Bds. Brit. Mus. xvii. 1892, p. 45 : Natal.

Melittophagus pusillus ocularis Reichw. O. M. 1900, p. 86 : Nubia.

Melittophagus pusillus apud Butler, Ibis, 1905, p. 349, 1908, p. 242, 1909, p. 85.

[B. coll.] 1 Roseires Sept. **Sen.** ; 14 Khartoum Jan. Feb. May Sept. Oct. Nov. Dec. ; 2 Gardain May, **B.G.** ; 4 Mongalla, July–Sept.

[C. & L. coll.] 4 Senga Dec., 1 20 miles above Sennar Jan. **Sen.** ; 1 Melut Jan., 1 Renk Mch., 1 Lake No Feb. **U.N.**

[Chr. coll.] 3 Yei Dec. **L.E.**

We have followed C. Grant (Ibis, 1915, p. 295) in regarding this, the Sudanese form of the Little Bee-eater, as identical with that of South Africa.

Melittophagus variegatus variegatus.

Merops variegatus Vieill. Nouv. Dict. xiv. 1817, p. 25 : Malimbe, Congo (ex Levaillant).

Melittophagus variegatus Reichw. V. A. ii. p. 304.

This species is mentioned by Reichenow as having been secured at Meshra el Rek, **B.G.**, by Bohndorff and Schweinfurth. It is not represented in these collections, nor can we find any other record of its occurrence within our limits. There are specimens in the Museum from the headwaters of

the Welle (*Alexander*) and from Lake Albert (*Blaine* and others), but we cannot admit it to the Sudanese list without further evidence.

Melittophagus bullocki frenatus.

Merops frenatus Hartl. J. f. O. 1854, p. 257 : Sennar.

Melittophagus frenatus Butler, Ibis, 1905, p. 349, 1908, p. 241, 1909, p. 85.

Melittophagus bullocki frenatus Claude Grant, Ibis, 1915, p. 298.

[B. coll.] 2 Rahad R. Apl., 1 Roseires Aug. Sen.;
1 Pongo R., 1 Chak Chak, 1 nr. Kojali Feb., 1 Wau
Mch. B.G.; 1 Lado Feb. L.E.

[C. & L. coll.] 1 Eneikliba, 4 Kamisa Dec. Sen.

[Chr. coll.] 10 Meridi Jan. & Feb., 1 Wau July, B.G.

Apparently a common bird in the southern parts of the Sudan.

We have no hesitation in regarding *Merops boleslawskii* v. Pelz. Sitz. Ak. Wien, 1858, p. 320 : Senegal, which has been recorded by Heuglin and others from the Sudan, as simply a yellow-throated phase of this species.

Dicrocercus hirundineus heuglini.

Dicrocercus hirundineus heuglini Neumann, Bull. B. O. C. xvi. 1906, p. 113 : Bongo, B.G.

Dicrocercus furcatus (nec Stanley), Reichw. V. A. ii. p. 316 ; Butler, Ibis, 1908, p. 241, 1909, p. 85.

[B. coll.] 1 Mongalla, 1 Sheik Tombé May, Mon.;
3 Pongo river Feb., 1 S. of Kojali Mch. B.G.

[Chr. coll.] 2 Yambio Mch. B.G.; 3 Yei Nov. Dec. L.E.

As regards this form we agree with what C. Grant (Ibis, 1915, p. 293) has written.

Family IRRISORIDÆ.

Irrisor erythrorhynchus niloticus.

Irrisor erythrorhynchus niloticus Neumann, O. M. 1903, p. 181 : Goz abu Guma, W.N.; Claude Grant, Ibis, 1915, p. 284.

Irrisor erythrorhynchus (nec Lath.), Butler, Ibis, 1905, p. 352, 1908, p. 242, 1909, p. 85, 1909, p. 401.

[B. coll.] 4 Roseires Apl. Aug. Sept. Sen. ; 4 Wau Jan. & Apl. B.G.

[Chr. coll.] 3 Mt. Baginzi Mch. B.G. ; 1 Yei Nov. L.E.

We have followed Claude Grant in his revision of the genus (Ibis, 1915, pp. 281-289), but we should remark in passing that in our Sudan specimens the size of the tail-spots is not constant, three birds collected by Christy at Mt. Baginzi having very small spots, while the rest of the Bahr el Ghazal birds have large ones. We can see no difference between Bahr el Ghazal and Roseires birds.

Rhinopomastus cabanisi.

Irrisor cabanisi De Filippi, Rev. et Mag. Zool. 1853, p. 289 : White Nile, 4° & 3° N. lat.

Rhinopomastus cabanisi Reichw. V. A. ii. p. 348.

[B. coll.] 2 Mongalla "summer" & Jan. ; 1 Rejaf, Feb. L.E.

A scarce bird (*A. L. B.*).

Scoptelus aterrimus emini.

Scoptelus aterrimus emini Neumann, J. f. O. 1905, p. 197 : Njangabo, W. of Lake Albert.

Scoptelus notatus apud Butler, Ibis, 1905, p. 353, 1908, p. 242.

Scoptelus aterrimus apud Butler, Ibis, 1909, p. 85.

[B. coll.] 1 Disa Apl., 1 Roseires May, Sen. ; 1 El Duem Sept. W.N. ; 1 Malakal June, U.N. ; 1 Mongalla, "summer," 3 Sheik Tombé "summer" & Jan. Mon. ; 1 Raffali Feb., 1 nr. Tonj Jan. B.G. ; 1 Iado Feb. L.E.

[C. & I. coll.] 7 Kamisa Dec., 2 nr. Sennar Dec. & Jan. Sen. ; 1 Jebel Ahmed Agha, 1 White Nile lat. 9½° N. long. 30° 40' E. Feb. U.N.

[Chr. coll.] 1 Mt. Baginzi Mch. B.G.

Neumann has separated the forms of *Scoptelus aterrimus* as follows :—

S. a. aterrimus. Senegal to Togoland.

S. a. emini. White Nile district to Lake Albert.

S. a. notatus. Bogos, north and central Abyssinia, etc.

S. a. major. S. Abyssinian Lake district.

S. a. anchietæ. Angola.

The differences on which these races are based are chiefly those of variation of metallic gloss and the absence or amount of white in the tail-feathers. As regards the former, we cannot from the material before us consider it as sufficiently constant to separate subspecies, but the second characteristic is more constant. In Senegal *S. a. aterrimus* never has any white in the tail, in Eritrea *S. a. notatus* always has. In our Sudanese specimens, the young birds almost always have white, the adults, males at any rate, apparently never. In other words they are as nearly as possible intermediate, but inasmuch as they have been named already by Neumann, it seems the best course to keep them distinct for the present.

Family UPUPIDÆ.

***Upupa epops epops*.**

Upupa epops Linn. Syst. Nat. 10th ed. 1758, p. 117 : woods of Europe, restricted type-locality : Sweden ; Butler, Ibis, 1905, p. 352, 1908, p. 242, 1909, p. 401.

Upupa epops epops Hartert, Vög. pal. Faun. p. 867.

[B. coll.] 7 Khartoum, 7 April–24 May.

[C. & L. coll.] 2 Kamisa Dec. Sen. ; 1 White Nile lat. 14° N., W.N. ; 2 Jebel Ahmed Agha Jan., 2 Lake No Feb. U.N.

[Gurney coll.] 1 Meroë Feb. Ber.

A winter migrant to the whole of the Sudan and from Gambia to British East Africa.

***Upupa epops senegalensis*.**

Upupa senegalensis Swainson, Birds W. Afr. ii. 1837, p. 114 : Senegal ; Claude Grant, Ibis, 1915, p. 276.

Upupa butleri Madarász, Ann. Mus. Nat. Hung. ix. 1911, p. 339.

Upupa epops apud Butler, Ibis, 1909, p. 85.

[B. coll.] 1 Roseires Aug. **Sen.**; 1 Raffali Feb. **B.G.**

[Chr. coll.] 1 Mt. Baginzi Mch. **B.G.**

We have followed Claude Grant in his revision of the African Hoopoes, Ibis, 1915, pp. 276–281. *U. e. senegalensis* is distinguished from *U. e. epops*, which is a winter migrant, by its richer red back and generally by the absence of white in the crest, though this latter character is not invariable. We regard it as a resident African race of *U. epops*. There is also a resident race, *U. e. major* Nicoll, in Egypt, but we can find no occurrences outside Egypt.

Madarász, *op. cit.*, described *U. butleri* from the Blue Nile and distinguished it from *U. e. epops* by its smaller size and from *U. senegalensis* by the presence of white in the crest. This last character, as we have said, is by no means invariable in *U. e. senegalensis*, and we have examples before us from localities as far apart as Lake Chad and Somaliland which show distinct traces of white. The size of Madarász' bird is certainly small, wing 125 mm.; the Butler birds before us measuring ♂ 132, ♀ 129, and the Christy bird 131 mm. Typical West African *U. senegalensis* before us measure 132–135 mm., while Swainson's type was only 5 inches = 127 mm. We regret therefore that we can only regard *U. butleri* as a synonym of *U. e. senegalensis*.

Family BUCEROTIDÆ.

Lophoceros nasutus nasutus.

Buceros nasutus Linn. Syst. Nat. 12th ed. 1766, p. 154: Senegal.

Lophoceros nasutus Butler, Ibis, 1905, p. 354, 1908, p. 243, 1909, p. 85.

Lophoceros nasutus nasutus Claude Grant, Ibis, 1915, p. 270.

[B. coll.] 1 Musjid Apl. **B.N.**; 2 Malakal June, **U.N.**; 1 Mongalla "summer" **Mon.**; 1 Raffali Mch., 1 Wau Apl. **B.G.**

[C. & L. coll.] 1 Kamisa Dec. **Sen.** ; 1 Jebel Ahmed Agha Jan. **U.N.**

[Chr. coll.] 2 Wau July & Aug. **B.G.**

[Gurney coll.] 1 Meroë Jan. **Ber.**

Both Claude Grant *op. cit.* and Selater, *Ibis*, 1917, p. 175, have remarked on the variation in size of this species, and, as the latter suggests, it is probable that the Sudan form is intermediate between *L. n. nasutus* of Senegal and *L. n. forskalii* of Arabia. We think on the whole, however, it is best to unite it for the present with the typical form.

Lophoceros erythrorhynchus erythrorhynchus.

Buceros erythrorhynchus Temm. Pl. Col. livr. 36, 1823, sp. 19 : Senegal.

Lophoceros erythrorhynchus Butler, *Ibis*, 1905, p. 394, 1908, p. 243, 1909, p. 36.

Lophoceros erythrorhynchus erythrorhynchus Claude Grant, *Ibis*, 1915, p. 272.

[B. coll.] 1 Roseires Sept. **Sen.** ; 1 El Ein Meh. **Kor.** ;
1 Tawela June, **U.N.** ; 1 Mongalla "summer," **Mon.** ;
1 Wau Apl. **B.G.**

[C. & L. coll.] 2 Kamisa Dec., 1 nr. Sennar Jan. **Sen.** ;
1 White Nile lat. 13° N. Jan. **W.N.**

Widely distributed (*A. L. B.*).

Bycanistes subcylindricus.

Buceros subcylindricus P. L. Selater, P. Z. S. 1870, p. 668, pl. 39 : West Africa.

Mr. Butler mentions in his notes that he saw a large black *Bycanistes* with wings apparently mostly white at Kajo Kaji and Lado Nyepo in the Lado Enclave. He did not secure one, but is inclined to attribute those he saw to this species, which has been recorded from Uganda and the upper Welle.

Bucorvus abyssinicus.

Buceros abyssinicus Bodd. Tabl. Pl. Enl. 1783, p. 48 : Abyssinia.

Bucorvus abyssinicus Reichw. V. A. ii. p. 234; Butler, Ibis, 1905, p. 353, 1908, p. 242.

[B. coll.] 1 Upper Nile Feb.

Generally distributed throughout the Sudan (*A. L. B.*).

Family *ALCEDINIDÆ*.

Ceryle rudis rudis.

Alcedo rudis Linn. Syst. Nat. 10th ed. 1758, p. 116 : Egypt.

Ceryle rudis rudis Hartert, Vög. pal. Faun. p. 877.

Ceryle rudis Butler, Ibis, 1905, p. 354, 1908, p. 243, 1909, p. 86.

[B. coll.] 3 Khartoum May & Nov.; 1 Malakal May, **U.N.**; 1 Mongalla, 2 Bor "summer," **Mon.**; 1 Raffali Feb. **B.G.**

[C. & L. coll.] 2 Hassania Island, Jan. **W.N.**

Widely distributed on all rivers in the Sudan (*A. L. B.*).

Ceryle maxima.

Alcedo maxima Pallas, Spic. Zool. fasc. vi. 1769, p. 14 : Cape of Good Hope.

Ceryle maxima Reichw. V. A. ii. p. 299 : Butler, Ibis, 1905, p. 354, 1908, p. 243.

[B. coll.] 1 Gallabat Apl. **Kas.**

Apparently, from Mr. Butler's notes, a not uncommon bird on the rivers of the Sudan, but we have only seen two Sudanese examples besides the present one.

Corythornis cristata.

Alcedo cristata Vroeg, Cat. Adumb. 1764, no. 55 : Cape of Good Hope.

Corythornis cristata Claude Grant, Ibis, 1915, p. 263.

Corythornis cyanostigma (Rüpp.); Butler, Ibis, 1905, p. 354, 1908, p. 243, 1909, p. 86.

[B. coll.] 1 Gallabat May, **Kas.**; 1 Roseires Jan. **Sen.**; 2 Mongalla "summer"; 1 Chak Chak Feb., 1 Wau Apl. **B.G.**

[C. & L. coll.] 1 White Nile lat. 12° N. Jan., 1 Tonga Feb., 1 White Nile lat. $9\frac{1}{2}^{\circ}$ N., long. $30^{\circ} 40'$ E., Mch. **U.N.**

[Chr. coll.] 1 Yambio Mch. **B.G.**

Widely distributed on almost all rivers and streams in the Sudan south of the more northern parts of the White and Blue Niles, when the banks are without sedge or cover (*A. L. B.*).

Claude Grant, *op. cit.*, shows that Vroeg's name if adopted preoccupies *A. cristata* of Linnæus from Madagascar (the Madagascar bird must then be called *C. vintsioides* (Eyd. & Gerv.)), and antedates *A. cyanostigma* Rüppell from Abyssinia.

Ispidina picta picta.

Todus pictus Bodd. Tabl. Pl. Enl. 1783, p. 49: "Juida," Africa.

Ispidina picta Reichw. V. A. ii. p. 286: Butler, Ibis, 1905, p. 355, 1909, p. 86.

[B. coll.] 1 Gallabat, 1 Setit R. May, **Kas.**; 1 Roseires May, **Sen.**; 1 Abu Kika May, **Mon.**; 1 Tembura Mch. **B.G.**

[Chr. coll.] 4 Meridi Jan. & Feb., 1 Yambio Mch. **B.G.**

Also a widely distributed species.

Halcyon malimbicus prenticei.

Halcyon malimbicus prenticei Mearns, Proc. U.S. Nat. Mus. vol. 48, 1915, p. 392: Sesse Is., Victoria Nyanza.

Halcyon malimbicus apud Butler, Ibis, 1909, p. 86.

[Chr. coll.] 1 Tembura Apl. **B.G.**

Mr. Butler's example of this Kingfisher is not in the collection presented to the Museum.

We have examined the Kingfishers of this group in the Museum and our conclusions are similar to those of Dr. Sharpe (Cat. Bds. Brit. Mus. xvii. p. 246), except that an additional race inhabiting Uganda, the upper Welle, and Bahr el Ghazal must be recognized.

We have then :—

1. HALCYON MALIMBICUS MALIMBICUS.

Alcedo malimbica Shaw, Gen. Zool. viii. pt. 1, 1812, p. 66 :
“Malimba,” i. e. Gaboon.

In this form the head is blue, of almost the same shade as the back.

Distr. Gaboon south to north Angola, north to southern Cameroon (*Bates*).

2. HALCYON MALIMBICUS PRENTICEI.

Halcyon malimbicus prenticei supra.

Slightly larger, wing 118 against about 115 mm., the blue slightly paler and the crown rather darker than the neck.

Distr. Uganda north to the upper Welle (*Bohndorff* & *Alexander*), and the Bahr el Ghazal.

3. HALCYON MALIMBICUS DRYAS.

Halcyon dryas Hartlaub, J. f. O. 1854, p. 2 : St. Thomas I.
A larger bird with a longer bill.

Distr. The islands in the Gulf of Guinea—Sao Thomé, Principe, and Fernando Po. There is one bird in the Museum labelled Gaboon (*Ansell*). We cannot help thinking there is a mistake in regard to the locality of this specimen.

4. HALCYON MALIMBICUS FORBESI.

Halcyon forbesi Sharpe, Cat. Bds. B. M. xvii. 1892, p. 247, pl. 6, fig. 2 : Shonga on the Niger.

Crown ashy brown washed with greenish.

Distr. West Africa from Gambia to Cameroon Mt., and inland to northern Nigeria.

5. HALCYON MALIMBICUS TORQUATUS.

Halcyon torquatus Swainson, Bds. W. Africa, ii. 1837, p. 99 : Senegal.

Crown a dull brown sharply defined from the blue back.

Distr. Senegal.

Halcyon cyanoleucus.

Alcedo cyanoleuca Vieill. Nouv. Dict. xix. 1818, p. 401 :
Coast of Angola.

[B. coll.] 1 Bahr el Zeraf June, U.N. ; 1 Mongalla,
4 Giggling May, Mon.

The races of this group have been discussed at length by

Sharpe, Ogilvie-Grant, Mearns, and Claude Grant. *Halcyon cyanoleucus* from South Africa is distinguished by its bluish head and the black line being continued over the ear-coverts behind the eye; while *H. senegalensis* from northern West Africa has a more or less dusky head, and is without the black line behind the eye.

The range of *H. senegalensis* extends from northern Angola to Senegal, the southern birds having duskier crowns, and possibly distinguishable as *H. s. fuscopileus* Reichw.; the range of *H. cyanoleucus* extends from south Angola and Damaraland through the Transvaal and northwards (but not to Natal), and both the forms are found mingled in Uganda, the interior of British East Africa, the Sudan, and Eritrea. Whether under these circumstances we should call them subspecies or species must be determined later. We have little doubt that they interbreed.

Of the birds before us six, from south of Lake No, appear to be indistinguishable from typical South African *H. cyanoleucus*.

There are also birds in the Museum collection from the White Nile below Lake No, and one from Tonga in the present collection, which are apparently typical or nearly typical *H. senegalensis*.

We are of the opinion therefore, that while there are two definite species in their respective type localities, in the Sudan they cannot be invariably distinguished.

***Halcyon chelicuti*.**

Alcedo chelicuti Stanley in Salt's Abyss. 1814, p. lvi: Chelicut, Abyssinia.

Halcyon chelicuti Reichw. V. A. ii. p. 271.

Halcyon chelicutensis Butler, Ibis, 1905, p. 356, 1908, p. 243, 1909, p. 86.

[B. coll.] 1 Fazogli, May, Sen.; 2 Kaka Feb. & May, U.N.; 2 Giggling May, 1 Sheik Tombé "summer," Mon.; 1 Chak Chak, Feb. B.G.; 1 Kajo Kaji, Mch. L.E.

[C. & L. coll.] 2 Kamisa Dec. Sen.

[Chr. coll.] 2 Mt. Baginzi Mch. B.G.; 5 Yei Nov. & Dec. L.E.

***Halycon leucocephala leucocephala*.**

Alcedo leucocephala P. L. S. Müller, Linn. Nat. Syst. Suppl. 1776, p. 94: Senegal.

Halcyon leucocephala leucocephala Claude Grant, Ibis, 1915, p. 265.

Halcyon semicaruleus apud Butler, Ibis, 1905, p. 355, 1908, p. 243, 1909, p. 86.

[B. coll.] 1 Setit R., 1 Gallabat May, **Kas.**; 3 Roseires Apl. & Sept., 1 Abu Sheneina Apl. **Sen.**; 1 Bahr el Zeraf June, **U.N.**; 2 Mongalla "summer," **Mon.**; 1 Raffali Feb. **B.G.**

[Chr. coll.] 3 Meridi Feb., 1 Mt. Baginzi Mch., 1 & 1 juv., Tembura Apl. **B.G.**; 5 Yei Nov. & Dec. **L.E.**

We have followed Claude Grant, *op. cit.*, in his revision of the races of this group and, like him, we cannot appreciate the distinctness of Neumann's *H. l. centralis* from Uganda, to which race, if accepted, it is probable that some of our specimens would belong. Mr. Butler remarks that this species is widely distributed, especially in the rains.

Family CORACIIDÆ.

***Coracias garrulus*.**

Coracias garrulus Linn. Syst. Nat. 10th ed. 1758, p. 107: Europe, restricted type-locality: S. Sweden.

Coracias garrulus garrulus Hartert, Vög. pal. Faun. p. 872; Butler, Ibis, 1905, p. 348, 1908, p. 241.

[B. coll.] 1 Khartoum 14 Oct.

An autumn and spring migrant through the Sudan, apparently not often wintering there.

***Coracias abyssinus abyssinus*.**

Coracias abyssinus Bodd. Tabl. Pl. Enl. 1783, p. 38: Abyssinia; Reichw. V. A. ii. p. 219.

Coracias abyssinicus Butler, Ibis, 1905, p. 349, 1908, p. 241, 1909, p. 84.

[B. coll.] 1 Gedaref May, **Kas.**; 3 Khartoum May, Aug. Oct.; 1 Fachi Shoya Nov. **W.N.**; 2 west of Tonj Jan., 1 Tembura Mch., 1 Wau Mch. **B.G.**

[C. & L. coll.] 1 Senga Dec., 1 nr. Lake No Feb.
U.N.

[Chr. coll.] 6 Meridi Jan. & Feb., 2 Mt. Baginzi Mch.,
1 Yambio Mch. B.G.

[Gurney coll.] 1 Metemmah Feb. Ber.

We are by no means certain whether the north-west African race distinguished by Reichenow, O. M. 1899, p. 191, as *C. a. senegalensis* can really be upheld. At certain times, mostly between November and February, the crown becomes distinctly greener than is usual with the north-east African race, but at other times they are indistinguishable.

Coracias nœvia nœvia.

Coracias nœvia Daudin, Traité, ii. 1800, p. 258 : Senegal.

Coracias nœvia nœvia Claude Grant, Ibis, 1915, p. 262.

Coracias nœvius Butler, Ibis, 1908, p. 241.

[B. coll.] 1 Pongo river Feb. B.G. ; 1 Kajo Kaji Mch.
L.E.

Only found in the more southern parts of the Sudan.

Eurystomus afer æthiopicus.

Eurystomus afer æthiopicus Neumann, J. f. O. 1905, p. 184 : Upper Gelo, Abyssinia.

Eurystomus afer apud Butler, Ibis, 1905, p. 348, 1908, p. 240.

[B. coll.] 12 nr. Roseires Apl. June July Aug. Sept.,
1 Famaka May, Sen. ; 1 Khor Gitté, Mch. B.G.

[Chr. coll.] 2 Mt. Baginzi, 2 Yambio Mch. B.G.

We agree in the main with Neumann's subdivision of this group, J. f. O. 1905, pp. 184-6.

We recognize :—

1. E. A. AFER (Lath.)

Under surface and cheeks strongly washed with lilac ; central tail-coverts brown, outer ones blue ; back a dark earth-brown.

Range. Senegal to Congo.

2. *E. A. ÆTHIOPICUS* Neum.

Separable with difficulty from the preceding.
Under surface and tail-coverts similar, but
back distinctly lighter brown.

Range. N. Abyssinia, Eritrea, and the Sudan.
Bahr el Ghazal birds are intermediate between
this race and *E. a. afer*.

3. *E. A. RUFOBUCCALIS* Reichw.

Under surface and cheeks much less noticeably
washed with lilac; back possibly a richer red;
tail-coverts similar.

Range. Uganda and Mt. Elgon.

4. *E. A. SUAHELICUS* Neum.

Under surface and cheeks as in *afer* or *æthiopicus*,
but tail-coverts all blue.

Range. British East Africa to the Zambesi,
Nyasaland, and eastern Congo.

5. *E. A. PULCHERRIMUS* Neum.

Under surface and cheeks even more strongly
lilac than *E. a. afer* or *E. a. suahelicus*. Tail-
coverts all blue as in the latter, but more blue
on the central tail-feathers and back a deeper
red.

Range. N. Angola.

We believe this bird to be an extensive local migrant and therefore doubt how far each of these races is restricted to the range indicated.

A single specimen in the Museum, collected by the Blundell-Lovat Expedition at Quatti in north-west Abyssinia, has the tail-coverts almost black and the central tail-feathers quite black. It will probably prove to be a distinct race when more material is available.

Eurystomus glaucurus S. Müll., from Madagascar and south-east Africa to Nyasaland, is a much larger bird, wing 200 mm. against 160–185 in *E. afer*, and is quite a distinct species.

Family PSITTACIDÆ.

Psittacus erithacus.

Psittacus erithacus Linn. Syst. Nat. 10th ed. 1758, p. 99 : Guinea.

Heuglin, Orn. Nordost-Afr. p. 745, records this species as occurring in the Niam Niam country in the western watershed of the White Nile, *i.e.*, the western Bahr el Ghazal or Lado Enclave, but we do not know of any definite occurrences. It occurs so close to our limits, however, that we have little doubt it will presently be found within them.

Palæornis krameri krameri.

Psittacus krameri Scopoli, Annus I. Hist. Nat. 1769, p. 31 : Senegal; *cf.* Neumann, O. M. xxiii. 1915, p. 178.

Palæornis docilis auct., Butler, Ibis, 1908, p. 249, 1909, p. 89.

[B. coll.] 1 El Ein Mch. Kor.; 2 Mongalla summer & Jan. Mon.; 1 Wau Apl., 1 Amien May, B.G.

[Chr. coll.] 1 Wau July, B.G.

We cannot from the material before us appreciate the distinctness of *P. k. centralis* Neum. O. M. xxiii. 1915, p. 73, to which race these birds would belong. The colour and size of the bill varies considerably, and we cannot distinguish our examples from Senegal birds, though no doubt there must be in the Sudan intermediate forms between this race and *P. k. parvirostris* from Abyssinia and the Blue Nile.

Palæornis krameri parvirostris.

Palæornis parvirostris Souancé, Rev. et Mag. Zool. 1856, p. 157 : Abyssinia.

[B. coll.] 2 Roseires Aug. & Sept. Sen.

[C. & L. coll.] 2 Kamisa Dec. Sen.

This race is easily distinguishable by the greener, less yellow coloration of the head and cheeks, and by the smaller, brighter red bill.

Poicephalus meyeri meyeri.

Psittacus meyeri Cretzschmar, Atlas, 1826, p. 18, pl. xi.: Kordofan.

Poicephalus meyeri Butler, Ibis, 1905, p. 360, 1908, p. 249, 1909, p. 88.

[B. coll.] 7 Roseires July–Sept. Sen.; 2 Jebel Melbis Apl. Kor.; 1 Chak Chak Feb., 1 Wau Apl. B.G.

The races of *P. meyeri* have been discussed at length by Neumann, Nov. Zool. 1903, pp. 383–385, and by Claude Grant, Ibis, 1915, pp. 258–260. The two specimens from Kordofan are interesting as very little material has been obtained from there since Rüppell's time. At first sight these birds appear to differ markedly from Sennar or Bahr el Ghazal birds, but on closer inspection there is nothing that could not be accounted for by their undoubtedly worn condition. The yellow of the forehead is very pale indeed, and the rump is a good deal more blue than in other Sudan birds, as are also the feathers of the breast, while the back is greyer. All this, however, might be due to worn plumage, and while we ourselves suspect that more material will prove them to be a distinct race, at present we prefer to unite them with the rest of the Sudanese examples.

Poicephalus crassus.

Pionias crassus Sharpe, Journ. Linn. Soc. xvii. 1884, p. 429: Ndoruma, Niam Niam country.

[Chr. coll.] 1 Yambio Meh. B.G.

This very interesting bird is, in our opinion, in all probability the young of a race of *P. flavifrons*, as suggested by Reichenow and others. Neumann, however, in the J. f. O. for 1904, p. 376, and again in the Nov. Zool. xv. p. 382, strongly maintains that it is nothing of the sort.

This example, which appears to be only the second known, is an almost exact replica of the type, but it lacks the one or two yellow feathers in the forehead possessed by that bird. We have no young examples of *P. flavifrons* to compare it with, but Neumann, who has examined it, says it is markedly distinct in many respects. We conclude,

therefore, that if it is *P. flavifrons*, it belongs to a very distinct race. There is an excellent description in the Catalogue of Birds, xx. p. 369. Reichenow gives "Kutschugali (*i. e.* Kojali, B.G.) Bohndorff" as another locality, but we have no knowledge of specimens from there.

Agapornis pullarius ugandæ.

Agapornis pullarius ugandæ Neumann, Nov. Zool. xv. 1908, p. 388: Entebbe, Uganda.

[Chr. coll.] 4 Yambio Mch., 2 Tembura Apl., 1 Mt.

Baginzi Mch., 2 Meridi Jan. B.G.

Neumann, Nov. Zool. xv. 1908, p. 388, has described the Uganda race, to which our birds belong, as distinct from the West African, and we agree in this definition. He fixes the type locality of Linnæus' *A. pullarius* as Upper Guinea, as the bird is not known to occur in Æthiopia, *i. e.* Nubia, as given by Linnæus.

Mr. Butler notes that he met with this species in the Bahr el Ghazal and Lado Enclave, but we have not seen any of his specimens.

Family BUBONIDÆ.

Asio flammeus flammeus.

Strix flammea Pontoppidan, Danske Atlas, i. 1763, p. 617, pl. xxv.: Denmark.

Asio flammea flammea Hartert, Vög. pal. Faun. p. 987.

Asio accipitrinus auct., Butler, Ibis, 1905, p. 360.

[B. coll.] 1 Kambin Mch. B.N.

The Short-eared Owl is a winter visitor, but apparently not in any great numbers. Mr. Butler records it also from Khartoum and near Omdurman.

Asio capensis near tingitanus.

Phasmoptynx capensis a. tingitanus Loche, Expl. Scient. de l'Algérie, Ois. i. 1867, p. 99: Algeria.

Asio capensis tingitanus Hartert, Vög. pal. Faun. p. 991.

Asio capensis Butler, Ibis, 1905, p. 360, 1908, p. 249.

[B. coll.] 1 Bahr el Ghazal Apl.

[C. & L. coll.] 1 Tonga Mch. U.N.

We are not certain to which race of *A. capensis* these birds should be assigned. According to all precepts we should expect them to be nearer the South African than the northern form. As a matter of fact they are certainly nearer the latter, being distinctly redder and less grey than South African examples. They agree well with a series of five, collected by Alexander near Lake Chad, a single example from Nyasaland, and four from various localities in East Africa. As apparently the sole difference between *A. c. capensis* and *A. c. tingitanus* is one of a slight tinge of colour, we should not like to say without a great deal more material where one ended and the other began.

“A swamp owl, in the sudd of the Bahr el Jebel” (*A. L. B.*).

Bubo ascalaphus desertorum.

Bubo ascalaphus desertorum Erlanger, O. M. 1897, p. 192: South Tunisia.

There are two specimens of this desert form of *B. ascalaphus* in the Museum, one from Shendi (Rothschild and Wollaston), and one from Jebel um Durragh in Kordofan, collected by Dunn. There is also in the Tring Museum a specimen from Shendi, and all three birds are unmistakably the pale form. Whether *B. a. ascalaphus* also occurs we cannot tell.

Bubo africanus cinerascens.

Bubo cinerascens Guérin, Rev. et Mag. Zool. 1843, p. 321: Abyssinia; Butler, Ibis, 1905, p. 362, 1908, p. 250.

Bubo africanus cinerascens Neumann, J. f. O. 1914, pp. 37, 38.

[B. coll.] 2 Gedaref May, **Kas.**; 1 Khartoum Sept.;
1 Renk, 1 White Nile Mch. **U.N.**; 1 Abu Kika May,
1 Mongalla “summer,” **Mon.**; 1 Chak Chak Feb.,
1 Kojali Mch. **B.G.**

[C. & L. coll.] 1 Sinkat Mch. **R.S.**; 2 Kaka, 1 Marbeit
Mch., 1 Bahr el Zeraf Feb. **U.N.**

There has been a certain amount of confusion in the

nomenclature of this group, most of which has been corrected by Neumann, J. f. O. 1914, pp. 36-39. This species also has a rufous, or partially rufous, phase in dry countries, *e. g.*, south-west Africa, Somaliland, and in the White Nile district. This red phase was confused by Sharpe, Ibis, 1898, p. 289, and referred to by O.-Grant, Ibis, 1902, p. 438, as *Bubo abyssinicus* (Guérin). This is, however, a strikingly distinct species of *Asio* and has no connection with this group.

The races of this species are:—

1. *B. a. africanus* Temm. South Africa to Angola and Nyasaland; East African and Uganda birds are intermediate with the next form.
2. *B. a. cinerascens* Guér. N.W. & N.E. Africa and the Sudan.
3. *B. a. milesi* Sharpe. S. Arabia.

It seems possible that *Asio maculosus amerimnus* Oberholser, P. U.S. N. M. xxviii. 1905, p. 856, Durban, may have to be recognized as a paler, greyer race which extends to British East Africa, but there is such variation in the large series in the Museum that for the present we prefer to unite it with the typical race.

Bubo lacteus.

Strix lactea Temm. Pl. Col. livr. 1, 1820, pl. 4: Senegal.

Bubo lacteus Reichw. V. A. i. p. 650.

[B. coll.] 1 Blue Nile Nov.; 1 Roseires July, Sen.;

1 Tawela June, U.N.

[C. & L. coll.] 1 Kamisa Dec. Sen.; 1 White Nile, lat. 12° N., Jan. U.N.

[Chr. coll.] 1 Yambio Mch. B.G.

There do not appear to be any recognizable races of this Owl, though there is much individual variation in size and a certain amount in coloration. On the whole, south African birds are large, as are Abyssinian, and north-west African and east African are smaller, while Nyasaland and Uganda birds are darker in colour.

Otus scops scops.

Strix scops Linn. Syst. Nat. 10th ed. 1758, p. 92 : Europe, restricted type-locality: Italy.

Otus scops scops Hartert, Vög. pal. Faun. p. 978.

There are no examples of this race in the present collections, but there are several records from the Sudan which undoubtedly refer to this race as well as the following. A single specimen before us from Suakim (Capt. R. H. Penton), with a wing-measurement of 147 mm., we are inclined to assign to the typical race.

Otus scops pulchellus.

Stryx pulchella Pallas, Reise versch. Prov. Russ. Reichs, i. 1801, p. 456 : Volga, S. Russia.

Otus scops pulchellus Hartert, Vög. pal. Faun. p. 980.

[B. coll.] 1 Khartoum 22 Oct. ; 1 Taufikia Apl. U.N.

These two specimens, with wing-measurements of 161 and 162 mm., we consider undoubtedly belong to the greyer and longer-winged eastern form of the Scops Owl.

Otus capensis.

Scops capensis A. Smith, S. A. Quart. Journ. ii. 1834, p. 314: S. Africa.

[B. coll.] 2 near Roseires Apl. Sen.; 1 Chak Chak Feb. B.G.

[C. & L. coll.] 1 Kamisa Dec. Sen.

There are many named races of this Owl. The series in the Museum collection show such great variation that we shall not attempt to enter into the subspecies with only some fifty examples from the whole of Africa before us.

This species has frequently been confused with *O. scops*. One of the quickest methods of identification is that the first primary, in *O. scops* about equal to the fifth, is considerably shorter than the sixth in this species, while the wing is shorter, under 140 in this species, over 140 mm. in *O. scops*.

We know nothing of *Scops königseggi* Madarász, O. M. xx.

1912, p. 81, from the upper Blue Nile, but from its wing formula and size, it does not appear to belong to the *Otus scops* group but to the *Otus capensis*, and as he does not compare it with the latter we cannot offer an opinion.

***Otus leucotis leucotis*.**

Strix leucotis Temm. Pl. Col. livr. 3, 1824, pl. 16 : Senegal.

Otus leucotis leucotis Claude Grant, Ibis, 1915, p. 254.

Scops leucotis Butler, Ibis, 1905, p. 361, 1908, p. 249.

[B. coll.] 1 Atbara May, Ber. ; 1 Khartoum Dec. ; 1 Bara Nov. Kor.

We cannot separate Sudanese examples of the White-faced Scops Owl from typical north-west African specimens. The amount of black on the head varies with age, though of course the adults invariably have more than there is in *O. l. granti* (Kollibay) from South Africa.

***Carine noctua spilogaster*.**

Athene spilogastra Heuglin, J. f. O. 1862, p. 14 : near Massaua.

Athene noctua spilogaster Butler, Ibis, 1909, p. 401.

[B. coll.] 1 Jebel Bawati May, R.S.

[C. & L. coll.] 1 Sinkat Mch. R.S.

This Little Owl has frequently been recorded from Somaliland by various authors and collectors, but as shown by Reichenow (V. A. iii. p. 822) the Somaliland bird is totally distinct, the striped head of the present race distinguishing it at once from the plain brown or slightly spotted head of the Somaliland form. The latter must be known as *C. n. somaliensis* Reichw. (Vög. Afr. iii. 1905, p. 822). These two specimens of *C. n. spilogaster* are the first to reach the British Museum.

***Glaucidium perlatum*.**

Strix perlata Vieill. Nouv. Dict. vii. 1817, p. 26 : Senegal.

Glaucidium perlatum Claude Grant, Ibis, 1915, p. 256 ; Butler, Ibis, 1905, p. 361, 1908, p. 249, 1909, p. 86.

[B. coll.] 5 Roseires Apl.—Sept., 1 Abu Sheneina Apl. Sen.; 2 Jebil Melbis Apl. Kor.; 2 Wau Jan. & Apl. B.G.

[C. & L. coll.] 2 Kamisa Dec. Sen.

We have examined the fairly representative series of some eighty-five skins of this species in the British Museum, and are strongly in agreement with Claude Grant that no races should at present be recognized.

Family TYTONIDÆ.

Tyto alba affinis.

Strix affinis Layard, Birds S. Afr. 1867, p. 42: Cape of Good Hope.

Strix flammea apud Butler, Ibis, 1905, p. 360.

Tyto alba affinis Claude Grant, Ibis, 1915, p. 258.

[B. coll.] 1 Khartoum Meh.; 1 Bahr el Zeraf June, U.N.;
1 "Sudan."

[C. & L. coll.] 2 Jebel Zeraf Feb. U.N.

We cannot separate these Sudanese specimens from typical *T. a. affinis* (Layard) from South Africa. Whether or not any other form ever occurs in the northern parts of the Sudan, we cannot say as we have no material. In examining the whole series of Barn-Owls from Africa in the Museum collection, we found very little variation from any part of the continent, except that two birds—one from Sierra Leone, and the other from Jarko, Upper Nigeria—were rather distinct and apparently much more like *T. a. alba* from southern Europe.

Family FALCONIDÆ.

Falco peregrinus peregrinus.

Falco peregrinus Tunstall, Orn. Brit. 1771, p. 1: Great Britain.

Falco peregrinus peregrinus Hartert, Vög. pal. Faun. p. 1043.

[C. & L. coll.] 1 Marbeit Jan. U.N.

We have no doubt that this is a specimen of the typical Northern European Peregrine, although it is a long way out

of its known range and is probably merely a wanderer. The broad black cheek-stripe distinguishes it from *F. p. calidus*, which also occurs in the Sudan. It is an adult female with a wing-measurement of 359 mm.

Falco peregrinus calidus.

Falco calidus Latham, Ind. Orn. i. 1790, p. 41 : India.

Falco peregrinus calidus Hartert, Vög. pal. Faun. p. 1046.

[B. coll.] 1 Khartoum Dec.

Another northern race visiting the Sudan in winter. The breeding-grounds of this bird are to the east of those of the ordinary Peregrine, and its usual winter quarters are India, the East India islands, and southern China.

Falco peregrinus babylonicus.

Falco babylonicus P. L. Selater, Ibis, 1861, p. 218, pl. 7 : Oudh.

Falco peregrinus babylonicus Hartert, Vög. pal. Faun. p. 1053.

[B. coll.] 4 Khartoum Oct. Jan. & July 29 ; 1 Ruffaa
June 19, B.N.

[Gurney coll.] 1 Meroë Feb. Ber.

The majority of these Falcons have been examined by Dr. Hartert and we have followed his identification. There is a little doubt as to whether two of the birds listed above (both quite immature) are this race or the next, but it is certainly interesting to find both forms occurring in the Sudan as well as two of the more northern races. This race breeds in western Asia.

Falco peregrinus pelegrinoides.

Falco pelegrinoides Temminck, Pl. Col. livr. 81, 1829, pl. 479 : Nubia.

Falco peregrinus pelegrinoides Hartert, Vög. pal. Faun. p. 1051.

[B. coll.] 4 Khartoum Nov. Dec. Feb.

This form, known as the Barbary Falcon, inhabits northern Africa and visits the Sudan in winter, possibly also breeding.

Falco peregrinus minor.

Falco minor Schlegel, Abh. Geb. Zool. & Vergl. Anat. pt. 2, iii. 1844, p. 20: "Mountains of Cape of Good Hope."

Falco peregrinus minor Hartert, Vög. pal. Faun. p. 1050.

Mr. Butler records this species as breeding at Jebel Fazogli in Sennar, and one or more of his specimens are in the Tring Museum. This is the African Peregrine, and we believe this to be the most northern record. (*Cf.* Hartert, "Notes on Falcons," Nov. Zool. xxii. 1915, p. 173.)

Falco biarmicus abyssinicus.

Falco biarmicus abyssinicus Neumann, J. f. O. 1904, p. 369: Shoa; Hartert, Vög. pal. Faun. p. 1056.

[B. coll.] 4 Roseires Apl., 1 Dinder river Mch., 1 Barankur, Apl., 1 Abd el Karim Nov., 1 Abu Hejar Apl. Sen.; 1 Khartoum Dec.; 1 Bara Apl. Kor.; 1 Kaka Jan., 1 Meshra Rom Feb. U.N.; 1 Rejaf Hill Apl. L.E.

[C. & L. coll.] 2 Kodok (Fashoda) Jan. & Mch., 1 Renk Mch., 1 near mouth of Bahr el Zeraf Mch., 1 Touga Feb. U.N.

This is undoubtedly the common form of the Lanner in the Sudan. Dr. Hartert was kind enough to look over all these Falcons for us and we entirely agree with his conclusions. For the distinctions of all the races of the Peregrine and Lanner we may refer to his "Notes on Falcons," Nov. Zool. xxii. 1915, pp. 167-185.

Falco biarmicus tanypterus.

Falco tanypterus Schlegel, Krit. Übers. ii. 1844, p. 11: Nubia; Butler, Ibis, 1905, p. 364, 1908, p. 250.

Falco biarmicus tanypterus Hartert, Vög. pal. Faun. p. 1056.

[B. coll.] 2 Khartoum Jan.

A much rarer bird than the last race, and we have only these two specimens from the Sudan that we can definitely assign to this race.

Falco subbuteo subbuteo.

Falco subbuteo Linn. Syst. Nat. 10th ed. 1758, p. 89 : Europe, restricted type-locality : Sweden.

Falco subbuteo subbuteo Hartert, Vög. pal. Faun. p. 1071.

[B. coll.] 2 Khartoum Oct. 17 & 19.

A regular winter migrant to tropical Africa, passing through the Sudan in spring and autumn.

Falco subbuteo cuvieri.

Falco cuvieri A. Smith, S. A. Quart. Journ. i. 1830, p. 392 : Kei river, E. Cape Colony ; Reichw. V. A. i. p. 630.

[Chr. coll.] 3 Mt. Baginzi Meh. **B.G.**

There is in the Museum collection an example of this species collected by Emin at Lado ; otherwise these are the first specimens from the Sudan. We see no reason why the African Hobby should not be regarded as a race of the European. One of the birds apparently not fully adult has two well-marked red patches on the sides of the nape.

Falco concolor.

Falco concolor Temm. Pl. Col. 1825, pl. 330 : text not figure : (Senegal errore !) coasts of Barbary ; Reichw. V. A. i. p. 629.

An example of this species is believed to have been obtained by Hemprich and Ehrenberg at Ambukol in Dongola, and was described by them as *Falco schistaceus*. According to Zedlitz, J. f. O. 1914, p. 674, this is a synonym of *F. concolor*. We know of no other Sudanese examples.

Falco ruficollis.

Falco ruficollis Swainson, Birds W. Afr. i. 1837, p. 107, pl. 2 : Senegal ; Reich. V. A. i. p. 631 ; Butler, Ibis, 1905, p. 364, 1908, p. 250, 1909, p. 89.

[B. coll.] 1 Roseires Feb. **Sen.** ; 1 Khartoum Aug. ; 4 Malakal May, 2 Taufikia Jan. & Apl. **U.N.** ; 1 Sheik Tombé, 1 Kenisa Jan. **Mon.** ; 1 Wau Meh. **B.G.**

[C. & L. coll.] 1 20 miles above Sennar Jan., 1 Kamisa Dec. **Sen.**; 1 Kaka Jan., 1 Kodok Jan., 1 mouth of Zeraf river Mch. **U.N.**

[Chr. coll.] 1 Wau July, **B.G.**

Widely distributed south of Khartoum on Blue Nile, White Nile, etc., its range largely coinciding with that of the Doleib Palm, its favourite tree (*A. L. B.*).

Hierofalco cherrug cherrug.

Falco cherrug Gray in Hardwicke's Ill. Ind. Zool. ii. 1833-34, pl. 25 : India.

Falco cherrug cherrug Hartert, Vög. pal. Faun. p. 1059.

Falco sacer auct., Butler, Ibis, 1905, p. 362.

[B. coll.] 3 Khartoum Nov. & Dec.

The Saker Falcon seems a rare winter visitor to the Sudan. Mr. Butler notes it as mainly occurring in the northern Sudan, but he saw one pair at Kajo Kaji in the Lado Enclave.

Tinnunculus tinnunculus tinnunculus.

Falco tinnunculus Linn. Syst. Nat. 10th ed. 1758, p. 90 : Europe, restricted type-locality : Sweden.

Falco tinnunculus tinnunculus Hartert, Vög. pal. Faun. p. 1082.

Tinnunculus alaudarius and *Cerchneis tinnunculus* Butler, Ibis, 1905, p. 365, 1908, p. 251.

[B. coll.] 5 Khartoum Feb. Mch. & Dec.; 1 Kajo Kaji Mch. **L.E.**

[C. & L. coll.] 1 Sinkat Mch. **R.S.**; 1 Senga, 1 Sennar Dec. **Sen.**; 1 White Nile lat. 15° N. Jan. **W.N.**; 1 Jebel Ahmed Agha Jan., 1 near Lake No Feb. **U.N.**

[Chr. coll.] 2 Meridi Feb. **B.G.**

It appears to us that all the Sudanese specimens before us belong to the typical European form, which, of course, is only a winter migrant to the Sudan. *T. t. rupicolæformis* from Egypt, so far as we know, does not occur in the Sudan, though we have very little material from the north of the country. It has distinctly a more reddish tinge on

the underside, and though some of our examples have an inclination in that direction, there are none that are as bright as typical Egyptian specimens.

Tinnunculus tinnunculus carlo.

Cerchneis tinnunculus carlo Hartert & Neumann, J. f. O. 1907, p. 592 : Bissidimo near Harar, Abyssinia.

This is the African resident form of the common Kestrel, and may be distinguished at a glance—in adult males at least—by its darker and richer coloration and by its tail, which always retains traces of the transverse black bars. We have seen no Sudanese examples, but as we have specimens in the Museum from Nigeria on one side and Abyssinia and Somaliland on the other, we have little doubt that it will be found to occur in the southern parts of our region.

Tinnunculus naumanni naumanni.

Falco naumanni Fleischer, Sylvan, 1818, part v. art. 10, p. 174 : Germany.

Falco naumanni naumanni Hartert, Vög. pal. Faun. p. 1080.

Tinnunculus cenchris Butler, Ibis, 1905, p. 365.

[B. coll.] 1 Gedaref Apl. **Kas.** ; 1 Abū Haraz Nov.,
1 Blue Nile "winter," **Sen.** ; 2 Shendi May 2 & 3,
Ber.

[C. & L. coll.] 1 White Nile lat. 10° N. Jan. **U.N.**

Widely distributed in winter in the Sudan. It is possible that the eastern form *T. n. pekinensis* also occurs, but we have no positive evidence of it. It is distinguished by the greater amount of blue on the wing-coverts of the male.

Tinnunculus alopex alopex.

Tinnunculus alopex Heuglin, Ibis, 1861, p. 69, pl. iii. : Gallabat.

Cerchneis alopex (Heugl.) ; Reichw. V. A. i. p. 638.

[B. coll.] 1 Jebel Zeraf Feb. **U.N.** (ex C. & L. coll.) ;
1 Rejaf Hill Apl. **L.E.**

[C. & L. coll.] 1 Jebel Zeraf Jan., 6 Jebel Zeraf Feb. **U.N.**

Widely distributed on granite hills from Kordofan southwards (*A. L. B.*).

Reichenow has described a paler form of this species from Mangu in the Gold Coast hinterland (O. M. 1899, p. 190) as *Cerchneis a. deserticola*. We have a specimen from Gambaga before us which is certainly slightly paler. It agrees almost exactly with the Jebelein specimen. It may be, therefore, that if this paler desert race is recognizable, it extends to the White Nile, but not to the Bahr el Ghazal.

Erythropus vespertinus vespertinus.

Falco vespertinus Linn. Syst. Nat. 12th ed. 1766, p. 129: Ingria, *e. g.* Province of Petrograd.

Falco vespertinus vespertinus Hartert, Vög. pal. Faun. p. 1078.

Erythropus vespertinus Butler, Ibis, 1905, p. 365.

[B. coll.] 2 Khartoum Nov. & Jan.

Irregular in occurrence, abundant one winter and then not seen for years (*A. L. B.*).

The eastern form *F. v. amurensis*, which occurs in South Africa in winter, has not yet been recorded from the Sudan, and its migration route probably lies well to the east, though we should not be surprised if it did wander into our limits.

Dissodectes ardosiaceus.

Falco ardosiaceus Vieill. Enc. Méthod. iii. 1823, p. 1238: Senegal.

Cerchneis ardosiacea Reichw. V. A. i. p. 636.

Cerchneis ardesiacus Butler, Ibis, 1908, p. 251, 1909, p. 89.

[B. coll.] 1 Roseires Apl. Sen. ; 1 Moyen Jan., 1 Tonj Jan. B.G.

[Chr. coll.] 1 Yei Nov. or Dec. L.E.

Rarely seen in the northern Sudan, commoner towards the south.

Poliohierax semitorquatus.

Falco semitorquata A. Smith, Report Exp. 1836, p. 44: Old Iatakoo, Bechuanaland.

Poliohierax semitorquatus Reichw. V. A. i. p. 645.

The African Falconet is reported by Heuglin from the upper Nile near Gondokoro, and from the Bahr el Ghazal Province. We know of no later examples.

Pernis apivorus apivorus.

Falco apivorus Linn. Syst. Nat. 10th ed. 1758, p. 91: Europe, restricted type-locality: Sweden.

Pernis apivorus apivorus Hartert, Vög. pal. Faun. p. 1181.

[B. coll.] 1 Erkowit Apl. 3, R.S.

A rare winter visitor to the eastern half of Africa. So far as we know this is the first record from the Sudan. Our specimen, a male, has a wing of 424 mm., and is presumably referable to the typical race.

Elanus caeruleus.

Falco caeruleus Desf. Hist. de l'Acad. R. des Sc. Paris, 1787-1789, p. 503, pl. xv.: Environs of Algiers.

Elanus caeruleus Reichw. V. A. i. p. 615; Butler, Ibis, 1905, p. 365, 1908, p. 251.

[B. coll.] 5 Mongolia July-Sept. Mon.; 1 Kajo Kaji Apl. L.E.

[C. & L. coll.] 1 nr. Lake No Mch. U.N.

[Chr. coll.] 1 Tembura Apl. B.G.

The range of the Black-shouldered Kite in its various forms is, except in cold climates, practically cosmopolitan.

Milvus migrans migrans.

Falco migrans Bodd. Tabl. Pl. Enl. 1783, p. 28: France (*apud* Hartert).

Milvus migrans migrans Hartert, Vög. pal. Faun. p. 1169.

The only definite Sudanese record we can trace is that of an example secured by Emin at Lado in April. This specimen, which we have examined, is an undoubted adult Black Kite. The adult is easily distinguishable from the

adult of both races of the Yellow-billed Kite by its black bill. The adult Black Kite is also distinguished from the young of the two yellow-billed races, which also have a black bill, by its whiter head combined with red-brown adult plumage. We should not like to give any distinctions between the young of all three races.

***Milvus migrans aegyptius*.**

Falco aegyptius Gmelin, Syst. Nat. i. pt. 1, 1788, p. 261: Egypt.

Milvus migrans aegyptius Hartert, Vög. pal. Faun. p. 1171.

We have no evidence that the true Egyptian Kite ever occurs in the Sudan. It is distinguished from the common Kite of the Sudan, generally called "Egyptian," by its lighter, more reddish, colour and paler head; the tail also is usually a good deal more reddish. We agree with Hartert in treating the Yellow-billed Kites as subspecies of *M. migrans*. We include this species in our list as there is in the Museum collection an example from Kenia in British East Africa, which we cannot separate from the Egyptian form, and also because we have no Kites from the north of the Sudan and cannot therefore say where the dividing line between this race and the next comes.

***Milvus migrans parasitus*.**

Falco parasitus Daudin, Traité, ii. 1800, p. 150: South Africa (ex Levaillant).

Milvus migrans parasitus Hartert, Vög. pal. Faun. p. 1172.

[C. & L. coll.] 1 Jebelein Jan., 1 White Nile, lat. $9\frac{1}{2}^{\circ}$ N.
long. $30^{\circ} 40'$ E. Mch. U.N.

[Chr. coll.] 1 Wau July, B.G.

From an examination of the Kites in the Museum collection, it is evident to us that the South African Kite ranges throughout Africa to Abyssinia, the Sudan, and north-west Africa to the Gold Coast and Gambia. Birds from Somaliland and south Arabia are almost exactly intermediate between this form and the last.

Milvus migrans subsp.?

[C. & L. coll.] 5 Erkowit Apl. R.S.

These five Kites are in very worn plumage and are thus not very easy to determine. They have the crown of the head almost white with very narrow blackish central streaks, and in this respect resemble *M. m. migrans*, but one of the five has a yellow bill, which would be more characteristic of *M. m. aegyptius*. On the other hand, they are smaller than the typical Egyptian Kite, the wings averaging 405 mm. against 430 to 450 for the Egyptian bird. They agree best with other Kites from the Red Sea coast, Aden and Somaliland, and appear to be an intermediate race between *M. m. aegyptius* and *M. m. parasitus*, as is suggested by Hartert (Vög. pal. Faun. p. 1172).

Chelictinia riocourii.

Elanoides riocourii Vieill. & Oud. Gal. Ois. i. 1823, p. 43, pl. 16: Senegal.

Nauclerus riocouri Reichw. V. A. i. p. 617; Butler, Ibis, 1905, p. 365.

[B. coll.] 1 Malakal, Jan. U.N. (ex C. & L. coll.).

[C. & L. coll.] 5 Malakal, Jan. U.N.

Mr. Butler saw the African Swallow-tailed Kite frequently in Kordofan and less frequently in the Blue Nile country. Messrs. Chapman, Lynes & Lowe came on a densely packed flock in a tree at Malakal and the above six specimens were killed with one shot.

The characteristic black patch on the under wing-coverts appears to be present only in the female and to constitute a sexual distinction. The under wing-coverts in the male are pure white. Of the series above, three are males with wing-measurements 223, 227, and 230 mm. respectively, and three females measuring 227, 240, and 245. The small series of this rare species in the British Museum, which includes Vieillot's type from the Riocour collection, confirms this sexual distinction. Salvadori (Ann. Mus. Civ. Genova, xxi. 1884, p. 59) commented on the presence or absence of the black patch on the under wing-coverts, and

believed it to be a matter of youth and age. We cannot help suspecting that Antinori's birds were not carefully sexed and that Salvadori was misled by this.

We find that the type of the genus *Nauclerus* Vigors (Zool. Journ. ii. 1825, p. 386) is undoubtedly (by subsequent designation of Gray, List Gen. Bds. 1840, p. 4) *Falco jorficatus* Linn., the American Swallow-tailed Kite, and is therefore a synonym of *Elanoides* of Vieillot. We are therefore forced to fall back on *Chelictinia* Lesson (Echo du Monde Savant, 1843, p. 6), the type of which is undoubtedly the present species.

Haliaëtus vocifer.

Falco vocifer Daudin, Traité, ii. 1800, p. 65: Coasts of Cape Colony (ex Levaillant).

Haliaëtus vocifer Reichw. V. A. i. p. 605; Butler, Ibis, 1905, p. 366, 1908, p. 251.

[B. coll.] 1 Sobat river May, **Kas.**

[C. & L. coll.] 1 Kamisa Dec. **Sen.**; 1 near Lake No Feb. **U.N.**

In the J. f. O. 1910, pp. 388–390, Zedlitz, following Brehm and Heuglin, has separated the race from the Sudan and north-east Africa, under the name *H. v. clamans* Brehm. His wing-measurements for this race are ♂ 505, ♀ 530 mm., while those for the east and south African race are given as ♂ 520–550, ♀ 563–580 mm. Our own adult specimens, both males, from the eastern Sudan measure 528 and 535 mm., and so come within the limits of the larger race. We therefore prefer to keep the two forms united at present.

Terathopius ecaudatus.

Falco ecaudatus Daudin, Traité, ii. 1800, p. 54: “Anteniquoi country,” *i. e.* Knysna district, Cape Colony.

Helotarsus ecaudatus Reichw. V. A. i. p. 598; Butler, Ibis, 1905, p. 366, 1908, p. 251, 1909, p. 402.

[B. coll.] 1 Abu Sheneina May, **Sen.**

This is an old male of the light-backed form, known as *T. leuconotus* Rüpp., and is apparently only a variety or

plumage stage of the ordinary Bateleur. Mr. Butler records the red-backed form from throughout the entire Sudan, and the light-backed from Sennar, Kordofan, and the Lado Enclave. Reichenow believes that the light-backed phase is the plumage of very old birds. In this case it is interesting to note that Claude Grant while at Beira from November to February saw a large number of Bateleur Eagles, every one of which was the light-backed form.

Butastur rufipennis.

Poliornis rufipennis Sund. Cefv. Ak. Förh. 1850, p. 131 : near Khartoum.

Butastur rufipennis Reichw. V. A. i. p. 597 ; Butler, Ibis, 1905, p. 368, 1908, p. 253, 1909, p. 89.

[B. coll.] 1 Kodok Jan., 1 Malakal May, U.N. ; 1 Amien May, B.G.

[C. & L. coll.] 1 Taufikia, 3 near Kodok, 2 White Nile lat. 10° N. Jan. U.N.

[Chr. coll.] 1 Wau July, B.G.

Widely distributed in the Sudan and much given to local movements from time to time. The bird from Wau is probably immature, and is very much paler than any of the other specimens.

Circaëtus gallicus.

Falco gallicus Gmelin, Syst. Nat. i. pt. 1, 1788, p. 259 : Gallia (*i. e.* France).

Circaëtus gallicus Hartert, Vög. pal. Faun. p. 1189.

[B. coll.] 1 Sherif Yakub Oct. B.N.

[C. & L. coll.] 1 Fashoda (Kodok) Jan. U.N.

The Short-toed Eagle is a winter visitor from Europe and western Asia to the Sudan, and thereby differs from all the other members of the genus occurring there, which are residents in Africa. The bird from Sherif Yakub is less white and more brown on the chest than is usual, and in that respect approaches *C. beaulouini*, but the latter is more slaty-grey than brown and the barring of the underside is very much finer.

***Circaëtus beaudouini*.**

Circaëtus beaudouini Verr. & Des Murs, Ibis, 1862, p. 212, pl. vii. : Bissao ; Reichw. V. A. i. p. 575.

We have seen no examples of this species from the Sudan, and it is possible that finely-marked examples of *C. gallicus* have been mistaken for it, but Heuglin's description (Orn. Nordost-Afr. i. p. 86 under *C. fasciatus*) is a very good one, and there is no reason why its range should not extend to Kordofan, as is stated by Heuglin.

***Circaëtus pectoralis*.**

Circaëtus pectoralis A. Smith, S. A. Quart. Journ. 1830, p. 109 : South Africa ; Reichw. V. A. i. p. 572.

This is also a species of which we have no Sudanese, though several Abyssinian, examples, but as it is an easily recognizable bird and is recorded from the Blue and White Niles and elsewhere by Heuglin, we have no doubt that it may be admitted to our list.

***Circaëtus cinereus*.**

Circaëtus cinereus Vieill. Nouv. Dict. xxiii. 1818, p. 445 : Senegal ; Reichw. V. A. i. p. 571.

[C. & L. coll.] 1 Kamisa Dec. Sen.

Previously recorded by Heuglin from the White and Blue Niles, but not obtained since within our limits so far as we know. We consider this to be quite a different species from *C. pectoralis* (cf. Slater, Ibis, 1912, p. 9).

***Circaëtus cinerascens*.**

Circaëtus cinerascens J. W. von Müller, Naumannia, 1851, pt. iv. p. 27 : Sennar.

Circaëtus cinerascens Reichw. V. A. i. p. 573.

The type-locality of this species, also called *C. zonurus* by Heuglin, Ibis, 1860, p. 410, is Sennar on the Blue Nile. According to Heuglin also it was not uncommon. Emin obtained a specimen at Lado, and there is also an example in the Museum collected by him at Kabajendi on the boundary of the Lado Enclave.

Kaupifalco monogrammicus monogrammicus.

Falco monogrammicus Temm. Pl. Col. livr. 53, 1824, pl. 314 :
Senegal.

Kaupifalco monogrammicus Reichw. V. A. i. p. 547.

Asturina monogrammica Butler, Ibis, 1908, p. 253.

[B. coll.] 1 Roseires Sept. Sen.

[Chr. coll.] 2 Yambio Mch. B.G.

These birds undoubtedly belong to the typical Senegal race, though it appears, from an examination of the material in the Museum, that the southern form, separated by Reichenow as *K. m. meridionalis* (Hartl.), comes farther north than is generally supposed, and that British East African and Uganda examples approach it more closely than they do the present race. The size varies very considerably. The Roseires specimen has a wing of 217 mm., while the Yambio birds measure 234 and 247 mm. All are sexed female.

Lophoaëtus occipitalis.

Falco occipitalis Daudin, Traité, ii. 1800, p. 40 : "Anteniquoi country," i. e. Knysna district, Cape Colony.

Lophoaëtus occipitalis Reichw. V. A. i. p. 582 ; Butler, Ibis, 1905, p. 367, 1908, p. 252.

[B. coll.] 2 Renk Mch., 1 Kaka June, U.N.

[C. & L. coll.] 1 Sennar Jan. Sen.; 1 Jebel Ahmed
Agha Jan., 1 White Nile lat. $9\frac{1}{2}^{\circ}$ N. long. 31° E. U.N.

[Chr. coll.] 1 Meridi Feb. B.G.

The eggs of this species were taken by Hawker at Fashoda on March 21, 1901 (Ibis, 1902, p. 441).

Spizaëtus bellicosus.

Falco bellicosus Daudin, Traité, ii. 1800, p. 38 : Gt. Namaqualand.

Spizaëtus bellicosus Reichw. V. A. i. p. 576.

There is no example in the present collections, but Mr. Butler informs us it is common in the forest regions of the Bahr el Ghazal, and we have a specimen in the Museum shot by Mr. G. Blaine in that locality.

Hieraaëtus fasciatus spilogaster.

Spizaëtus spilogaster Bonaparte, Rev. et Mag. Zool. 1850, p. 487: Abyssinia.

Hieraaëtus spilogaster Reichw. V. A. i. p. 579.

This Eagle has been recorded by Antinori from Sennar and from several localities by Heuglin, and there seems no reason why it should not occur in the Sudan, but it is not represented in the collections we have examined.

Hieraaëtus pennatus.

Falco pennatus Gmelin, Syst. Nat. i. pt. 1, 1788, p. 272 (ex Brisson): no type-locality indicated.

Hieraaëtus pennatus pennatus Hartert, Vög. pal. Faun. p. 1111.

The Booted Eagle has been several times recorded from the Sudan, though the Museum does not happen to possess any specimens. It is a winter visitor, but a rare one, to as far south as Natal. Mr. Willoughby Lowe informs us that a pair were collected by the Chapman-Lynes expedition on the Blue Nile near Sennar and were presented to the Khartoum Museum.

Hieraaëtus wahlbergi.

Aquila wahlbergi Sund. Öfv. Ak. Förh. 1850, p. 109: "Upper Kaffraria," i. e. Transvaal.

Hieraaëtus wahlbergi Reichw. V. A. i. p. 581.

[C. & L. coll.] 1 Blue Nile 20 miles above Sennar Jan. Sen.

This is the first specimen we have been able to examine from the Sudan. It has been twice previously recorded, from Roseires by Brehm and from Lado by Emin. There is also a specimen in the Museum from Eritrea.

Aquila heliaca heliaca.

Aquila heliaca Savigny, Descr. Egypte, Syst. Ois. 1809, p. 82, pl. 12: Upper Egypt.

Aquila heliaca heliaca Hartert, Vög. pal. Faun. p. 1092.

Aquila imperialis (Bechst.) ; Butler, Ibis, 1909, p. 402.

Mr. Butler, Ibis, 1909, p. 402, records his unsuccessful attempts to trap or shoot specimens of what he took to be this Eagle in the hills of the Red Sea Province. It has been recorded by Heuglin from Nubia and Kordofan.

Aquila rapax albicans.

Falco (Aquila) albicans Rüppell, Neue Wirbelt. 1836, p. 34, pl. 13: Simien, Abyssinia.

Aquila rapax albicans Hartert, Vög. pal. Faun. p. 1095.

Aquila rapax apud Butler, Ibis, 1905, p. 367, 1908, p. 252.

[B. coll.] 1 Khartoum Jan. ; 1 Um Dam May, Kor.

[C. & L. coll.] 1 Sinkat Mch, 1 Erkowit Apl. R.S.;
1 Senga, 2 near Kamisa Dec. Sen. ; 1 Kodok Mch.,
1 Jebelein Jan. U.N.

[Gurney coll.] 1 Meroë Feb. Ber.

This species has a very marked plumage change which according to Hartert it takes five or six years to undergo. He is of opinion that the darkest bird is the adult and the lightest the youngest. One of the Chapman-Lynes birds shot off a nest at Kodok is in what Hartert calls "Plumage 3," and it appears to us that the breast-feathers are certainly freshest where they are darkest, and that abrasion plays a very great part in the change.

Aquila nipalensis orientalis.

Aquila orientalis Cabanis, J. f. O. 1854, p. 369 note: near Sarepta, S.E. Russia.

Aquila nipalensis orientalis Hartert, Vög. pal. Faun. p. 1099.

[B. coll.] 3 Khartoum Feb.

[C. & L. coll.] 1 ♀ (nesting) Erkowit April 8, R.S.

These we believe to be the first definite records of this Eagle from Africa. It appears to be not uncommon according to Mr. Butler on the rubbish heaps outside Khartoum in the winter. A specimen obtained by Lt.-Col. Penton at Um Dam, Kordofan, is mentioned by Mr. Butler, Ibis, 1905, p. 367, under "*A. nipalensis?*" and we have

little doubt that it was this species. It is also of interest that a bird lent us for comparison by Col. Stephenson Clarke, C.B., and shot in the Loita Plains of southern British East Africa, is in our opinion undoubtedly an example of this species, and Mr. G. Archer, C.M.G., H.M.'s Commissioner for Somaliland, has recently found the same bird breeding in Somaliland. The bird appears, therefore, to have a fairly extensive range in Africa. It has probably been confused with *A. rapax*, and young birds are very difficult to separate from that species. It may be generally taken, however, that immature *A. n. orientalis* have the lowest upper tail-coverts and the tips of the inner secondaries white, and not fulvous as in *A. rapax*, and that they are also darker and less rufous than that species. They are also on the whole distinctly larger. The adults, which are very dark brown, have a patch of pointed light-coloured feathers on the nape. The Chapman and Lynes specimen from Erkowit is said to have been nesting.

Dr. Hartert is inclined to identify these birds with the Indian subspecies *A. n. nipalensis*; the distinctive characters of the two races are by no means well marked.

Aquila pomarina pomarina.

Aquila pomarina Brehm, Handb. Natur. Vög. Deutschl. 1831, p. 27: Pomerania.

Aquila pomarina pomarina Hartert, Vög. pal. Faun. p. 1104.

[B. coll.] 1 Khartoum Nov.

This is the first definite record we can trace for the Sudan and we believe the second only from the Ethiopian region, the first being secured in 1914 by the junior author in the Ithanga Hills of British East Africa (Ibis, 1917, p. 407).

Heuglin (Orn. Nordost-Afr. i. p. 47) records this species under the name of *A. naevia* from the Nile as far south as Sennar and Kordofan, but we do not know if any of his specimens are in existence. It is of course only a winter visitor.

***Gypaëtus barbatus* subsp. ?**

Mr. Willoughby Lowe informs us that he saw an undoubted Lammergeier in the Red Sea Province at Erkowit on April 1, 1914, and that another was seen by Commander Lynes on April 6 and on subsequent occasions. They were in all probability the Abyssinian form, which is believed to be identical with *G. b. meridionalis* Keys. & Blas. from South Africa.

***Buteo buteo rufiventer*.**

Buteo rufiventer Jerdon, Madras Journ. xiii. 1844, p. 165 : Nilgiri Hills.

Buteo buteo rufiventer Sclater, Ibis, 1919, p. 253.

Buteo desertorum auct., Butler, Ibis, 1905, p. 368, 1908, p. 253, 1909, p. 402 ; and *Buteo anceps* Brehm apud Hartert.

[B. coll.] 3 Khartoum Oct. & Nov.

[C. & L. coll.] 2 Sinkat Mch. R.S.

The Desert Buzzard seems a fairly common winter visitor to the Sudan and was seen by Mr. Butler in the Red Sea Province as late as May. For use of this name *cf.* Sclater, *op. cit.*

***Buteo ferox ferox*.**

Accipiter ferox S. G. Gmelin, Nov. Comm. Acad. Petrop. xv. 1770-1771, p. 442 : Astrakan.

Buteo ferox ferox Hartert, Vög. pal. Faun. p. 1115.

[B. coll.] 3 Khartoum Mch. 25, Dec. 3, 16.

A winter migrant to the Sudan, apparently only the northern portion.

***Buteo jakal augur*.**

Falco (Buteo) augur Rüpp. Neue Wirbelt. 1836, p. 38, pl. 16 : Abyssinia.

Buteo jakal augur Sclater, Ibis, 1919, p. 251.

Mr. Butler records this species from the Blue Nile and Erkowit. Heuglin also records it from the Blue Nile and Sennar. It is common in Abyssinia. There are no Sudanese examples in the Museum.

Buteo auguralis.

Buteo auguralis Salvadori, Atti Soc. Ital. Milan, viii. 1865, p. 276 : Abyssinia ; Reichw. V. A. i. p. 593.

[B. coll.] 1 Sennar July, 1 Roseires Sept. Sen.

[Chr. coll.] 1 Yambio Mch. B.G.

Probably a resident species in the southern part of the Sudan. Recorded also from Kordofan by Antinori and Heuglin.

Accipiter nisus nisus.

Falco nisus Linn. Syst. Nat. 10th ed. 1758, p. 92 : Europe, restricted type-locality : Sweden.

Accipiter nisus nisus Hartert, Vög. pal. Faun. p. 1151.

[B. coll.] 1 Barankwa Nov. 5, Sen.

[C. & L. coll.] 1 Erkowit Apl. 3, R.S.

The Sparrow-Hawk is apparently a rare winter visitor to the Sudan. Mr. Butler records it also from Khartoum, Flower from the Blue Nile, and Rüppell from Kordofan.

Accipiter minullus intermedius.

Accipiter minullus intermedius Erlanger, J. f. O. 1904, p. 173 : Abela, Lake district of S. Abyssinia.

[B. coll.] 1 Roseires Nov. Sen.

On examining the material in the Museum we find we can recognize four races of *A. minullus*, viz. :—

A. m. minullus (Daudin). S. Africa, south of Zambesi.

A. m. tropicalis Reichw. Zambesi to British East Africa.

A. m. intermedius Erlanger. Abyssinia to Uganda and the Sudan.

A. m. erythropus Hartlaub. West Africa from the Gold Coast to Gaboon.

Accipiter melanoleucus.

Accipiter melanoleucus Smith, S. A. Quart. Journ. i. pt. 3, 1830, p. 229 : Bavian's River, Cape Colony.

Astur melanoleucus Reichw. V. A. i. p. 551.

Heuglin (Orn. N.O.-Afr. i. p. 60) records a specimen of this Hawk taken at Fazogli (Sen.) by Duke Paul of Württemberg in 1840. We know of no other record.

Astur (Nisastur) badius sphenurus.

Falco (Nisus) sphenurus Rüppell, N. Wirbelt. 1835, p. 42 :
Dahlak I. near Massaua.

Accipiter badius sphenurus Rüpp. ; Hartert, Vög. pal. Faun.
p. 1161.

Astur sphenurus Butler, Ibis, 1908, p. 253, 1909, p. 89.

[B. coll.] 2 near Roseires May, 1 Famaka May, Sen. ;

3 Khartoum Sept. & Oct. ; 3 Wau Jan. & Apl. B.G.

[Chr. coll.] 2 Meridi Feb., 1 Wau July, B.G.

Widely distributed.

Micronisus gabar.

Falco gabar Daudin, Traité, ii. 1800, p. 87 : interior of
South Africa (ex Levaillant).

Micronisus gabar Reichw. V. A. i. p. 565.

Melierax gabar Butler, Ibis, 1905, p. 369, 1908, p. 263,
1909, p. 89.

[B. coll.] 1 Disa Apl., 4 Roseires Feb. Apl. July, Sen. ;

4 Khartoum Apl. Sept. Oct. ; 1 Kosti May, 2 Goz abu
Guma Apl. May, W.N. ; 3 Mongalla summer ;

1 nr. Wau Jan., 1 Chak Chak Feb. B.G.

[C. & L. coll.] 6 Kamisa, 1 Sennar Dec. Sen ; 1 Kosti
Meh. W.N.

[Chr. coll.] 1 Meridi Feb. B.G.

[Gurney coll.] 1 Meroë Jan. Ber.

Mr. Butler was, we believe, the first to point out that the black Hawk known as *Melierax niger* (Vieill.) was in all probability only a melanism of this species. We believe this to be undoubtedly the case, but to what degree the black form is "fixed" we have no idea. Mr. G. F. Archer, C.M.G., H.M.'s Commissioner of Somaliland, recently wrote to Colonel Stephenson Clarke, who had asked him to make a note of this point, that he had found black and grey nestlings in the same nest.

Melierax metabates metabates.

Melierax metabates Heuglin, Ibis, 1861, p. 72 : White
Nile between 6° and 7° N. lat.

Melierax canorus metabates Hartert, Vög. pal. Faun. p. 1164.

Melierax polyzonus (Rüpp.); Butler, Ibis, 1908, p. 253, 1909, p. 89.

[B. coll.] 6 Mongalla summer; 1 Wau Apl. B.G.

[Chr. coll.] 2 Yei Nov. & Dec. L.E.

***Melierax metabates neumanni*.**

Melierax canorus neumanni Hartert, Vög. pal. Faun. p. 1165: Arbub near Merowe, Dongola.

Melierax polyzonus apud Butler, Ibis, 1905, p. 368.

[B. coll.] 1 Erkowit Mch. R.S.; 1 Sherif Yakub Apl., 3 Roseires Sept. & Dec. Sen.; 1 Kosti May, W.N.; 1 Malakal May, U.N.

[C. & L. coll.] 1 Sinkat Mch. R.S.; 2 Kamisa Dec. Sen.; 1 Jebet Ahmed Agha Jan. U.N.

[Gurney coll.] 1 Meroë Feb. Ber.

This race differs from typical *M. m. metabates* in having the secondaries and wing-coverts more clearly barred with black and white and not grey barred with lighter grey. The tail-coverts are also not so closely barred and are often practically unbarred in the centre.

We take this to be a desert form of *M. metabates* and its range to be from northern Nigeria through the northern part of the Sudan to the Blue Nile and Red Sea Province, but all birds south of Khartoum and north of Lake No may be looked upon as intermediate. The range of *M. m. metabates* practically encircles that of *M. m. neumanni*, as it extends from Morocco through Gambia, Nigeria, and across to the Bahr el Ghazal, Mongalia, Abyssinia, and up to Eritrea and Arabia.

If, following Hartert, it is proposed to regard these birds as specifically identical with the white-rumped grey-shouldered *M. canorus* and *M. poliopterus*, the oldest specific name is *Falco musicus* Daudin, *Traité*, ii. 1800, p. 116 (Cape Colony ex Levaillant), which antedates *Falco canorus* Rislach, the description of which, though read in 1799, was not apparently published until 1801.

Circus pygargus.

Circus pygargus Linn. Syst. Nat. 10th ed. 1758, p. 89: England (ex Albin); Hartert, Vög. pal. Faun. p. 1143.

We have not seen any Sudanese examples of Montagu's Harrier, nor apparently did Mr. Butler meet with it while in the Sudan; but it has been recorded by Heuglin and others, and there are many specimens in the Museum from Abyssinia, Uganda, British East Africa, and farther south, so there can be no doubt of its occurrence on migration within our limits.

Circus cyaneus, the Hen-Harrier, is also recorded by Heuglin and Rüppell from the Sudan and Abyssinia, but there are no specimens in the Museum which would lead us to suppose that it ever came so far south.

Circus macrourus.

Accipiter macrourus S. G. Gmelin, Nov. Comm. Acad. Petrop. xv. 1771, p. 439, pls. 8 & 9: S.E. Russia.

Circus macrourus Hartert, Vög. pal. Faun. p. 1142; Butler, Ibis, 1905, p. 370, 1908, p. 254.

[B. coll.] 1 Roseires Nov. **Sen.**; 3 Khartoum Oct. and "winter."

[C. & L. coll.] 1 Sinkat Mch. **R.S.**; 1 Senga, 1 Kamisa Dec. **Sen.**; 1 Hassania Island, Jan. **W.N.**

The Pallid Harrier is abundant and widely distributed throughout the Sudan in winter.

Circus æruginosus æruginosus.

Falco æruginosus Linn. Syst. Nat. 10th ed. 1758, p. 91: Europe, restricted type-locality: Sweden:

Circus æruginosus æruginosus Hartert, Vög. pal. Faun. p. 1135; Butler, Ibis, 1905, p. 370, 1908, p. 254.

[B. coll.] 3 Khartoum Jan. Feb. Mch.; 1 Meshra Rom Feb. **U.N.**

[C. & L. coll.] 2 White Nile, lat. 15° N. Jan. **W.N.**;
1 Jebel Ahmed Agha Jan. **U.N.**

Gymnogenys typicus.

Polyboroides typicus Smith, S. Afr. Quart. Journ. i. 1830, p. 107 : Eastern Cape Colony ; Reichw. V. A. i. p. 531.

[B. coll.] 1 Abu Sheneina Apl. Sen.

According to Richmond (Auk, 1902, p. 92), Lesson's generic name *Gymnogenys*, published in February 1830, antedates the more familiar *Polyboroides* of Smith, published on April 1, 1830.

Family PANDIONIDÆ.

Pandion haliaëtus haliaëtus.

Falco haliaëtus Linn. Syst. Nat. 10th ed. 1758, p. 91 : Europe, restricted type-locality : Sweden.

Pandion haliaëtus haliaëtus Hartert, Vög. pal. Faun. p. 1191 ; Butler, Ibis, 1905, p. 362.

Not uncommon on the White and Blue Niles and also recorded by Mr. Butler from the Red Sea coast and the Bahr el Ghazal.

Family ÆGYPTIDÆ (=Vulturidæ auct.).

Ægyptius monachus.

Vultur monachus Linn. Syst. Nat. 12th ed. 1766, p. 122 : Arabia.

Ægyptius monachus Hartert, Vög. pal. Faun. p. 1208.

There is a specimen of this Vulture collected by Rüppell in "north-east Africa" in the Museum, and it has been occasionally recorded from Egypt. We think it quite possible that it may occur in the Sudan, but the evidence at present is not conclusive. Rothschild and Wollaston (Ibis, 1902, p. 22) record it as common at Shendi, but Butler in his notes is of the opinion that the birds seen were possibly examples of *Otogyps nubicus*, i. e. *Torgos tracheliotus nubicus*.

Gyps fulvus fulvescens ?

Gyps fulvescens Hume, Ibis, 1869, p. 356 : Gurgaon, Punjab.

Gyps fulvus fulvescens Hartert, Vög. pal. Faun. p. 1206.

[C. & L. coll.] 1 Sinkat-Erkowit Plain Mch., 1 Erkowit
Apl. R.S.

These two Vultures from the Red Sea Province are most certainly closer to the Indian form than they are to the European. We have unfortunately no specimens of *G. f. cinnamomeus* Reichw. from Turkestan with which to compare them, nor have we any specimens of *G. f. fulvus* from the type locality, north Persia. We should expect northern migrants in the Red Sea Province, judging from what we have so far seen, to come from the country between Russia to the west and western Turkestan to the east, but not from so far east as the Punjab. The fact remains, however, that we cannot separate these from Punjab examples. The typical race *G. f. fulvus* (*V. f. occidentalis* Schlegel of Heuglin) is said by Heuglin and others to have occurred in the Sudan, but we have no specimens before us.

***Gyps rüppellii rüppellii*.**

Vultur rüppellii A. Brehm, Naumannia, 1852, pt. 3, p. 44 :
Khartoum.

Gyps rüppellii rüppellii Hartert, Vög. pal. Faun. p. 1206.

Gyps rueppelli Butler, Ibis, 1905, p. 370, 1908, p. 254,
1909, p. 402.

[C. & L. coll.] 1 Kamisa Dec. Sen.; 1 Marbeit Jan. U.N.

These two specimens are the first examples of this species to reach the British Museum. This is a lowland species as compared to the distinct and paler race *G. r. erlangeri* from the Abyssinian highlands. We think it very possible that this also occurs in the Sudan and may be the bird referred to by Butler, Ibis, 1905, p. 371, as *Gyps kolbii*, which it is not unlike. This latter occurs, however, only in South Africa.

***Pseudogyps africanus*.**

Gyps africanus Salvadori, Not. Stor. R. Accad. Torino,
1865, p. 133 : Sennar.

Pseudogyps africanus Butler, Ibis, 1908, p. 254.

[C. & L. coll.] 1 Kamisa Dec. Sen.

Erlanger (J. f. O. 1904, pp. 150–152) divides this species into several races. We have not sufficient material in the Museum to confirm or dispute his conclusions. Apparently not an uncommon bird in the Sudan.

Torgos tracheliotus nubicus.

Vultur nubicus H. Smith in Griffith's Animal Kingdom, i. 1829, p. 164: Nubia.

Otogyps auricularis (nec Daud.), Butler, Ibis, 1905, p. 370.

Otogyps auricularis pt. Reichw. V. A. i. p. 512.

[C. & L. coll.] 1 Sennar Jan.

Not uncommon in the Sudan, but like all large Vultures not much sought after by collectors.

The generic name *Torgos* Kaup, Isis, xxi. 1828, p. 1144, is far anterior in date to *Otogyps* and must be accepted in its place. The specific name *tracheliotus* (J. R. Forster in Levaillant's 'Reise Afrikas,' iii. 1791, p. 362, pl. 12) also antedates *auricularis* Daudin, 1800, as has been pointed out by Richmond (P. U.S. Nat. Mus. xxxv. 1909, p. 646).

The entire absence of ear-lappets in all the north-east African examples appears to be quite sufficient to distinguish them from South African birds. We have no examples before us from East Africa.

Lophogyps occipitalis.

Vultur occipitalis Burchell, Travels, ii. 1824, p. 329: Makhwari River, nr. Kuruman, Bechuanaland.

Lophogyps occipitalis Reichw. V. A. i. p. 514; Butler, Ibis, 1908, p. 254.

[C. & L. coll.] 3 Kamisa Dec. Sen.; 1 Jebelein Jan.

W.N.; 1 Tonga Feb. U.N.

A species occurring throughout the greater part of the Sudan.

Neophron percnopterus percnopterus.

Vultur perenopterus Linn. Syst. Nat. 10th ed. 1758, p. 87: Egypt.

Neophron percnopterus Reichw. V. A. i. p. 521; Butler, Ibis, 1905, p. 371, 1908, p. 254, 1909, p. 402.

We happen to have no Sudanese specimens before us, but Mr. Butler records the Egyptian Vulture as abundant in the northern part of the Sudan, becoming scarcer to the south.

Necrosyrtes monachus pileatus.

Vultur pileatus Burchell, Travels, ii. 1824, p. 195: between Graaff Reinet and the Orange river, *i. e.* Hopetown district of the Cape Province.

Neophron monachus apud Butler, Ibis, 1905, p. 371, 1908, p. 234.

[C. & L. coll.] 1 Senga Dec. Sen. ; 1 Bahr el Zeraf, Feb. U.N.

The difference between this race and the typical form from Senegal is merely that of size, the wing of the present race being over 470 mm. and generally over 500 mm., while that of the typical race is usually under 470. The north-east African birds agree with south African birds rather than with those of north-west Africa. This Vulture replaces to a great extent the Egyptian Vulture in the southern part of the Sudan.

Family SAGITTARIIDÆ.

Sagittarius serpentarius.

Falco serpentarius J. F. Miller, Var. subjects Nat. Hist. 1779, pl. 28: Cape of Good Hope.

Serpentarius serpentarius (Mill.); Reichw. V. A. i. p. 528; Claude Grant, Ibis, 1915, p. 236.

Serpentarius secretarius (Scop.); Butler, Ibis, 1905, p. 370, 1908, p. 254.

We agree with Claude Grant that at present we can see no reason for recognizing any races of the Secretary Bird. The material, however, is not extensive, and it is possible that more specimens may make separation necessary.

The generic name *Sagittarius* Hermann, Tab. Affin. Anim. 1783, pp. 136, 235, antedates *Serpentarius* Cuvier, Tabl. Elém. d'Hist. Nat. 1798, p. 254 (Richmond, P. U.S. Nat. Mus. liii. 1917, p. 622).

[To be continued.]

XXXII.—*List of the Birds of the Canary Islands, with detailed reference to the Migratory Species and the Accidental Visitors.* Part IV. ANATIDÆ—LARIDÆ. By DAVID A. BANNERMAN, M.B.E., B.A., M.B.O.U., F.R.G.S.

[Continued from p. 495.]

Family ANATIDÆ.

Anas platyrhynchos platyrhynchos. The Mallard.

Anas platyrhynchos Linn. Syst. Nat. 10th ed. 1758, p. 125—Type locality : Sweden.

The Mallard or Wild Duck is a somewhat irregular **Winter Visitor**, especially to Tenerife, and an occasional **Bird of Passage** in spring.

Webb and Berthelot considered it to be rare prior to 1841, appearing only after strong winter gales (Orn. Canarienne, p. 46). Bolle likewise found it a rare species (J. f. O. 1855, p. 179), but notes that Berthelot shot one in the pools of Maspalomas, Gran Canaria, which it especially loved to frequent (J. f. O. 1857, p. 348).

In Tenerife the Wild Duck is plentiful in wet seasons, and may be then found frequenting the overflowing ditches of the Laguna plain. Such was the case in the winter of 1890–91 as recorded by Meade-Waldo (Ibis, 1893, p. 199), and again in the spring of 1901, when so much rain fell at Laguna that small lakes were formed, reeds sprang up, and a regular paradise existed for a short time, resorted to by ducks of many kinds, amongst which the most numerous species was according to von Thanner the Common Wild Duck (Nov. Zool. xi. 1904, p. 431).

It is unusual in ordinary years to find the Wild Duck in the Canary Islands in any numbers, but usually a few appear every year; if they arrive in dry weather they frequent the water-tanks used for storing water.

The Wild Duck is doubtless rarely seen in the eastern Canary Islands, which are altogether too barren for their taste. Polatzek's notes (Orn. Jahrb. 1909, p. 132) that it

appears frequently in very rainy winters probably refer to the western islands; but in this connection it must be remarked that Bolle wrote, "In the spring of 1851 I many times saw pairs of ducks on the coasts of Fuerteventura. . . . I cannot tell what species" (J. f. O. 1855, p. 179).

Range. The Mallard breeds throughout Europe, in north Africa and the Azores, and in Asia east to Japan. In winter it is found in Africa, south to the Tropic of Cancer, and in India.

Anas angustirostris. Marbled Duck.

Anas angustirostris Ménétr. Cat. Rais. Canc. 1832, p. 58, no. 205—Type locality: Lenkoran.

The Marbled Duck is one of the least known Ducks of the Canary Islands, and does not fall easily into any of the groups into which we are placing the rest of the Ornith. It may eventually have to be considered a partial resident as it has been known to breed in the islands, and may remain throughout the year. As nothing is known of its migratory habits I can only include it in this list as an **Occasional Visitor** which has not been known to breed since Bolle recorded the fact in 1857.

Bolle's account of its nesting is therefore of considerable interest. He wrote: "This duck, so common in Algeria, is the only one of its genus which lives in Canaria as a breeding bird. In May I saw them with their young ones in the ponds surrounded with rushes and water plants at the 'Charco'" (J. f. O. 1857, p. 348).

The bird is not recorded again until Cabrera's list was published, in which he states that he had a specimen in his collection from Laguna and cites the bird as an occasional migrant under the name of *Querquedula angustirostris* (Catálogo, p. 69).

That *A. angustirostris* still frequents the remarkable locality known as the "Charco" in Gran Canaria has been proved of late years by Major Smeed, Herr von Thanner, and myself, all on different occasions. Thanner saw the Marbled Duck there in February 1909 (Orn. Jahrb. 1910,

p. 100) and believed it bred there, but he did not find a nest nor did he get any eggs. I obtained a specimen myself in the Charco on the 24th of February, 1912 (Ibis, 1912, p. 586); while Major C. Smeed writes to me as follows: "On referring to my notes, I find it was a party of three Marbled Ducks I flushed on two consecutive days from the vegetation by the Charco at Maspalomas—the 19th and 20th March, 1914." He was of opinion that they were the same three birds.

Range. The Marbled Duck is found in Spain and Portugal, northern Africa south to the Canaries, and extends eastwards through Palestine, Persia, and the Caucasus to India, apparently also in the Seychelles.

Querquedula crecca crecca. Common Teal.

Anas crecca Linn. Syst. Nat. 10th ed. 1758, p. 126—
Type locality: Sweden.

The Common Teal is a Winter Visitor to many of the islands.

It is reported by von Thanner to have bred in Fuerteventura on the strength of his having seen a young bird near Gran Tarajal. This I am inclined to doubt, as the evidence seems to me exceedingly weak (*vide* Orn. Jahrb. 1905, pp. 65, 66, et 1908, p. 213). It must, however, in fairness to von Thanner be noted that the Teal has bred in the Azores (Ibis, 1866, p. 102), and there is no apparent reason why it should not do so in the Canary Islands. The valley of Gran Tarajal is hardly the place where I should have expected to find the Teal breeding even after a wet winter. Von Thanner also noted an adult male which he did not obtain, as he hoped it might remain to breed, at Gran Tarajal (Orn. Jahrb. 1908, p. 213).

The Teal is recorded by most ornithologists who have written on the birds of the Canary Islands.

Webb and Berthelot mention the bird first, and saw a specimen in the Canaries in February 1830 (Orn. Canarienne, p. 46). Bolle records that (according to reliable sportsmen) many used to be killed in the flooded fields

round Laguna every winter (J. f. O. 1857, p. 348). Meade-Waldo likewise speaks of them as "not very uncommon in wet winters," but did not observe them in large flocks (Ibis, 1893, p. 199).

Cabrera had several specimens from various localities in Tenerife in his collection (Catálogo, p. 68).

In the winter of 1903 Polatzek found a colony of fifteen to eighteen old and young ones in the Barranco Rio Cabras in Fuerteventura, the last of which disappeared in the middle of February (Orn. Jahrb. 1909, p. 24).

The Common Teal appears to visit all the islands, for I saw a specimen in 1913 in the Gonzalez collection in Lanzarote which had been shot in that waterless island (Ibis, 1914, p. 63).

From Gran Canaria there is a specimen in the British Museum shot by Dr. P. R. Lowe on the 22nd of November, 1907, in one of the tanks beyond the Las Palmas golf-links. If the Teal wishes to breed in the Canary Islands, there is surely no more tempting spot for its needs than the Charco of Maspalomas in the island of Gran Canaria.

Range. The Teal breeds throughout Europe and Asia, and its range in Africa extends to about lat. 5° N. It has been recorded from Madeira as well as the Canary Islands, and has been said to breed in the Azores. In winter it ranges eastwards to Japan.

Mareca penelope. Wigeon.

Anas penelope Linn. Syst. Nat. 10th ed. 1758, p. 126—
Type locality: Sweden.

The Wigeon is a **Rare Visitor** (probably only in winter) to the Canary Islands. It has been obtained on very few occasions.

Cabrera shot two at Laguna (Catálogo, p. 68), and Meade-Waldo only saw one bird, probably one of the pair shot by Cabrera (Ibis, 1893, p. 199).

I have myself recorded a bird which had been shot in Lanzarote, and which is in the private collection of Gonzalez y Gonzalez in Arrecife (Ibis, 1914, p. 63).

Range. The Wigeon is widely distributed over Europe and Asia, and in winter is found in Africa as far as Abyssinia on the east coast. It does not appear to have been recorded from western Africa south of the Canary Islands. It ranges in the west to Alaska and eastwards to the Sunda Islands.

Spatula clypeata. Shoveler.

Anas clypeata Linn. Syst. Nat. 10th ed. 1758, p. 124—
Type locality : Sweden.

The Shoveler is a **Rare Visitor**, which has been obtained certainly on one and probably on more occasions in the islands.

Meade-Waldo shot a female on one of the water-tanks near Orotava on the 18th of November, 1890 (Ibis, 1893, p. 199 and MS. note-books). The skin of this bird is now in the British Museum, where I have examined it.

Cabrera also mentions that he obtained it in Tenerife (Catálogo, p. 68).

Range. The Shoveler has an extensive distribution in the Palearctic Region and a circumpolar breeding-range. It also breeds in North America. In winter it extends in Africa to Somaliland on the east and Senegambia on the west coast.

Nyroca nyroca. White-eyed Pochard.

Anas nyroca Güldenstädt, Nov. Comm. Petrop. xiv. pt. 1, 1770, p. 403—Type locality : S. Russia.

The White-eyed Pochard is a **Rare Visitor** to the Canary Islands.

Webb and Berthelot say that this duck is of accidental occurrence, and arrives sometimes in winter. They record two specimens which were killed in November 1829 on the beach of the Isleta in Gran Canaria (Orn. Canarienne, p. 46).

The above seems to be the only definite record concerning the White-eyed Pochard in the Canary Islands. The species is mentioned by Bolle (J. f. O. 1855, p. 179) as a "bird of

passage," and in a later paper he quotes Berthelot's note (J. f. O. 1857, p. 348).

Cabrera includes it (Catálogo, p. 69) under the name *Fuligula africana* Gmel., giving its local Spanish name, *i. e.* "pato berberisco," and remarking that it is an accidental visitor in winter. He had no specimens in his collection, and it is difficult to gather whether he observed this duck himself or whether he is merely quoting Berthelot, Bolle, and Serra, which three authors he mentions by name.

Polatzek includes it in his list as an occasional migrant in winter, but does not appear to have observed the bird personally (Orn. Jahrb. 1909, p. 132).

Range. The White-eyed Pochard breeds in central and southern Europe, in western Asia, and in north Africa. It winters in north Africa and eastwards to India.

Nyroca ferina ferina. Common Pochard.

Anas ferina Linn. Syst. Nat. 10th ed. 1758, p. 126—Type locality: Sweden.

The Common Pochard is a **Rare Visitor** in winter.

It has only once been recorded, and that by Meade-Waldo, who wrote (Ibis, 1893, p. 199): "A small flock of Pochards frequented the tanks by the Botanical Gardens" [La Paz, Orotava, Tenerife]. One of these birds, a female, was secured on the 18th of February, 1889, and is now in the British Museum, where I have examined the skin.

The same birds are also recorded by Meade-Waldo in an earlier paper (Ibis, 1889, p. 515), where he mentions the three birds enumerated above, remarking that an example was shot by a Mr. Nash, the chaplain, and came into his possession. This would be the bird which is now in the National Collection.

Range. The Common Pochard breeds throughout Europe and Asia, and winters in the Mediterranean countries and in north Africa from Morocco to Egypt, extending in the east to Japan.

Ædemia nigra nigra. Common Scoter.

Anas nigra Linn. Syst. Nat. 10th ed. 1758, p. 123—Type locality: England.

A Rare Visitor to the Canary Islands.

The Common Scoter has not been observed for many years.

Bolle wrote of this species: "A regular visitor to Canaria (*i. e.* Grand Canary), where it frequents the irrigation ponds and is well known to sportsmen." He handled specimens in the Léon collection, and includes it as a more or less regular winter visitor (J. f. O. 1857, p. 348).

Cabrera (Catálogo, p. 69) and Polatzek both cite the bird in their lists, and I agree with the latter author who remarks that it is doubtful whether the Common Scoter is found still under the present conditions (Orn. Jahrb. 1909, p. 132).

Range. The Common Scoter breeds in north Europe and Asia, and in winter visits the Atlantic shores and Mediterranean, extending as far south as the Azores and coasts of north-west Africa, where it is said to be very common.

Family PHÆNICOPTERIDÆ.

Phœnicopterus antiquorum. Flamingo.

Phœnicopterus antiquorum Temm. Man. d'Orn. 2nd ed. ii. 1820, p. 587—Type locality: Europe.

The Flamingo is almost certainly a **Rare Visitor** to the Eastern Canary Group.

There can be no mistaking such a conspicuous species, and it certainly appears to have occurred. The only evidence of the occurrence of this species in the Canary Islands is given by (1) Bolle who, in his last paper, wrote that he had seen in the Léon collection in Gran Canaria a specimen of the Flamingo which had been killed in that island (J. f. O. 1857, p. 339); (2) Meade-Waldo, who discovered the remains of a dead Flamingo in the island of ? Fuerteventura, and remarked that it seemed well-known to the fishermen on the eastern islands (Ibis, 1893, p. 199).

When encamped in 1913 near the Lago Janurio, a salt lake on the south-west coast of Lanzarote, the fishermen

described a bird which occasionally came to the lake, and which could have been none other than a Flamingo (Ibis, 1914, pp. 57, 263).

Range. The Flamingo breeds in southern Europe, throughout Africa and in the Cape Verde Islands. It is not therefore surprising that examples should occasionally wander to the Canary Islands.

Family ARDEIDÆ.

Ardea cinerea. Heron.

Ardea cinerea Linn. Syst. Nat. 10th ed. 1758, p. 143—
Type locality: Sweden.

A Partial Resident and Bird of Passage.

Hab. in Archipelago.

Western Group: Gran Canaria, Tenerife, Palma, Gomera.

Eastern Group: Fuerteventura, Lanzarote.

Outer islets: Graciosa, Allegranza.

Obs. Though the Heron has not actually been recorded from Hierro in the western group or from Lobos and Montaña Clara in the outer islets, it is sure to be found on the coasts of these islands at certain times.

I have included the Heron under both the above headings, as it is resident and breeds in many of the islands of the group; but its numbers are augmented from time to time by fresh arrivals. It is also a regular Bird of Passage, passing through the Archipelago in both the spring and autumn migrations.

Some of these migrants may possibly be tempted by their resident relations to remain and breed, while it is equally possible that birds which have remained a year or two and bred in the Archipelago may, through scarcity of food or other local conditions, forsake the islands and join the migrants when they pass through.

The above is my explanation for the many conflicting statements which have been made about this species.

The Heron has been recorded from most of the islands,

and is said to breed in Tenerife, Gran Canaria, Lanzarote, and Palma.

The following notes are arranged under the headings of the various islands :—

Tenerife.

The Heron is partially resident and frequents the coasts and outlying rocks. In the winter it is often seen round the fresh-water tanks, and is recorded throughout the season by Bolle (J. f. O. 1855, p. 176) and Meade-Waldo (Ibis, 1893, p. 198). Koenig saw them in the high trees of the Botanical Gardens (J. f. O. 1890, p. 453); they do not, however, breed in trees in the Canary Islands, but resort to the rocky headlands in the south of the island. Ramon Gomez is said by Koenig to have taken a nest and eggs at Adeje on the Tenerifian coast. The Heron is included by von Thanner (Nov. Zool. xi. 1904, p. 431) as a regular bird of passage in Tenerife, and Meade-Waldo saw many in the island on the 25th of April and following days during the great 1890 migration (Ibis, 1890, p. 429). Godman saw a few pairs about the coast in May (Ibis, 1872, p. 221).

Gran Canaria.

Hérons are perhaps more plentiful here than in any of the other islands, and as in Tenerife they frequent the rocky coasts and can be usually seen fishing on the reefs in Confital Bay. They are said to nest in the high cliffs of Guanarteme, and there I have seen, in February 1902, as many as six together on a small rock lying about 400 yards from the shore (Ibis, 1912, p. 586). Dr. P. R. Lowe noted the bird near Las Palmas on the 8th of January, 1906 (MS. note-books). In June 1912, a pair were reported to have built an enormous nest on a rock lying off the Isleta, but rough weather prevented my verifying this statement, which I have every reason to believe was correct. The real eldorado of the Heron in Gran Canaria is the "Charco" of Maspalomas (for a description of which see Ibis, 1912, p. 564). Herons have frequented this "Charco" for many years, and Webb and Berthelot record it as living there "very comfortably" (Orn. Canarienne, p. 35). Bolle considered that Herons apparently bred there (J. f. O. 1857, p. 338), but the "Charco" seems to have remained unvisited by any ornithologist until von Thanner went there in 1909 and mentions that a young bird unable to fly had been caught there the previous year (Orn. Jahrb. 1910, p. 99). It appears, however, that this story emanated from a local Spaniard and their statements are seldom very reliable. I myself spent some time camping in the "Charco" in February 1912, when I continually observed the Heron, but found no trace of an old nest (Ibis, 1912, p. 565).

Hierro.

No actual record as yet.

Palma.

Said to breed in the island by Polatzek (Orn. Jahrb. 1909, p. 22); also noted by Koenig (J. f. O. 1890, p. 487).

Gomera.

Hérons are recorded from this island by Bolle, who says (J. f. O. 1857, p. 338) that many are said to visit Gomera in winter. He was not sure of the species, but they are unlikely to be any but *A. cinerea* in this island.

Fuerteventura.

Polatzek observed it here (Orn. Jahrb. 1909, p. 21) and I saw a bird at Toston myself in May 1913 (Ibis, 1914, p. 46). Von Thanner often saw it in the spring, and noted as many as five together in March (Orn. Jahrb. 1908, p. 214).

Lanzarote.

Polatzek often saw it in the spring (Orn. Jahrb. 1909, p. 21). Von Thanner saw it at Arrecife and records (Orn. Jahrb. 1913, p. 189) clutches of eggs of this bird * from Lanzarote, but not taken by himself and therefore requiring further confirmation.

Graciosa.

Polatzek often saw it here in the spring, but could hear nothing of its breeding in the island (Orn. Jahrb. 1909, p. 21).

Allegranza.

A single bird recorded by myself (Ibis, 1914, p. 87) as frequenting the island in June 1913.

Range beyond the Archipelago.

Distributed throughout the greater part of Europe and Asia and in most parts of Africa.

Ardea purpurea purpurea. Purple Heron.

Ardea purpurea Linn. Syst. Nat. 12th ed. 1766, p. 236—
Type locality: France.

This is a **Rare Visitor**. I can only trace one authentic record, this being a bird which was shot at Laguna and identified by both Meade-Waldo (Ibis, 1889, p. 4; 1893, p. 198) and Cabrera (Catálogo, p. 62).

* Here recorded in the vernacular only—"ein grauer Reiher."

Range. The Purple Heron has a very extensive range. It breeds in south-eastern Europe and southern Asia, and is both a resident and a winter visitor in many parts of Africa. I have seen a specimen shot by Boyd Alexander in the Cape Verde Islands.

Egretta alba alba. Great White Heron.

Ardea alba Linn. Syst. Nat. 10th ed. 1758, p. 144—Type locality : Sweden.

The Great White Heron is a **Rare Visitor** to the islands.

It has only been observed and that only on one occasion by Cabrera, who saw a flock in Tenerife in the spring of 1889 and caught one (Catálogo, p. 62).

Range. The Great White Heron breeds in southern Europe and Asia and apparently in northern Africa. It winters in the whole of Africa.

Egretta garzetta garzetta. Little Egret.

Ardea garzetta Linn. Syst. Nat. 12th ed. 1766, p. 237—Type locality : "in Oriente."

The Little Egret is a **Rare Visitor** to the Archipelago.

It is first mentioned by Webb and Berthelot (Orn. Canarienne, p. 35), who say that it only arrives in the Canaries quite accidentally.

Bolle records it as having been shot in the islands (J. f. O. 1855, p. 176), and Cabrera mentions it as an accidental migrant in the winter (Catálogo, p. 62).

I saw a stuffed example in the Gonzalez collection in Lanzarote, which had been shot in that island (Ibis, 1914, p. 63).

Range. The Little Egret breeds in southern Europe and Asia extending east to China and Japan, also throughout Africa.

Ardeola ibis ibis. Buff-backed Heron.

Ardea ibis Linn. Syst. Nat. 10th ed. 1758, p. 144—Type locality : Egypt.

This bird can only be reckoned as a **Rare Visitor**.

Meade-Waldo is again responsible for the identification ; he saw three birds in the winter in Tenerife, "two alive and one that had just been shot" (Ibis, 1889, p. 4). He recorded it in his list (Ibis, 1893, p. 198) as an "occasional straggler," but as it has not been noted since can only be included here as a rare visitor.

Range. The Buff-backed Heron is found in southern Europe, south-west Asia, and throughout Africa ; its occurrence in oceanic islands can only be put down to chance.

Ardeola ralloides ralloides. Squacco Heron.

Ardea ralloides Scopoli, *Amus* I. Hist. Nat. 1769, p. 88
—Type locality : Carniola.

The Squacco Heron, like the last-mentioned species (*A. i. ibis*), is a **Rare Visitor** to the islands, but has been recorded on more occasions than the Buff-backed Heron.

It is mentioned in 1841 by Webb and Berthelot as "De passage accidentel" (*Orn. Canarienne*, p. 36). Bolle records having seen a specimen in the Léon collection in Gran Canaria (J. f. O. 1857, p. 338). Cabrera in 1893 (*Catálogo*, p. 62) records shooting two males near Laguna : and Meade-Waldo likewise mentions it as an "occasional straggler" to Tenerife (Ibis, 1893, p. 198), and shot a specimen at Orotava on the 7th of July, 1890, which I have examined in the British Museum collection.

Range. The Squacco Heron is an inhabitant of the Mediterranean countries, extending to the Caspian Sea in southern Europe. It is also resident throughout Africa. Its occurrence in the Canary and Azores Archipelagoes is probably occasioned by exceptional weather conditions.

Ixobrychus minutus minutus. Little Bittern.

Ardea minuta Linn. Syst. Nat. 12th ed. 1766, p. 240—
Type locality : Switzerland.

The Little Bittern is another **Rare Visitor** to the islands,

but probably occurs rather more plentifully than the other members of this family.

It is first mentioned by Bolle, who wrote that a specimen of the Little Bittern had been killed in Gran Canaria, being, as he stated, a new record for the island (J. f. O. 1857, p. 338).

It was next noticed by Meade-Waldo, who remarked that "a Little Bittern was caught alive in Puerto Orotava in 1890," and he kept it in confinement for some time (Ibis, 1893, v. 198).

Cabrera had a male in his collection which had been caught in spring (Catálogo, p. 62).

I saw and identified a specimen in the Gonzalez collection in Arrecife, and was told by the collector that he had obtained the bird in Lanzarote (Ibis, 1914, p. 63).

Range. The Little Bittern breeds in southern Europe and in north Africa, parts of Asia and India. It migrates to Africa in winter, and has been recorded from the Azores and Madeira as well as the Canaries.

Nycticorax nycticorax nycticorax. Night Heron.

Ardea nycticorax Linn. Syst. Nat. 10th ed. 1758, p. 142
—Type locality : S. Europe.

The Night Heron is a **Rare Visitor** to the islands.

Webb and Berthelot recorded it as an accidental migrant (Orn. Canarienne, p. 36) and Bolle also mentions (possibly on the authority of Webb and Berthelot only) that it had been killed in the Canary group (J. f. O. 1855, p. 176).

Cabrera shot a specimen in Tenerife at Laguna and notes that there is another male specimen in the Laguna Instituto from the same locality (Catálogo, p. 63).

Meade-Waldo was able to examine the specimen shot by Cabrera and his identification can be taken as perfectly correct. He saw one which had been shot at Laguna (Ibis, 1893, p. 198).

Range. The Night Heron breeds in central and southern Europe, in temperate Asia, and throughout Africa where it

is very plentiful. There are two skins in the British Museum from the Azores.

***Botaurus stellaris*.** Bittern.

Ardea stellaris Linn. Syst. Nat. 10th ed. 1758, p. 144—

Type locality : Sweden.

The Bittern is a **Rare Visitor**. Very few records are forthcoming.

Webb and Berthelot (Orn. Canarienne, p. 36) and later Bolle (J. f. O. 1855, p. 176) mention it in their lists as an accidental wanderer.

Meade-Waldo saw one which had been killed at Laguna and heard of another (Ibis, 1893, p. 199).

Cabrera shot one at Laguna (Catálogo, p. 63) which was in his collection, and is doubtless the bird Meade-Waldo saw.

Range. The Common Bittern breeds throughout Europe south of 60° N. lat., and extends across Asia to Japan, the birds from the higher latitudes migrating south in winter to north Africa. It has been recorded once from the Azores.

***Botaurus lentiginosus*.** American Bittern.

Ardea lentiginosa Montagu, Suppl. to Ornith. Dict. 1813 [no pagination]—Type locality : Dorset, England.

This is a **Rare Visitor**.

Cabrera had a specimen in his collection killed at the Madre del Agua near Laguna (Catálogo, p. 63). Probably this same bird is recorded by Polatzek as having been found dead near Laguna in Tenerife; he adds that it is now in the museum there (Orn. Jahrb. 1909, p. 129).

Range. The American Bittern inhabits North America; about forty examples have been procured in the British Isles, from which curiously enough the type specimen was originally described. In winter it ranges to the West Indies and central America.

Single examples have been procured in the Azores and in Guernsey.

Ardeirallus sturmi. Sturm's Bittern.

Ardea sturmi Wagler, Syst. Av. i. 1827, species no. 37—

Type locality: Senegambia.

This is evidently a very **Rare Visitor** to the Archipelago.

From literature it appears that it has only once been obtained and then by Cabrera at Laguna, Tenerife (Catálogo, p. 62).

The bird, a male, was identified by Meade-Waldo (Ibis, 1890, p. 430, 1893, p. 198) and is also mentioned by Polatzek, who probably examined the skin (Orn. Jahrb. 1909, p. 129).

Range. Sturm's Bittern is an African species found commonly on many parts of the west coast. It is numerous in tropical Africa from Senegal south to Damaraland and Natal.

Family CICONIIDÆ.

Ciconia ciconia ciconia. White Stork.

Ardea ciconia Linn. Syst. Nat. 10th ed. 1758, p. 142—

Type locality: Sweden.

The White Stork is an **Occasional Visitor**. It has been seen passing through sometimes in large numbers.

It is recorded in 1841 by Webb and Berthelot (Orn. Canarienne, p. 36) and by Bolle (J. f. O. 1855, p. 176) as occurring occasionally, the last-named observer remarking that the country people knew it well. In his later paper (J. f. O. 1857, p. 338) he notes that "when Berthelot and Webb were in Lanzarote they saw a great flock of Storks arrive—a phenomenon which takes place from time to time—several were killed."

The next record is by Meade-Waldo, who remarks that "sixteen White Storks frequented the plains of Laguna in the winter of 1890–1891, four of which were shot" (Ibis, 1893, p. 199).

Cabrera noted the same "flock" and remarks that it is a migrant which more frequently occurs in the eastern than in the western group (Catálogo, p. 63).

Polatzek apparently did not see any during his residence in the islands ; but von Thanner saw one on the 16th of March, 1905, in Fuerteventura (apparently near Jandia), which is the last record I have of its occurrence (Orn. Jahrb. 1908, p. 214).

Range. The White Stork breeds in Europe, Asia, and in Africa, where it is found from Morocco to the Gold Coast, wintering in southern and central Africa.

Family PLATALEIDÆ.

Platalea leucorodia. Spoonbill.

Platalea leucorodia Linn. Syst. Nat. 10th ed. 1758, p. 139
—Type locality : Sweden.

The Spoonbill is an **Occasional Visitor**.

It was noted by Webb and Berthelot in 1841 as appearing in the winter after a gale, never in any numbers and never remaining for long. They record one which alighted near Santa Cruz, Tenerife, in the winter of 1826 (Orn. Canarienne, p. 37).

Bolle wrote that the Spoonbill was only a migratory bird, but as such came frequently to the Canary Islands. He remarks that it was often killed in Gran Canaria, where the steward of the Condé de Vega Grandé often noticed them at the ponds of Arguineguin (J. f. O. 1857, p. 339). Bolle never saw the bird himself.

Viera records it from the same district in his *Dictionario*.

Meade-Waldo noted that the bird had been killed in Tenerife, and was told that in Fuerteventura it visited the shores in small flocks, especially the coast by Toston (Ibis, 1893, p. 199).

Cabrera saw three specimens which had been caught in Tenerife (Catálogo, p. 63).

I have identified two specimens which have not been mentioned by anyone else :—

A bird in the Las Palmas Museum labelled “ Puerto de Luz, 21st October, 1880 ” (*vide* Ibis, 1912, p. 627), and

another specimen in the Gonzalez collection at Arrecife, Lanzarote, shot near that town by Gonzalez himself (Ibis, 1914, p. 63).

The last record is that by von Thanner, who saw a bird* on the 13th of May, 1913, at Orsola, Lanzarote (Orn. Jahrb. 1913, p. 189).

Range. The Spoonbill breeds locally in Europe, extending eastwards through Asia to Japan. It is resident in northern and eastern Africa, visiting tropical Africa in winter. It has been recorded from Madeira and the Azores in addition to the Canary Islands.

Family OTIDIDÆ.

Otis tetrax. Little Bustard.

Otis tetrax Linn. Syst. Nat. 10th ed. 1758, p. 154—Type locality : France.

A **Rare Visitor** to the islands.

Von Thanner, in his paper† entitled “Game and hunting in the Canaries” (Deutsche Jäger-Zeitung, Bd. 61, no. 36, p. 15), notes that there are several Dwarf Bustards (Zwerg-trappen) in the Institute at Laguna. He does not here note by whom or when or where they were obtained ; however, in a letter to Dr. Hartert, dated 27/10/18, von Thanner again refers to these birds and remarks “. . . about seven years ago” [this would be about 1911] “were killed near Laguna three specimens of *Otis tetrax* Linn. They were skinned for the Instituto de la Laguna, but nobody knows the day and year.”

Range. The Little Bustard breeds in Europe, western Asia, and north Africa north of the Atlas Mountains. It visits northern Africa on migration, and also ranges eastwards to India.

* Here recorded in the German vernacular only—“Löffelreiher.”

† No date is given on this publication, of which I received a separate reprint from the author, I think in 1914. I have not as yet been able to trace the date of publication anywhere.

Chlamydotis undulata fuerteventuræ. Fuerteventuran Bustard.

Otis undulata fuerteventuræ Rothsch. & Hart. Nov. Zool. i. 1894, p. 689—Type locality: Fuerteventura.

A Resident subspecies.

Hab. in Archipelago.

Eastern Group: Fuerteventura, Lanzarote.

Obs. It is a rare breeding bird in Lanzarote and used to occur on the south-eastern plains of Gran Canaria as a visitor. It has not been noted in the latter island for many years.

Range beyond the Archipelago.

Does not occur.

Family ŒDICNEMIDÆ.

Œdicnemus œdicnemus insularum. Eastern Canarian Thickknee.

Œdicnemus œdicnemus insularum Sassi, Orn. Jahrb. 1908, p. 32—Type locality: Fuerteventura and Lanzarote.

A Resident subspecies.

Hab. in Archipelago.

Eastern Group: Fuerteventura, Lanzarote.

Outer islets: Graciosa, Allegranza.

Range beyond the Archipelago.

Does not occur.

Œdicnemus * *œdicnemus distinctus*. Western Canarian Thickknee.

Œdicnemus œdicnemus distinctus Bannerman, Ibis, 1914, p. 277—Type locality: Gran Canaria.

A Resident subspecies.

Hab. in Archipelago.

Western Group: Gran Canaria, Tenerife, Palma, Gomera, Hierro.

* There is a skin of an *Œdicnemus* in the British Museum from Tenerife which agrees with specimens from Egypt, and cannot be assigned to either of the insular forms (*cf.* Ibis, 1914, p. 276, footnote).

Obs. I have no specific record of the bird from Palma or Gomera, but Meade-Waldo says the Thickknee occurs in "all the islands" of the Archipelago.

Range beyond the Archipelago.

Does not occur.

Family CURSORIIDÆ.

Cursorius gallicus gallicus. Cream-coloured Courser.

Charadrius gallicus Gmelin, Syst. Nat. i. pt. 2, 1789, p. 692—Type locality: France.

A Resident species.

Hab. in Archipelago.

Western Group: Gran Canaria, Tenerife.

Eastern Group: Fuerteventura, Lanzarote.

Outer islets: Graciosa*.

Range beyond the Archipelago.

The Cream-coloured Courser inhabits southern Europe and parts of Asia. Its true home, however, is northern Africa, where it ranges from Morocco to the Red Sea. It also occurs in the Cape Verde Islands.

Obs. There is no evidence in support of Bolle's theory that the Courser is a migratory species in the Canaries. Bolle wrote (J. f. O. 1855, p. 175): "These birds appear in Fuerteventura first towards the end of May or the beginning of June, and are numerous; earlier one sees hardly any, they must therefore return very late from their migration."

In his last paper (J. f. O. 1857, p. 266) he again includes *C. gallicus* as a migratory species, but with a query.

This is contrary to the observations of all recent ornithologists, Meade-Waldo (Ibis, 1893, p. 203), Polatzek (Orn. Jahrb. 1909, p. 17), etc., and I believe *C. g. gallicus* to be a resident non-migratory species in the Canary Islands.

* Recorded from this island by von Thanner (Orn. Jahrb. xxiv. 1913, p. 191); they do not nest on Graciosa.

Family GLAREOLIDÆ.

Glareola pratincola pratincola. Collared Pratincole.

Hirundo pratincola Linn. Syst. Nat. 12th ed. 1766, p. 345
—Type locality: Austria.

The Collared Pratincole must be termed an **Occasional Visitor**, as it cannot be said to occur regularly in the islands. It is distinctly a rare bird in the western islands and has been recorded on two occasions only from Tenerife.

(a) Meade-Waldo during his stay from October 1887 to June 1891 saw only three birds (Ibis, 1889, p. 4; 1893, p. 202).

(b) Cabrera shot a single specimen in the spring of 1889 in the Barranco de la Montaña de Guerra (Catálogo, p. 55).

I am inclined to believe the Collared Pratincole occurs more often than is generally supposed in the eastern group, but I have the following records only:—

(c) Polatzek “saw some on migration in Fuerteventura” (Orn. Jahrb. 1909, p. 127).

(d) Von Thanner records one of four which was killed at Arrecife, Lanzarote, on the 7th of May, 1913 (Orn. Jahrb. 1913, p. 189).

(a) A specimen (identified by myself) in the Gonzalez collection at Arrecife, which had been shot close to that town (Ibis, 1914, p. 63).

(f) Two birds (♂ ♀ with sexual organs small) shot by myself near Arrecife, Lanzarote, on the wide plain bounded by the sea, south of the town. This was on the 22nd of May, 1913, and a very high wind was blowing at the time (Ibis, 1914, pp. 58, 279).

Range. The Collared Pratincole inhabits the countries of southern Europe, extending eastwards to India. It migrates southwards, wintering in Africa.

Family CHARADRIIDÆ.*

Scolopax rusticola. Woodcock.

Scolopax rusticola Linn. Syst. Nat. 10th ed. 1758, p. 146

—Type locality: Sweden.

It is difficult to judge without more evidence whether the Woodcock in the Canary Islands should be classed a **Resident** species or a Partial Resident. Until we have proof to the contrary I prefer to include it under the former heading.

Hab. in Archipelago.

Western Group: Tenerife, Palma, Gomera.

Obs. It is impossible to tell whether any migration of this species in the Canary Archipelago takes place. I am inclined to believe that the birds inhabiting the western group of islands are isolated birds which have ceased to have any connection with the continent, but in this I may be quite wrong. The Woodcock is a highly migratory species in other parts of the world and has an extensive range, but up to the present there is no evidence whatsoever that migration takes place in the Canaries. Meade-Waldo wrote of this species (Ibis, 1893, p. 204): "It is hard to say

* When we come to deal with the Wading Birds which pass through the Canary Islands on migration, we find that it is almost impossible, from the very meagre data available, to determine whether a species should be considered strictly a Bird of Passage (*i. e.*, occurring regularly on migration every year) or whether it is more accurately placed amongst the Occasional Visitors.

In almost every case when there is insufficient data to show that a species passes through the Archipelago annually in spring and autumn, I have placed this species amongst the Occasional Visitors, although when referring to the Waders the term "Occasional Bird of Passage" might better express their status, as they are for the most part genuine migrants and not chance visitors. This, I maintain, is far the safer plan, as there will be no danger of drawing the erroneous conclusion that such and such a species passes regularly through the Canary group until the fact has been proved, and this can only be done by systematic observation over a term of years.

Further observation will assuredly necessitate the transference of many of the Charadriidæ from the group which I have termed Occasional Visitors to the group of regular migrants which I have termed Birds of Passage (see Part I. p. 98).

to what extent they are migratory, but we never saw the slightest evidence of an arrival of Woodcocks." Other authors, Bolle, Polatzek, and von Thanner, keep silent on this all-important point, the truth being that there are no ornithologists living on Palma and Gomera who could settle the question for us.

Woodcocks from the Canaries, Madeira, and the Azores are indistinguishable from British examples. They are not smaller in size as has been suggested.

Range beyond the Archipelago.

The Woodcock breeds throughout a great part of Europe and Asia, visiting the Mediterranean countries and north-west Africa in winter, ranging as far south on the mainland as the Atlas Mountains. It is resident in the Azores and in Madeira as well as the Canaries; this appears to be the limit of its southern range.

So far as I am aware it has never been recorded on the African continent from south of the Atlas Mountains.

Gallinago gallinago gallinago. Common Snipe.

Scolopax gallinago Linn. Syst. Nat. 10th ed. 1758, p. 147
—Type locality: Sweden.

The Common Snipe is a **Winter Visitor** to certain of the islands and a **Bird of Passage** in spring and autumn, sometimes in large numbers.

The Snipe is first mentioned from Tenerife by Ledru in 1810. A confusion of names has taken place, amongst the old writers, between the Common and the "Jack" Snipe. Webb and Berthelot (Orn. Canarienne, p. 39) and Bolle (in his first paper—J. f. O. 1855, p. 177) have referred in their works to *Scolopax gallinula*, i. e. the "Jack," but Bolle, in his final paper (J. f. O. 1858, p. 227), corrects his mistake and says his notes should refer to the Common Snipe. Webb and Berthelot, who had fallen into the same error (Orn. Canarienne, p. 39), recorded the Snipe there as a migrant arriving in fairly large numbers towards the autumn and passing the winter in marshy places, specially mentioning the Laguna plains and the streams which run through the

Mercedes woods. Bolle's notes are to the same effect (J.f.O. 1855, p. 177). These observations cover the period between the years 1810–1857.

Next it is mentioned by Cabrera (Catálogo, p. 58), who for many years had studied the birds of Tenerife and published his "list" in 1893, as a regular winter migrant. Meade-Waldo found it a regular winter visitor to Tenerife but in irregular numbers, sometimes very numerous about Laguna (Ibis, 1893, p. 204); he also observed it in Fuerteventura (Ibis, 1889, p. 509), and saw a bird in Tenerife on 21 November, 1888 (MS. diaries). Von Thanner, who has resided for a number of years in Tenerife, gives the following account (Nov. Zool. xi. 1904, p. 431) of the migrations of the Snipe in that island:—"In the spring of the year 1901 there was such a continuous heavy rain that the ditches of the Laguna plain overflowed and in many places formed lakes. This district with its accompanying reeds attracted large numbers of Snipe (*G. gallinago*). Single examples of these appear every year, but in such numbers only in particularly wet years. In my opinion these solitary migrants are only single individuals of a large flight which stay a longer or shorter time according to the conditions which they find."

All the above notes refer to the migration of the Snipe in the island of Tenerife.

Records from the other islands are not so numerous, as undoubtedly the character of the country, especially in the eastern group, is mostly unsuitable. There is one district, however, in Gran Canaria where the Snipe can find a happy feeding-ground, in the "Charco" of Maspalomas, which is fully described in 'The Ibis,' 1912, p. 564; here I have shot the Common Snipe in February (Ibis, 1912, p. 565), and doubtless whenever a flight passes through this island a few would be found there.

In the eastern islands the Snipe has been observed by Polatzek, who writes:—" *Gallinago gallinago* is a regular, often frequent, bird of passage. I found it in Fuerteventura from February until the beginning of March as a winter

visitor in the water-courses of the barrancos" (Orn. Jahrb. 1909, p. 130). Meade-Waldo shot the Snipe on the 28th of February in Fuerteventura, and von Thanner records it from this island on the 23rd of March, 1904, "on migration" (Orn. Jahrb. 1905, p. 65). In 1913 I examined a stuffed specimen in the island of Lanzarote, which had recently been shot there, this being the only record from that island which I can trace (Ibis, 1914, p. 63).

Range. The Common Snipe breeds in Europe and Asia and visits Africa in winter, extending on the west coast as far as Senegambia. It sometimes remains to breed on the north-west coast and nests in small numbers in the Azores. Up till the present there is no instance known of its having bred in the Canary Islands.

Gallinago media. Great Snipe.

Scolopax media Latham, Gen. Synop. Suppl. i. 1787, p. 292—Type locality: England.

The Great Snipe is a very **Rare Visitor** which has only been noticed once in the Canaries.

Cabrera (Catálogo, p. 58) notes that it is an extremely rare bird of passage which has occurred accidentally. He had an example in his collection which was obtained at Laguna.

Cabrera does not confuse it with the Common Snipe or the "Jack," as he mentions all three in his Catalogue. I think I am therefore justified in including the species in the list of authentic rare visitors.

Range. The Great Snipe breeds in northern Europe and Asia. It winters in the Mediterranean basin and Africa, ranging south to Cape Colony.

Limnocryptes gallinula. Jack Snipe.

Scolopax gallinula Linn. Syst. Nat. 12th ed. 1766, p. 244—Type locality: France.

The Jack Snipe is a **Bird of Passage** in the Canary Islands, but is much rarer than the Common Snipe.

It is probable that a few individuals pass through the

islands every year, but although records are so scarce I hesitate to include it with the Occasional Migrants.

Polatzek writes concerning this species (Orn. Jahrb. 1909, p. 130):—"It appears pretty regularly but not nearly so frequently as the Common Snipe, it stays more in the locality of woods or bushes. On the 4th of November, 1902, at Moya in Grand Canary I shot a fine male which is in Tschusi's collection at Hallein."

Cabrera also includes the Jack Snipe in his list (Catálogo, p. 58) and remarks:—"It is less frequent than the Common Snipe; without doubt it arrives before the others, remaining close to the mountains. In my collection there are many males caught in the mountains of Mercèdes" (Tenerife).

Von Thanner records (Orn. Jahrb. 1908, p. 208) having seen two *G. gallinula* in the island of Palma between January and the 18th of February, "probably migrants resting."

Older writers, Bolle, Webb, and Berthelot, etc., confused the Jack with the Common Snipe, as explained by Bolle in J. f. O. 1858, p. 227.

Runge. The Jack Snipe breeds in the north of Europe and Asia and in the winter visits the Mediterranean countries and northern Africa, extending as far south on the east coast as Abyssinia. Its migrations on the west coast of Africa are little understood. In the east it ranges to India in winter.

Hæmatopus niger meadewaldoi. Meade-Waldo's Black Oystercatcher.

Hæmatopus niger meadewaldoi Bannerman, Bull. B. O. C. xxxi. 1913, p. 33—Type locality: Fuerteventura.

A **Resident** subspecies.

Hab. in the Archipelago.

Eastern Group: Fuerteventura, Lanzarote.

Outer islets: Graciosa, Montaña Clara, Allegranza, Roque del Oeste, Roque del Este.

Obs. I consider that this rare Oystercatcher cannot be

classed as a migrant, and must be included with the Resident Birds only.

Curiously enough its eggs have never been found in the Canaries, and the bird has never been recorded from anywhere else. Meade-Waldo shot two birds in Graciosa which he considered were a breeding pair (Ibis, 1890, p. 437), and a female which he shot in Fuerteventura contained well-developed eggs (Ibis, 1889, p. 13).

Von Thanner believes that the bird is migratory, and was told by the fishermen that it came to the islands in June (Orn. Jahrb. 1908, p. 213, and 1913, p. 192).

It is certainly a remarkably rare bird, and if it is confined to the Canary Archipelago will not be long before it is entirely extinct. It must be remembered, however, that the opposite coast-line of Africa is quite unknown from an ornithological point of view; and it may possibly be a genuine migrant (a Summer Visitor) after all. As, however, there is up till now absolutely no direct evidence that migration takes place, save between the islands of the Eastern Group, I prefer to treat it as a purely Resident Bird and not even as a Partial Resident. I have only once seen it myself (Ibis, 1914, pp. 279-282).

Range beyond the Archipelago.

Unknown, possibly does not occur.

Tringa minuta minuta. Little Stint.

Tringa minuta Leisler, Nachträge zu Bechst. Naturg. Deutschl. 1812, p. 74—Type locality: near Hanau, Germany.

An Occasional Visitor.

The Little Stint is one of the rarest of the Waders which occasionally visit the islands on migration. It cannot be reckoned a Regular Bird of Passage.

Meade-Waldo notes that it is occasionally met with on migration (Ibis, 1893, p. 205). His observations were doubtless made in Tenerife; while Polatzek noted it only during the autumn migration (Orn. Jahrb. 1909, p. 131), probably in the eastern islands.

Range. The Little Stint breeds in the Arctic regions of Europe and Siberia, and in winter visits South Africa, Arabia, India, and Ceylon.

Tringa alpina alpina. Dunlin.

Tringa alpina Linn. Syst. Nat. 10th ed. 1758, p. 149—
Type locality: Lapland.

The Dunlin is a **Bird of Passage** usually observed in the Canary Islands between February and June.

The notes which Webb and Berthelot published concerning *T. variabilis* (which can only be the Dunlin) must certainly refer to another species, probably to the Kentish Plover, for these authors say, "... It appears sedentary, we are certain that it nests there because one of us found in July near Arrecife many very young specimens hardly covered with feathers" (Orn. Canarienne, p. 38).

The Dunlin is in reality a migrant to the islands, sometimes being numerous.

Meade-Waldo found them in large flocks on 25 April and following days (1890) in Tenerife, and on the 7th of April noted them in Graciosa (MS. diaries). He considered them to be "occasionally numerous" on migration, rarer in the eastern islands (Ibis, 1893, p. 204). Polatzek also records them from the eastern islands, where they were often obtained on passage (Orn. Jahrb. 1909, p. 131). I have seen them and obtained specimens at Maspalomas in Gran Canaria as early as the 23rd of February (Ibis, 1912, p. 581), and again in the eastern group in May and June (Ibis, 1914, pp. 46, 57, 71, 285), *i. e.*, sparingly on the reefs at Toston in Fuerteventura (May 6–10), by the Lago Janurio in Lanzarote (May 19–22), and in the island of Graciosa (May 27 to June 7). Wherever met with, they were always in very small numbers. One example had assumed breeding-plumage and had the testes fairly large. Dunlins do not frequent any particular part of the coast for long, and I do not think any remain in the island during the summer.

Range. The Dunlin breeds in northern Europe and is

stated to have been found nesting as far south as Spain. In winter it visits India and Africa, reaching Zanzibar on the east coast.

Tringa ferruginea ferruginea. Curlew Sandpiper.

Tringa ferruginea Brünnich, Orn. Borealis, 1764, p. 53—

Type locality : Iceland.

The Curlew Sandpiper is an **Occasional Visitor** to the islands during migration.

I have never met with it myself, but Meade-Waldo records that many of these birds arrived in beautiful full breeding-plumage in Tenerife in May 1891 (*Ibis*, 1893, p. 205), and the previous year he saw a number at the water-tanks on 25 April and following days (MS. diaries).

Cabrera had specimens in his collection from Tenerife (*Catálogo*, p. 59); and Polatzek in more recent years found it to be an irregular migrant, and records it from the eastern islands (*Orn. Jahrb.* 1909, p. 131).

I should not be surprised to find that the Curlew Sandpiper is a regular Bird of Passage occurring every year in the islands.

Range. The Curlew Sandpiper breeds in Arctic Siberia and in winter visits the Mediterranean basin and Africa, extending to the Cape; ranging also to India, the Malay regions, and Australia.

Calidris arenaria. Sanderling.

Tringa arenaria Linn. Syst. Nat. 12th ed. 1766, p. 251—

Type locality : England.

The Sanderling is a **Bird of Passage** to the Canary Islands.

Meade-Waldo saw Sanderlings in large flocks in the eastern islands and on migration everywhere (*Ibis*, 1893, p. 205), specifying the 31st of March and the 6th of April on which he observed these birds in Fuerteventura (MS. diaries). Cabrera shot specimens in Tenerife and considered it an occasional migrant (*Catálogo*, p. 58).

During my expedition to the Eastern Group in May and

June I was surprised not to meet with the Sanderling on any of the islands which I visited: doubtless I was too late in the year. I found a stuffed specimen in a collection in Lanzarote (Ibis, 1914, p. 63). In Gran Canaria in February, 1912, Sanderlings were passing along the coast, and I obtained specimens at Maspalomas on the 24th, 27th, and 29th of that month. The birds were in small flocks at the mouth of the Charco (Ibis, 1912, p. 581). I have never seen them in the north of this island.

Range. The Sanderling breeds in Arctic America and on the Siberian coast. It winters in Africa, south to the Cape, and ranges throughout the greater part of the world, visiting southern Asia, America, and Australia.

Machetes pugnax. Ruff.

Tringa pugnax Linn. Syst. Nat. 10th ed. 1758, p. 148—
Type locality: Sweden.

The Ruff is a **Bird of Passage**.

It cannot be said to be numerous, in fact it is one of the rarer Waders which I believe to be a regular migrant through the islands.

The records are meagre in the extreme, and it would perhaps have been wiser to include the Ruff in the list of Occasional Visitors. Competent observers are rare in the Canary Islands, and as Meade-Waldo and Polatzek both considered the Ruff to be a regular visitor, and as the observations of these ornithologists jointly cover a number of years, with a considerable period between them, I feel justified in placing the Ruff under this heading.

Meade-Waldo found it "not numerous, but pretty regular," especially on the Laguna plains after a heavy fall of rain (Ibis, 1893, p. 205), and shot a specimen on the 21st of February (MS. diaries).

Cabrera obtained specimens near Laguna (Catálogo, p. 59).

Polatzek remarks (Orn. Jahrb. 1909, p. 131) that it "appears often on its passage through, including the eastern islands."

Von Thanner shot a male in Fuerteventura on the

28th of February, 1910 (Orn. Jahrb. 1910, p. 229), and I have seen a stuffed example in Lanzarote which had been obtained there (Ibis, 1914, p. 63).

Range. The Ruff breeds in Europe and western Asia, and in winter visits Africa as far south as Cape Colony, ranging also to India.

Totanus totanus. Redshank.

Scolopax totanus Linn. Syst. Nat. 10th ed. 1758, p. 145—
Type locality: Sweden.

The Redshank is an **Occasional Visitor** to the Canary Islands.

Records of this species are scarce. It is first mentioned by Bolle, who saw a specimen in the Léon collection in Gran Canaria (J. f. O. 1857, p. 337).

Meade-Waldo says it is "occasionally met with" (Ibis, 1893, p. 205), and notes that it was fairly common at Orotava, Tenerife, between the 23rd and 25th of October (MS. diaries).

I saw a mounted example in the Gonzalez collection in Lanzarote (Ibis, 1914, p. 63), and observed a specimen on the Teston reefs in Fuerteventura between the 6th and 10th of May (Ibis, 1914, pp. 46, 285).

Polatzek did not know of any specimens, but "believes he saw it in Lanzarote" (Orn. Jahrb. 1909, p. 131).

The Redshank would certainly appear to be one of the rarest of the Waders which occasionally touch the islands on migration.

Range. The Redshank breeds throughout Europe and the Mediterranean countries and in Asia. In winter it ranges to Cape Colony, and occurs in India eastwards to Japan.

Totanus nebularius. Greenshank.

Scolopax nebularius Gunnerus in Leem, Beskr. Finn. Lapp. 1767, p. 251—Type locality: Norway.

An **Occasional Visitor**.

The Greenshank has been recorded under a variety of names by several writers.

Meade-Waldo saw many in Tenerife during the great migration in April 1890, "on the 25th and following days" (MS. diaries). He considers it a more regular visitor than *Totanus totanus*, *Totanus glareola*, or *Totanus ochropus* (Ibis, 1893, p. 205).

Cabrera himself shot various specimens in the neighbourhood of Laguna (Catálogo, p. 59).

In the Eastern Group Polatzek considered the Greenshank to be an irregular bird of passage, and mentions it from Lanzarote (Orn. Jahrb. 1909, p. 131).

I have only met with this species once myself on the island of Graciosa in the first week in June 1913 (Ibis, 1914, p. 72). I thought I saw it on one other occasion in February 1912, in Gran Canaria near Maspalomas (Ibis, 1912, p. 582).

Range. The Greenshank breeds in northern Europe and Asia, wintering in Africa as far as Cape Colony, also eastward to Japan and Australia.

Totanus hypoleucus. Common Sandpiper.

Tringa hypoleucos Linn. Syst. Nat. 10th ed. 1758, p. 149
—Type locality: Sweden.

The Common Sandpiper is a **Winter Visitor** to the Archipelago, a few remaining in the western islands throughout the summer.

I almost included this species as a Partial Resident, for it is apparently found in the Archipelago during every month of the year, but it has not yet been known to breed. Migration to and from the Archipelago undoubtedly takes place, and a few birds certainly remain throughout the year in the islands of Gran Canaria and Tenerife.

Webb and Berthelot record it from Gran Canaria, Lanzarote, and Graciosa, and say it is a migrant arriving in the winter (Orn. Canarienne, p. 38).

Godman believed that it probably bred in Tenerife (Ibis, 1872, p. 221), and Meade-Waldo observed "there are some of these Sandpipers about all the year round; a few probably breed" (Ibis, 1893, p. 205).

Von Thanner, on the other hand, includes it only as a regular bird of passage (Nov. Zool. xi. 1904, p. 431), but this ornithologist has paid less attention to the migrations of the Charadriidæ than to the land birds of the Archipelago.

Polatzek (Orn. Jahrb. 1909, p. 131) and Cabrera (Catálogo, p. 59) agree that it is a common species in winter and almost throughout the year, the former observer seeing them in the eastern islands until the spring.

Miss Annie Jackson noted the Common Sandpiper in Tenerife on the 4th of April at Orotava, and wrote to me that all had vanished by the 10th, which points to these having been passing migrants.

In Gran Canaria I have seen the Common Sandpiper in every month from December to April inclusive, and should not be at all surprised to find they breed in the Charco of Maspalomas (Ibis, 1912, p. 581).

I met with this species during my expedition in the eastern group only on the Toston reefs in Fuerteventura between the 6th and 10th of May, 1913 (Ibis, 1914, pp. 46, 285).

Range. The Common Sandpiper breeds throughout Europe, and in winter visits southern Africa, southern Asia east to Japan, also ranging to Australia and Tasmania.

Totanus ochropus. Green Sandpiper.

Tringa ochropus Linn. Syst. Nat. 10th ed. 1758, p. 149—
Type locality : Sweden.

The Green Sandpiper is an **Occasional Visitor**.

Meade-Waldo saw very few during his stay in the islands (Ibis, 1893, p. 205). In Tenerife Cabrera obtained it several times (Catálogo, p. 59).

Polatzek believed it to be a regular migrant to both the eastern and western groups, in which he will very possibly prove to be correct (Orn. Jahrb. 1909, p. 131).

Von Thanner records two birds in Fuerteventura on the 23rd of March, 1904 (Orn. Jahrb. 1905, p. 65), and two on the 16th of March, 1905 (Orn. Jahrb. 1908, p. 214).

Range. The Green Sandpiper breeds in northern Europe and Asia, and in winter extends to South Africa and India, ranging eastward to Japan.

Totanus glareola. Wood-Sandpiper.

Tringa glareola Linn. Syst. Nat. 10th ed. 1758, p. 149—
Type locality: Sweden.

An **Occasional Visitor** during migration.

The Wood-Sandpiper is said by Meade-Waldo to occur more frequently than the Green Sandpiper (Ibis, 1893, p. 205). His observations doubtless refer to Tenerife.

Polatzek records it (Orn. Jahrb. 1909, p. 131) from both Fuerteventura and Lanzarote (Arrecife); while von Thanner records two birds from Fuerteventura on the 23rd of March, 1904 (Orn. Jahrb. 1905, p. 65).

Range. The Wood-Sandpiper breeds in northern Europe and Asia, wintering in Africa southward to the Cape, in the Mediterranean countries, and eastward to Japan and Australia.

Limosa limosa limosa. Black-tailed Godwit.

Scolopax limosa Linn. Syst. Nat. 10th ed. 1758, p. 147—
Type locality: Sweden.

The Black-tailed Godwit is a somewhat irregular **Winter Visitor**, rarely met with in any of the islands.

It is first mentioned from Tenerife in 1810 by Ledru, and most students of Canarian ornithology have observed it in the winter months.

Webb and Berthelot record it from Tenerife in January, where they say a specimen was obtained on the south coast near Montaña Reja (Orn. Canarienne, p. 38).

Cabrera found it "frequent in certain winters in the neighbourhood of Laguna" (Catálogo, p. 57); and Meade-Waldo records seeing it occasionally in flocks in the same locality (Ibis, 1893, p. 205).

In February 1911 I saw what I took to be a Black-tailed Godwit on the beach of Maspalomas in Gran Canaria (Ibis, 1912, p. 582).

It has also been recorded from the eastern group by Polatzek (Orn. Jahrb. 1909, p. 130), who found it numerous during some winters and procured a specimen at Gran Tarajal in Fuerteventura. He also records that he often saw it in Lanzarote, where I have seen a stuffed example at Arrecife in 1913 (Ibis, 1914, p. 63).

Von Thanner shot a female on the 23rd of February, 1910, in Fuerteventura (Orn. Jahrb. 1910, p. 229).

Range. The Black-tailed Godwit breeds in northern and central Europe and in winter wanders to the Mediterranean basin, Abyssinia, the Azores and Madeira, and in the east to India and Ceylon.

Limosa lapponica lapponica. Bar-tailed Godwit.

Scolopax lapponica Linn. Syst. Nat. 10th ed. 1758, p. 147
—Type locality : Lapland.

The Bar-tailed Godwit is an **Occasional Visitor** to the Canary Islands.

It is recorded from Tenerife and Gran Canaria by Webb and Berthelot (Orn. Canarienne, p. 38). Cabrera obtained it on two occasions in the winter, presumably at Tenerife (Catálogo, p. 58); and Meade-Waldo notes that he only met with this species once (Ibis, 1893, p. 205).

In the eastern group Polatzek shot one in Fuerteventura and saw this Godwit several times at Arrecife (Orn. Jahrb. 1909, p. 130), where I examined one in the Gonzalez local collection in Lanzarote (Ibis, 1914, p. 63). Unlike many of the Waders which I have termed "Occasional Visitors," I do not think the Bar-tailed Godwit will ever prove to be a regular Bird of Passage through the Canary Islands.

Range. The Bar-tailed Godwit breeds in northern Europe and Asia, and in winter visits the Mediterranean basin and Africa, ranging south to Senegambia on the west coast. In the east it extends to the mouth of the Indus.

Numenius arquata arquata. Curlew.

Scolopax arquata Linn. Syst. Nat. 10th ed. 1758, p. 145
—Type locality : Sweden.

An **Occasional Visitor** in the western islands; more frequent in the eastern islands.

The above summarizes the conclusions arrived at by Mr. Meade-Waldo twenty-five years ago (Ibis, 1893, p. 205), to which I have little to add. I am quite unable to determine the correct status of the Curlew in the Canary Islands.

I have never seen the Curlew in Gran Canaria and only met with it twice during my expedition to the Eastern Group, once on the Toston reefs in the second week of May (Ibis, 1914, p. 46), and again on Graciosa I flushed four birds early in June (Ibis, 1914, p. 72).

Polatzek does not appear to have seen it at all, as he simply quotes Cabrera's note (Orn. Jahrb. 1909, p. 21) to the effect that the Curlew is met with accidentally in the Canaries and is more common in Fuerteventura and Lanzarote, though he had in his collection a specimen obtained in spring in Tenerife (Catálogo, p. 57).

Von Thanner watched a pair in Tenerife from the 14th of June, 1904, for several days (Orn. Jahrb. 1905, p. 212), and this ornithologist believed that he had established the Curlew as a breeding bird in Fuerteventura (Orn. Jahrb. 1908, p. 213). His evidence was not by any means satisfactory and rested on the fact that a broken egg—believed to belong to the species—had been found in the Matas Blancas in southern Fuerteventura by a Spaniard living there, who showed the broken egg-shell to von Thanner. If Herr von Thanner can supply further unmistakable evidence that the Curlew does breed in the Canary Islands, he will have made a discovery of considerable interest. From Polatzek's remarks (Orn. Jahrb. 1909, p. 21) it seems that this ornithologist doubted whether the broken egg-shell shown to von Thanner was that of *N. phaeopus* or *N. a. arquata*.

From the above notes it will be seen that very little is known about the Curlew in these islands. If it is a regular winter visitor it would assuredly have been noticed by Polatzek, who spent three years in the Archipelago. If a Bird of Passage, then what are birds doing so late as the

middle of June, yet I am loath to believe it is a partial resident even in the eastern islands. Speculation is useless without further data, so I have provisionally included it amongst the Occasional Visitors.

Range. The Curlew breeds in northern and central Europe wintering in Africa south to the Cape, and in the Mediterranean basin.

Numenius phæopus phæopus. Whimbrel.

Scolopax phæopus Linn. Syst. Nat. 10th ed. 1758, p. 146—
Type locality: Sweden.

The Whimbrel must be considered a regular and numerous **Bird of Passage**, and to a lesser degree a **Winter Visitor**; a few individuals remain in the Archipelago during the summer.

Despite the assertion of Herr von Thanner, who says that "the Whimbrel breeds in Graciosa, the fishermen often finding their eggs" (Orn. Jahrb. 1913, p. 190), I find it difficult to accept this statement without much better proof. Undoubtedly Whimbrels are present in the islands throughout the year, and we have Meade-Waldo's evidence (Ibis, 1889, p. 4; 1893, p. 205) that "they may be seen in pairs at the beginning of June," but as yet no competent ornithologist has found the eggs. My own opinion is that the Whimbrel is a regular migrant in spring and autumn, and that finding the conditions favourable a few (possibly barren) birds, arriving from the south with the spring migration, remain in the islands during the summer months. Likewise, when the return migration takes place in autumn, a larger number of migrants remain in the islands, particularly in the eastern group, throughout the winter.

This would account for the following very variable reports which different naturalists have made concerning the Whimbrel in the Canary Archipelago.

Webb and Berthelot say "of accidental passage" (Orn. Canarienne, p. 37).

Bolle wrote in 1857, "killed in Canaria, well known on the coast of Fuerteventura, mostly though in autumn and winter" (J. f. O. 1857, p. 338).

Meade-Waldo wrote in 1893, "A regular and numerous visitor, especially so in the eastern islands. A few may be seen all the year round. Many arrive in August, and they may be seen in pairs at the beginning of June" (Ibis, 1893, p. 205). He noted them on 23 October in Tenerife, and paired on 30 March and 6 April in Fuerteventura (MS. diaries).

Cabrera in the same year said, "it is found all the year on the shore" (Catálogo, p. 57).

Polatzek, in Orn. Jahrb. 1909, p. 21 (under *N. arquata*), remarks à propos of von Thanner seeing an egg-shell, partly broken, supposed to belong to the Curlew (*N. a. arquata*), and to have been taken in Fuerteventura: "I had before conjectured that *N. phaeopus* was a breeding bird in the Canary Islands." In a later part of the same paper Polatzek wrote: "Seen nearly all the year in suitable places, but up till now not authenticated as a breeding bird. I saw many in winter in Lanzarote, but they vanished after the middle of March" (Orn. Jahrb. 1909, p. 130).

Von Thanner in 1913 thought he had established the Whimbrel as a breeding bird, but his evidence is insufficient (*vide supra*).

My own field notes concerning this species are as follows:—

- 1911, 1912. Gran Canaria. Saw the Whimbrel in February near Maspalomas, on the rocky parts of this coast. A bird was shot on Las Palmas beach on 12 June, 1911, and a pair seen in 1912 on 1 June. They are often to be seen on the reef in Confital Bay (Ibis, 1912, p. 584).
1913. Eastern Group. Found the Whimbrel very plentiful in May and June, particularly numerous on the reefs at Toston (Fuerteventura) and on the N.W. coast of Graciosa (Ibis, 1914, p. 286).

I have a note that on 20 August, 1908, in lat. $31^{\circ} 13' N.$, long. $14^{\circ} 25' W.$, at sea, about 110 miles north of the Canary Islands, a Whimbrel flew twice round the SS. Goorkha, upon which I was returning from the Cape (MS. diaries).

Range. The Whimbrel breeds in northern Europe and winters in Africa ranging to the Cape, also in India and the Malay Peninsula.

Himantopus himantopus. Black-winged Stilt.

Charadrius himantopus Linn. Syst. Nat. 10th ed. 1758, p. 151—Type locality: Egypt.

The Black-winged Stilt is a **Rare Visitor** which has been recorded by four writers, specimens having been actually handled by different ornithologists.

Webb and Berthelot mention it in their book as "of accidental passage" (Orn. Canarienne, p. 33).

Bolle wrote: "Shot in Canaria (Léon collection). Might possibly nest in this island, especially at Maspalomas in the deep marshes" (J. f. O. 1857, p. 337).

Meade-Waldo heard of one from Fuerteventura and had a picture of the bird sent to him (Ibis, 1893, p. 204).

I identified a stuffed specimen in 1913 in the Gonzalez collection in Arrecife which had been shot in Lanzarote (Ibis, 1914, p. 63).

Range. The Black-winged Stilt breeds in southern Europe and through the greater part of Africa to the Cape, and as far east as Burma. It is migratory in the more northern parts of its range.

Recurvirostra avocetta. Avocet.

Recurvirostra avosetta Linn. Syst. Nat. 10th ed. 1758, p. 151—Type locality: Sweden.

The Avocet is a **Rare Visitor** to the Archipelago.

It is said to have been mentioned by Busto, an observer to whose work I have not had access.

The only specimen which came under my notice was a bird in the Gonzalez collection in Arrecife, which I identified for the owner. The bird had been shot in Lanzarote (Ibis, 1914, p. 63).

Range. The Avocet breeds in Europe from Denmark to the Mediterranean, and also in Africa locally as far south as the Cape. In winter it extends as far east as China.

Charadrius apricarius. Golden Plover.

Charadrius apricarius Linn. Syst. Nat. 10th ed. 1758, p. 150—Type locality: Sweden.

I can only include the Golden Plover as a **Rare Visitor**, probably during migration. I do not believe it ever winters in the islands.

Webb and Berthelot mention it in their book as a bird of passage in winter (Orn. Canarienne, p. 33), and had probably observed it during the autumn migration.

Polatzek says "it seems to appear often" (Orn. Jahrb. 1909, p. 128), but gives no data and probably he is only quoting Webb and Berthelot's opinion (*supra*).

Cabrera obtained one on the coast of Tenerife at Punta del Hidalgo, and remarks that it is only found there in the spring (Catálogo, p. 56).

From the above records it seems hardly possible to include the Golden Plover as even an Occasional Visitor. Webb and Berthelot termed most birds of this class "*Oiseaux de passage*," irrespective of the number of times they had appeared in the Archipelago; moreover, these authors were the pioneers of ornithological work in the Canaries, and they had not the advantage of previous workers' experiences. It was only to be expected that in several cases they should form incorrect conclusions of a bird's status in the Archipelago, for instance, they believed the Kentish Plover to be only a "bird of passage in winter," whereas it is resident and breeding as well as migratory.

Being a wading bird of powerful flight the Golden Plover may later prove to be much more regular in its appearance than now seems to be the case.

Range. The Golden Plover breeds in northern and central Europe eastwards to the Yenesei. It winter it visits northern Africa and has also been recorded from the Azores.

Squatarola squatarola. Grey Plover.

Tringa squatarola Linn. Syst. Nat. 10th ed. 1758, p. 149—Type locality: Sweden.

The Grey Plover is a **Bird of Passage** and a **Winter Visitor** in small numbers to the Canary Islands.

It has been recorded by various observers on the following occasions, all very scattered records.

- Dec. 1829. Confital Bay, Gran Canaria (Webb and Berthelot, Orn. Canarienne, p. 34).
 1 Nov. 1888. Two shot near Orotava, Tenerife (Meade-Waldo, MS. note-books, et Ibis, 1889, p. 4).
 22 Feb. 1912. A flock of seven, Maspalomas, Gran Canaria, two obtained (Bannerman, Ibis, 1912, p. 580).
 6-10 May, 1913. A pair seen in beautiful breeding plumage, Toston, Fuerteventura (Bannerman, Ibis, 1914, p. 46).
 27 May-7 June. A small flock of immature birds, Isla Graciosa (Bannerman, Ibis, 1914, p. 71).
 16 June, 1913. One seen in the collection of Gonzalez in Arrecife, Lanzarote (Ibis, 1914, p. 63).

Meade-Waldo found it to be a regular winter visitor and remarked that "many winter in the eastern islands" (Ibis, 1893, p. 203).

Most observers, including Polatzek (Orn. Jahrb. 1909, p. 128), agree that it is a winter visitor, but Cabrera (Catálogo, p. 56) says "it lives nearly all the year on the shores of the island of Tenerife." A few immature or barren birds may possibly remain in the islands during the summer, but for the most part I believe the Grey Plover leaves the Archipelago in the late spring to return again in the autumn.

A few birds probably pass through the islands with the stream of migratory waders in spring and autumn.

Range. The Grey Plover breeds in the Arctic regions and in winter ranges to South Africa, southern Asia, Australia, and South America.

Ægialitis hiaticula hiaticula. Ringed Plover.

Charadrius hiaticula Linn. Syst. Nat. 10th ed. 1758, p. 150—Type locality: Sweden.

This is a regular **Bird of Passage** to all the islands, sometimes remaining for a period before passing on.

The birds are never very numerous and seem to arrive in small parties, which are chiefly on the move from the latter part of February to May, earlier arrivals being exceptional, caused by unusual weather conditions. None have been

known to breed in the islands. The return migration takes place in September, October, and November.

In the spring migration northwards the earliest date upon which I have noted the appearance in Gran Canaria is 10 January, 1911 (Ibis, 1912, p. 583); this, however, is an unusually early record, and these birds may have remained in the island since the autumn migration. The following year, when in this island during the whole of February, none were noticed until the 23rd of the month (*l.c.*).

Meade-Waldo found them in Fuerteventura on 31 March, 1888, and again on the 6th of April of the same year, when he remarks they were scarce (MS. diaries).

Polatzek records them as not rare in spring as a bird of passage (Orn. Jahrb. 1909, p. 128).

I found a few Ringed Plovers on the reefs at Toston, Fuerteventura, as late as 6–10 May, 1913, but nowhere else on the coast (Ibis, 1914, pp. 46, 282).

The movement again takes place in the autumn, when Meade-Waldo noticed that the Ringed Plovers arrived regularly in the islands on their passage north (Ibis, 1893, p. 203). The earliest date which I have recorded is 5 September (1910), birds which were shot then in Gran Canaria being now in the British Museum (Ibis, 1912, p. 583).

Meade-Waldo noted them from 23–25 October at Orotava, Tenerife, and remarks that they were fairly common (MS. diaries).

Curiously enough, all the specimens which I have shot in the Canary Islands have been immature birds. I have come to the conclusion that the Ringed Plover which passes through the Canaries is the large race mentioned by Seebohm and which I recognize as distinct.

Range. The large typical race of the Ringed Plover breeds from arctic America to central Europe and winters from the Mediterranean basin to the Cape. Specimens have been examined by Dr. Lowe and myself from Greenland, Iceland, France, Portugal, Gibraltar, and the Canaries; they winter down the west African coast to the Cape.

Ægialitis dubius curonicus. Lesser Ringed Plover.

Charadrius curonicus Gmelin, Syst. Nat. i. pt. 2, 1789, p. 692—Type locality: Curonia, *i. e.* Courland.

It is difficult to know exactly how to define the status of the Lesser Ringed Plover in the Canary Islands. From the present available data I can only consider it to be a **Rare Visitor** which has been known to breed. It is quite possible that it is a Bird of Passage in very small numbers, but until 1910 it had been entirely overlooked and had never been previously recorded by anyone!

The only bird which I have ever seen I shot on the 19th of January, 1910 (bill 13 mm., wing 117 mm.) in Gran Canaria, as it flew from the water-tanks beyond the golf-links—a very favourite place for small waders when the tide is up.

The following year (April 1911) Mr. P. R. Pittard found two eggs laid in a barranco more than a mile from the sea (close to where I had shot my bird in 1910), which he forwarded to me in England (*Ibis*, 1912, p. 582). There is no doubt whatever that they are the eggs of the Lesser Ringed Plover. They were identified by the Rev. F. C. R. Jourdain, and other oologists have since examined them and concur in the identification. This clutch is now in the British Museum.

Range. The Lesser Ringed Plover breeds in the greater part of Europe and Asia extending east to Japan, and is also said to be resident in, and to nest in, north-west Africa (B. O. U. List of Brit. Birds, 1915, p. 246) north of the Sahara. It winters in Africa and India and on the Sunda Islands (Miss Jackson and Hartert, *Ibis*, 1915, pp. 532–533).

Ægialitis alexandrina alexandrina. Kentish Plover.

Charadrius alexandrinus Linn. Syst. Nat. 10th ed. 1758, p. 150—Type locality: Egypt.

The Kentish Plover is a **Partial Resident** in the Canary Islands.

Hab. in Archipelago.

Western Group: Gran Canaria, Tenerife, Palma, Gomera, Hierro.

Eastern Group: Fuerteventura, Lanzarote.

Outer islets: Graciosa.

Obs. Many birds remain in the Archipelago throughout the year and breed in numbers along the shores, especially in the eastern islands. It is very difficult to estimate the amount of migration which takes place, but being a wading bird of very wide distribution and ranging south as far as Cape Town, the island birds are almost sure to have their numbers augmented by birds of passage. It is particularly numerous on the shores of the eastern islands.

Although most early writers mention the Kentish Plover in their accounts of the ornithology of the islands, none make any allusion to migratory movements of this species, which I believe to take place both in the spring and in the autumn.

Range beyond the Archipelago.

The typical form of the Kentish Plover breeds in Europe from the southern coasts of England, south Sweden, Denmark, and Rügen, to the Mediterranean, Azores, Canary Islands, Madeira, and Cape Verde Islands, in North Africa as far as the salt swamps of the northern Sahara (Bledet-ahmar, south of Touggourt), absent from north Russia but throughout central Asia to Korea (Miss Jackson and Hartert), ranging in Africa as far as the Cape in winter, also to India and east to Borneo and Japan.

Eudromias morinellus. Dotterel.

Charadrius morinellus Linn. Syst. Nat. 10th ed. 1758, p. 150—Type locality: Sweden.

This is a **Rare Visitor** to the Archipelago which has not been reported for many years.

Meade-Waldo mentions it from personal observation between 1887–91 as an occasional visitor in flocks to the Laguna plains in Tenerife (Ibis, 1893, p. 203): he says he saw flocks of Dotterels one day close to the road just outside

Laguna (Ibis, 1889, p. 515). The date is not mentioned in either 'The Ibis' or his MS. diaries.

Cabrera also includes it in his list and says he obtained a specimen in the summer* [en verano] in the neighbourhood of Laguna (Catálogo, p. 56). Meade-Waldo examined this bird on 2 December, 1888 (MS. diaries).

Range. The Dotterel breeds in northern Europe and Siberia, in the rest of Europe it is a bird of passage, and in winter migrates to northern Africa, Syria and Persia. The Canary Islands are probably the limit of the southern range reached by this species. In the east it has wandered to Japan.

Vanellus vanellus. Lapwing.

Tringa vanellus Linn. Syst. Nat. 10th ed. 1758, p. 148—
Type locality : Sweden.

The Lapwing is a **Winter Visitor** and regular **Bird of Passage**.

This bird is first recorded by Webb and Berthelot (Orn. Canarienne, p. 34), who considered that it only appeared in winter after strong south and south-east winds, and mention a specimen killed in Tenerife in 1830. Most modern authors agree that the Peewit is a regular Winter Visitor, but of late years it has become less plentiful, and in Gran Canaria is now seldom met with. In fact I have only seen one bird in this island during the many winter months which I have spent there (Ibis, 1912, p. 580). Bolle records "numerous flocks in winter in Gran Canaria" (J. f. O. 1857, p. 337), but that is not so now.

In Tenerife Meade-Waldo found it a regular winter visitor, occasionally in large flocks (Ibis, 1893, p. 203).

Von Thanner wrote concerning the bird in this island : "It is a regular bird of passage. In the spring of 1901 there was such a continuous heavy rain that the ditches of the Laguna Plain were flooded and formed lakes—this

* There may be some mistake about the time of year when this example was obtained, unless perchance the bird from sickness or some other cause had to remain behind when the rest of the flock had left for their northern breeding grounds.

district with its reeds attracted many Peewits ('Kiebitze'). Examples appear every year, but only in such numbers after a particularly wet year when the conditions are so suitable to them" (Nov. Zool. xi. 1904, p. 431).

Cabrera likewise says it is a migratory species common in the winter, and that he possessed various specimens from Tenerife (Catálogo, p. 56).

The Lapwing has often been observed in the eastern islands. Bolle says: "In winter a well-known visitor in Fuerteventura, where it is sometimes seen in great numbers" (J. f. O. 1855, p. 176).

Meade-Waldo, who visited all the islands, writes: "I have seen it myself only in Tenerife and Fuerteventura." He shot a Lapwing in the latter island on the 12th of March, 1889 (Ibis, 1889, p. 509).

Polatzek, who lived in the eastern group, says: "A passing migrant and winter visitor. I observed it on the sparse grass-growth of the mountains in the eastern islands" (Orn. Jahrb. 1909, p. 128).

Von Thanner records it from Tenerife as a Regular Bird of Passage (Nov. Zool. xi. 1904, p. 431).

The Lapwing certainly visits Lanzarote also. I found a stuffed specimen in Gonzalez's locally-made collection at Arrecife in that island (Ibis, 1914, p. 63).

Range. The Lapwing breeds in Europe and in Asia to Japan, and sparingly in Morocco. It winters in southern Europe and in northern Africa, ranging eastwards to south China.

Pluvianus ægyptius. Egyptian Plover.

Charadrius ægyptius Linn. Syst. Nat. 12th ed. 1766, p. 254
—Type locality: Egypt.

A Rare Visitor.

There is only one record of this species occurring in the Canary Islands. Cabrera possessed one which was shot in the neighbourhood of Laguna, Tenerife. The bird was in his collection (Catálogo, p. 56).

There seems to be no reason to doubt this record as genuine.

Range. The Egyptian Plover inhabits the greater part of west Africa, extending from the Coanza river to Senegal and across north-east Africa to Egypt.

Arenaria interpres interpres. Turnstone.

Tringa interpres Linn. Syst. Nat. 10th ed. 1758, p. 148—Type locality: Sweden.

The Turnstone is a **Bird of Passage** and a **Winter Visitor** in large numbers to the islands; many individual birds remain throughout the summer.

It is one of the commonest waders, excepting perhaps the Kentish Plover, to be found in the Archipelago, those which remain during the summer months doubtless being immature or non-breeding birds.

When in the eastern islands in May and June, 1913, I constantly met with large and small flocks all round the coasts of Fuerteventura, Lanzarote, and Graciosa. Some few birds were in full breeding-plumage, but those which I dissected had the testes undeveloped (Ibis, 1914, p. 284).

Von Thanner believes the Turnstone to be a regular Bird of Passage (Nov. Zool. xi. 1904, p. 431), but I do not know from his notes whether he considers it passes through the Archipelago at both the spring and autumn migration seasons. Its numbers are certainly greatly augmented in the winter: occasionally I have seen very large flocks in Gran Canaria in January and February, and once on the 27th of January I watched an enormous flock of over a hundred birds on the reefs in Confital Bay (Ibis, 1912, p. 580).

Polatzek met with it frequently on the shore and notably in the eastern islands (Orn. Jahrb. 1909, p. 128).

Godman stated (Ibis, 1872, p. 221) that the Turnstone undoubtedly bred in Flores in the Azores, and I am sorry to say I quoted this statement in my "Birds of Gran Canaria" (Ibis, 1912, p. 581) without further question. I do not know what evidence Godman had when he wrote this, but I cannot believe that the Turnstone has ever bred in any of the Atlantic islands without having very definite proof. Certainly Bolle, in 1852 and 1856, believed that such a thing

was possible in the Canaries, for he wrote of this bird : "It is a constant shore dweller in Fuerteventura and Canaria. On the south coast at Maspalomas I have seen them in spring in pairs, and am almost certain they breed there" (J. f. O. 1857, p. 337). Bolle visited Maspalomas in May. Undoubtedly Turnstones may be seen in pairs in June. Von Thanner mentions shooting two birds, "out of several pairs on the 14th June in 'Tenerife'" (Orn. Jahrb. xvi. 1905, p. 212), but the same thing may be witnessed in the British Isles where, to quote the latest B. O. U. List, p. 251, "A good many birds in breeding-plumage, sometimes in pairs, remain throughout the summer, but have never been proved to nest, even in the Shetland Isles."

The islanders certainly believe they breed in the Canaries. In this connection Meade-Waldo wrote (Ibis, 1893, p. 204) : "... many spend the summer . . . and though I have seen them in pairs in June, I could not see that they were nesting : the peasants assured me that they did nest."

Range. The Turnstone breeds in Greenland and Iceland, probably in all the islands in the Arctic Ocean, and in northern Europe. It has an enormous range in winter, visiting all the five continents besides Oceania.

Family LARIDÆ.

Larus canus canus. Common Gull.

Larus canus Linn. Syst. Nat. 10th ed. 1758, p. 136—Type locality : Sweden.

A Rare Visitor.

The Common Gull has only been recorded from the Canary Islands by Meade-Waldo (Ibis, 1893, p. 206), who saw but two of this species, probably in Tenerife. He does not mention the date, but doubtless they appeared during the winter months.

Range. The Common Gull breeds in northern Europe and Asia, and in winter visits north Africa and the Mediterranean countries, reaching China and Japan on the Pacific side.

Larus marinus. Greater Black-backed Gull.

Larus marinus Linn. Syst. Nat. 10th ed. 1758, p. 136—
Type locality : Sweden.

The Greater Black-backed Gull can only be considered a **Rare Visitor** at the present day.

That it used to be a resident breeding-bird prior to 1857 is vouched for by Webb and Berthelot*, and also Bolle.

This Gull is first recorded from Tenerife by Ledru in 1810. Next Webb and Berthelot, who were in the islands in 1828–1830, gave the following account of it in the Canary Islands:—

“*Hab.* Dans l’île d’Alegranza.

“*Obs.* Cet oiseau n’habite que l’île d’Alegranza, ou il est assez commun. On va le chasser toutes les années pour avoir son duvet, qu’on expédie à Londres où on le vend comme de l’édredon. Ce Goëland niche dans les cavités des rochers qui bordent la côte ; il defend les approches de son nid en volant contre le chasseur, qu’il tâche de repousser par ses cris et en le frappant de ses ailes. Il pond trois ou quatre œufs assez gros, gris-jaunâtre ou olivâtre-clair, avec des marbrures d’un gris foncé et d’un brun noir . . .” etc. (Orn. Canarienne, p. 42).

Bolle bears out the above statement, stating that the owner of the island (Allegranza) draws a considerable revenue from these birds on account of their down (J. f. O. 1855, p. 177), and later he wrote : “It is said of them †—and I was an

* Webb and Berthelot did not confuse the Greater Black-backed Gull with the large Shearwater which breeds in hundreds on Allegranza. They give an account of this bird also (Orn. Canarienne, p. 43).

† It has been suggested that through a printer’s error Bolle’s notes should refer to the Shearwater (*Puffinus kuhli fortunatus*), which is such a source of revenue to the owner of Allegranza at the present day. But if this is so, why does Bolle, *who personally visited the island*, say that they “defend their nest and eggs . . . by flapping their wings.” The Shearwater only lays *one* egg, and as I can personally vouch for, never “flaps its wings” in defence of its nesting-hole. Bolle was too careful an ornithologist to have mistaken a Shearwater for a Greater Black-backed Gull. Moreover, Bolle gives a long and accurate account of this Shearwater in both his papers, J. f. O. 1855, p. 177, 1857, p. 344.

eye-witness of this at Allegranza—that they defend their nest and eggs from those who would rob them by powerfully flapping their wings” (J. f. O. 1857, p. 341).

Neither Cabrera (Catálogo, p. 66) nor Godman (Ibis, 1872, p. 223) seem to have met with the bird themselves, but quote former writers. Godman definitely states that he did not meet with it, but he did not visit the eastern islands.

The most accurate information is that given by Meade-Waldo, who between the years 1887 and 1891 found it “much scarcer than the Lesser Black-backed Gull” (Ibis, 1893, p. 206).

Polatzek only once saw two Gulls which might have belonged to this species (Orn. Jahrb. 1909, p. 23).

When I visited the eastern islands in May and June 1913, a special search was made for this Gull. I visited personally Fuerteventura, Lanzarote, Graciosa, and Montaña Clara, spending over a week on each of the smaller islands. Moreover, I landed on the West Rock and sent my taxidermist (Mr. A. H. Bishop) for a week to Allegranza, where he made enquiries about this Gull without gaining any information whatsoever (Ibis, 1914, p. 85). Neither of us saw a single specimen in any of the islands. Stress of weather prevented our landing on the East Rock, but I came to the conclusion that *Larus marinus* must long since have ceased to supply the owner of Allegranza “with a considerable revenue”! (Ibis, 1914, p. 289).

Range. The Greater Black-backed Gull breeds in Europe as far south as about lat. 50° N. (on the north-west coast of France), also in north America. In winter it occasionally visits the Mediterranean and has wandered to the Azores and Canaries, and on the American side reaches the Bermudas.

Larus argentatus cachinnans. Yellow-legged Herring-Gull.

Larus cachinnans Pallas, Zoogr. Rosso-Asiat. ii. 1827, p. 318—Type locality : S.E. Russia.

This Gull is a **Partial Resident**.

Hab. in Archipelago.

Western Group. } The coasts of all the islands, prin-
Eastern Group. } cipally breeding on Roque del Este
Outer islets. } and Anaga rocks.

The status of this Herring-Gull in the Canary Islands has not much changed since Meade-Waldo wrote (*Ibis*, 1893, p. 206): "This is the common resident Gull. It breeds in all the islands." I question however whether it now breeds in all the islands.

Bolle is evidently referring to this species (J. f. O. 1857, p. 341) under *Larus argentatus*, where he notes that it is frequent around Canaria, and breeds under the bushes of the dunes of Maspalomas, and can nearly always be seen sitting on the boards and barrels in the harbour of Santa Cruz.

I have included it as a partial resident as its numbers are certainly augmented in the winter, and the birds which breed in the Archipelago probably range far afield.

Range beyond the Archipelago.

The Yellow-legged Herring-Gull is the common Gull of the Mediterranean, Black and Caspian Seas, ranging east to Lake Baikal. It breeds in all the north Atlantic islands. In winter it ranges down the west coast of Africa to Senegambia, and according to the B. O. U. List (p. 253) apparently reaches Angola.

Larus fuscus fuscus. Continental Lesser Black-backed Gull.

Larus fuscus Linn. Syst. Nat. 10th ed. 1758, p. 136—

Type locality: Sweden.

A Rare Visitor.

As might be expected the Eastern (dark-backed) race of the Lesser Black-backed Gull is a very rare straggler to the Canarian seas.

Meade-Waldo shot a single example at Orotava in Tenerife on 21 January, 1888. The skin is now in the British Museum. In his List (*Ibis*, 1893, p. 206), his note "there are generally a few of these gulls about in winter" obviously refers to *Larus fuscus affinis*.

Range. *L. f. fuscus* breeds in Scandinavia eastwards. In winter it visits the eastern Mediterranean ranging to the head of the Persian Gulf.

Mr. P. R. Lowe (Bull. B. O. C. vol. xxix. p. 120) suggests that it migrates southwards across Europe, possibly by way of the rivers Vistula and Dnieper, to winter in the eastern Mediterranean, Egypt, and the Red Sea.

Larus fuscus affinis. British Lesser Black-backed Gull.

Larus affinis Reinhardt, Vidensk. Meddel. Kjöbenhavn for 1853, 1854, p. 78—Type locality: Greenland.

A Winter Visitor to the Canary Islands. It may also prove to be a Bird of Passage in small numbers.

The Lesser Black-backed Gull (undoubtedly the above subspecies) has been recorded by old writers, such as Busto, Ledru, and Serra, from the islands.

Cabrera believed it to be a Bird of Passage, common in winter (Catálogo, p. 66).

According to Meade-Waldo there are a few about in winter (Ibis, 1893, p. 206, et 1889, p. 12), while Polatzek considers it "frequent in the winter" (Orn. Jahrb. 1909, p. 133), his remarks doubtless referring to the Gull in the eastern islands, while Meade-Waldo's notes refer mostly to the western islands.

Miss Annie Jackson wrote to me that she had seen this Gull at Orotava on the 1st of April, doubtless one of the birds which had wintered farther south on the west coast returning north to breed. Whether these West African birds pass through the Archipelago regularly we have not enough evidence to show.

When I wrote my paper on the Birds of Gran Canaria (Ibis, 1912, p. 575), I thought that this Gull would very probably be found to breed in the Archipelago. It seems, however, to be only a winter visitor and possibly a rare bird of passage. In February 1912 I saw a number of these birds in Las Palmas harbour, both adult and immature; they used to roost in the cliffs beyond Confital Bay and were still present on March 11, when I left the

island*. I was again in Gran Canaria on the 1st of June, but all the Gulls had disappeared. I then imagined that they had resorted to the outer islets to breed, but I proved this supposition to be unfounded in June 1913, when I visited all the outer islets and the large islands of the eastern group excepting the East Rock. I did not find this Gull anywhere during the six weeks I spent in May and June, though constantly on the coasts and on the look out for it (Ibis, 1914, p. 288).

The question as to whether this Gull was indeed *Larus fuscus affinis*, was entered into in 'The Ibis,' 1912, pp. 575, 576, et Bull. B. O. C. xxix. p. 121. Now, thanks to Mr. H. F. Witherby, we are able to state that, at any rate, some of the birds which breed in Great Britain visit the Canary Archipelago in winter—as we have conclusive evidence in two cases which I have already reported (Ibis, 1914, p. 288).

(a) Lesser Black-backed Gull marked as a nestling (No. 33,912) on August 2, 1913, at the Farne Islands, recovered off Cape Juby on November 13, 1913, by schooner 'Luz.'

(b) Another bird ringed on the same day at the Farne Islands, shot in Lanzarote on January 5, 1914.

Range. The British Lesser Black-backed Gull breeds on the western coasts and islands of Europe, probably as far as Spain, also on Alboran island off Morocco. It winters in the western Mediterranean, in the Azores and Madeira group, and West Africa to the Gold Coast, while it has even been reported as far south as Bonny in southern Nigeria (Saunders).

Larus ridibundus. Black-headed Gull.

Larus ridibundus Linn. Syst. Nat. 12th ed. 1766, p. 225—Type locality: England.

An Occasional Visitor which appears in fair numbers on rare occasions.

According to Cabrera (Catálogo, p. 66) and Polatzek (Orn. Jahrb. 1909, p. 133), neither of whom had seen the

* Three were obtained—the skins are in the British Museum.

bird personally, the Black-headed Gull is mentioned first by Serra (whose account published in the 'Revista de Canarias' between 1879 and 1882 I have not seen) as an occasional though rare visitor.

Other ornithologists do not appear to have met with the species until I saw it myself in the islands. I first met with *L. ridibundus* on the 20th of February, 1911, when numbers of them visited Las Palmas harbour and remained until the end of the month. All seemed to be immature birds, and the three * which I shot appeared to be in their second year. I did not see a single fully adult bird (Ibis, 1912, p. 577).

I next saw this species in Lanzarote ; here I identified an adult bird in full breeding-plumage with entire brown head, which had been obtained by Don Gonzalez y Gonzalez in or near Arrecife harbour. I could not ascertain the date when it had been shot (Ibis, 1914, p. 63).

Range. The Black-headed Gull breeds in Europe generally southwards to the Mediterranean, and through temperate Asia. It has an extensive winter range, visiting north Africa, extending eastwards through India and China to Japan.

***Rissa tridactyla tridactyla.* Kittiwake.**

Larus tridactylus Linn. Syst. Nat. 10th ed. 1758, p. 136
—Type locality : Great Britain.

An Occasional Visitor in winter.

The Kittiwake is not often seen in Canarian waters at the present day. Godman was quite wrong when he wrote (Ibis, 1872, p. 222) : " Both this and the following Gull [*Larus fuscus*] probably breed about the coasts in Teneriffe," adding, possibly correctly, " I saw either this species or *L. canus* in the middle of May in Teneriffe, though I failed to secure specimens." Meade-Waldo saw " very few of these gulls " during his travels amongst the islands (Ibis, 1893, p. 206) ; and certainly, if, as Bolle affirms (J. f. O. 1857,

* Skins in the British Museum.

p. 341), they appeared around the Canaries every winter, they can no longer be considered regular winter visitors.

Cabrera records the Kittiwake in his list (Catálogo, p. 66) as an accidental migrant. It was seen off the island of Palma by Koenig (J. f. O. 1890, p. 487).

In the eastern group I saw a stuffed example in the Gonzalez collection at Arrecife, without any data, except that it had been obtained locally (Ibis, 1914, p. 63).

Looking through Mr. P. R. Lowe's MS. note-books which he has been good enough to lend me, I see that he noted Kittiwakes when sixty miles north of Las Palmas, within sight of land, on the 7th of January, 1906, and later that more were seen on the 2nd of January, "and followed the yacht from Las Palmas," I presume in a southerly direction (unpublished MS.).

Range. In the Atlantic Ocean the Kittiwake breeds in the arctic and subarctic regions, also in the north-west of France. In winter it visits the Mediterranean and Azores, extending south of the Canaries to Senegal, which is probably the southern extent of its winter range on the African side of the Atlantic.

***Sterna hirundo.* Common Tern.**

Sterna hirundo Linn. Syst. Nat. 10th ed. 1758, p. 137—
Type locality: Sweden.

The Common Tern is a **Summer Visitor** to the islands.

It used to breed in large colonies in Gran Canaria and in Fuerteventura, but of late years has, I fear, practically ceased to do so. It may still nest on some of the isolated rocks off Tenerife, on the top of which, according to Meade-Waldo, it used in 1891 to lay its eggs (Ibis, 1893, p. 206). Cabrera had both skins and eggs in his collection, and considered it to be a resident (Catálogo, p. 67).

Sterna hirundo is first mentioned from the islands by Ledru, who found it in Tenerife in 1810 (Voyage aux isles de Teneriffe etc.). Next it is referred to by Webb and Berthelot in 1841, who give as its habitat "the islands which are nearest to Africa," *i. e.* the eastern group. They

add that it turns up from time to time in the western islands, but is extremely common in Fuerteventura and Lanzarote (Orn. Canarienne, p. 42).

From Bolle (J. f. O. 1855, p. 177) we learn that *S. hirundo* are observed on the coast of Fuerteventura and Lanzarote, seldom on the western islands, but in this he was mistaken, for in 1857 he published a really good account of the breeding grounds of this Tern at Maspalomas in Gran Canaria, to which further reference should be made (J. f. O. 1857, pp. 341-344). Bolle here says that his visit took place in May, and he further mentions "an extraordinary big colony at Corralejo in Fuerteventura" (*l. c.* p. 343).

Meade-Waldo was of opinion that the Common Tern (between 1887 and 1891) was a summer visitor to all the islands, the birds spending the winter in the eastern islands (Ibis, 1893, p. 206). The latter part of this statement is not borne out by Polatzek's observations, who wrote (Orn. Jahrb. 1909, p. 22):—"The Tern comes in spring and leaves in autumn, and breeds or has bred in Tenerife and Gran Canaria." On April 10, 1905, Polatzek visited the Maspalomas breeding-ground but saw no Terns, and concluded that they had not yet arrived from their winter quarters. So far as I could learn, when I visited Maspalomas in February 1912, the Terns had quite ceased to breed in the district (Ibis, 1912, p. 577), and this can only be due to the systematic way in which the short-sighted natives plundered their nests, for the district has apparently not changed a whit since Bolle's day.

When I last visited the eastern islands in May and June in 1913, our route took us close to Corralejo, but we saw nothing of the colony which Bolle mentions, nor did we meet with Terns in any of the large or small islands—almost conclusive proof that they have ceased to breed there. The fishermen knew the "Garajao" well, and it is probable that it is *S. hirundo*, which according to their statements visits the islands in summer when the "sardinas" are plentiful (Ibis, 1914, p. 286). I saw a stuffed example in Lanzarote in the Gonzalez collection from that island (Ibis, 1914, p. 63).

Von Thanner did not meet with it in Fuerteventura in March 1904, when he visited the island (Orn. Jahrb. 1905, p. 65). In a later paper he notes that it formerly occurred in Gran Canaria, but he did not meet with it himself in February 1909, when he visited its old breeding-grounds (Orn. Jahrb. 1910, p. 99).

Range. The Common Tern breeds in Europe from Norway to the Mediterranean, also in the Azores and islands of the Madeira group, as well as in north Africa and in parts of Asia. In winter it visits Africa as far as the Cape, also South America.

Sterna minuta minuta. Little Tern.

Sterna minuta Linn. Syst. Nat. 12th ed. 1766, p. 228—Type locality: S. Europe.

The Little Tern is an **Occasional Visitor**.

It has been mentioned by several writers including Ledru in 1810 from Tencrife, from which island it was recorded by Godman (Ibis, 1872, p. 222).

Webb and Berthelot say it frequented the eastern part of the Archipelago (Orn. Canarienne, p. 42), and this is borne out by Cabrera (Catálogo, p. 67), Bolle (J. f. O. 1855, p. 177), and Polatzek (Orn. Jahrb. 1909, p. 133), who note that it is often observed in the eastern islands. I did not see it myself in May or June, when I visited this part of the Archipelago in 1913.

Range. The Little Tern breeds in Europe generally and in Asia and north Africa from Morocco to Egypt. In winter it visits the west coast of Africa ranging to the Cape, extending in the east to Burma and Java.

Sterna sandvicensis sandvicensis. Sandwich Tern.

Sterna sandvicensis Latham, Gen. Synop. Suppl. i. 1787, p. 296—Type locality: England.

The Sandwich Tern is an **Occasional Visitor** in winter.

It is possible that this Tern may regularly visit the Canary Archipelago on migration, but proof of this is wanting and rests solely on the word of fishermen, who say that it is to be seen every February in Gran Canaria harbour. In 1911

Sandwich Terns certainly turned up in the Puerto de la Luz, and three birds were obtained on the 28th of February, all in full winter plumage, which went with my collection to the British Museum (Ibis, 1912, p. 578). Meade-Waldo saw flocks of this species off Fuerteventura (Ibis, 1893, p. 206), and Webb and Berthelot (Orn. Canarienne, 1841, p. 41) give Lanzarote and Fuerteventura as its "habitat." I identified a bird in the Gonzalez collection which had been shot near Arrecife in Lanzarote (Ibis, 1914, p. 63).

I do not think *S. sandvicensis* breeds anywhere in the Archipelago, and the statement to this effect in the B. O. U. List of Birds, 1915, p. 268, is without foundation, and was doubtless taken from Webb and Berthelot's book (*supra*), which is long out of date.

Range. The Sandwich Tern breeds in Europe and is not known to nest south of Tunisia on the eastern side of the Atlantic. In winter it follows the west coast of Africa down to the Cape of Good Hope and round to Natal.

[To be continued.]

XXXIII.—Obituary.

SIR WILLIAM MACGREGOR.

It is with great regret that we notice the death of the Rt. Hon. Sir William Macgregor, G.C.M.G., which occurred at Aberdeen on 2 July last. He was 72 years of age.

In Sir William Macgregor not only has the Empire lost a great colonial administrator but a most learned man in all branches of natural history and an explorer and geographer of great note. The son of an Aberdeenshire farmer, he was educated for the medical profession, and, like Cecil Rhodes, in order to save his life, accepted the post of medical officer at Seychelles, subsequently being promoted to Mauritius and Fiji.

Having acted for a time as High Commissioner of the Western Pacific, he was in 1881 appointed Administrator of British New Guinea, declaring Queen Victoria's sovereignty over the territory in September. He spent over

ten years in New Guinea exploring and developing the resources of the country. He was subsequently Governor of Lagos, of Newfoundland, and of Queensland, and retired in 1914 to settle in Scotland.

During his services in New Guinea Sir William made many journeys into the interior and explored the Owen Stanley range and Mounts Maneao and Scratchley. He made large collections of birds, which were sent to the Queensland Museum at Brisbane, where they were described by Mr. C. W. De Vis, partly in the Reports of the Museum and partly in the pages of 'The Ibis' between 1891 and 1897. Among many other wonderful discoveries were *Cnemophilus macgregorii*, figured on plate x. of 'The Ibis' for 1891, a new Paradise-bird from the Owen Stanley mountains; *Loria mariæ*, named after Lady Macgregor, from Mount Maneao, and figured on plate viii. of 'The Ibis' for 1895; *Macgregoria pulchra*, another Paradise-bird from Mount Scratchley, also figured in 'The Ibis' on plate vii. of the volume for 1897.

Another remarkable form, *Paramythia montium*, described by De Vis and figured in 'The Ibis' (1893, pl. vii.), was first obtained by Sir William in the Musgrave range. Its affinities appear to be near the Starlings, but it is now generally placed in a family by itself.

Sir William Macgregor will always be remembered as the great pioneer of the exploration of the interior of New Guinea. Personally one of the most learned and modest of men, his feats of daring and endurance will long be remembered by those who had the good fortune to be associated with him in New Guinea and elsewhere.

FRANCIS RICHARD SALISBURY BAXENDALE.

It is with deep regret that we record the death of Mr. F. R. S. Baxendale, Commissioner of Larnaca, Cyprus, and well known to readers of 'The Ibis' for his contributions to the ornithology of that island. He was born on the 6th of September, 1860, at Maidstone, and was the eldest son of Richard Baxendale, Vicar of Willington. The church

of St. John stood in the park of the Earl of Romney, and in these delightful grounds Frank Baxendale first developed his innate love for natural history and sport. He was educated at Honiton and Charterhouse, where he stayed till 18 years of age, and after a short experience of engineering, and on recovery from an attack of rheumatic fever, he was given a Commission in the Civil Service, and began his career as a Cadet in Fiji in 1884. Two years later, having mastered the language, he was appointed officer of the armed native Constabulary and in 1888 was made Stipendiary Magistrate. In 1892 he was promoted to the post of Resident Commissioner for the Province of Cakandrove, where the success of his administration was mainly due to his unfailing patience and gentleness in dealing with the natives, while further appointments as Superintendent of Police and Deputy Commandant of the Native Constabulary were conferred on him, and in 1897 he was made Stipendiary Magistrate of Levuka and Tailevu, and Commissioner of Lomaiviti. For three years he was Native Commissioner, and in this capacity a member of the Executive and subsequently also of the Legislative Council. During the twenty-two years from 1884 to 1906 Mr. Baxendale only went on leave for one year, but in 1906 he left for England, returning in the following year, when he was made Commissioner of Paphos, Cyprus, and proceeded in November to take up his duties there. Here his interest in ornithology received a great stimulus from the presence of other workers. Sir John Bucknill had invited Mr. C. B. Horsburgh to come out to Cyprus on behalf of the Natural History Society of Cyprus, then recently formed. On his arrival he stayed for some time with Mr. Baxendale, and began to collect birds. Mr. Baxendale was an excellent shot and Mrs. Baxendale was initiated into the mysteries of skinning, so that on Mr. Horsburgh's suggestion and with the help of his wife, Mr. Baxendale began to form a collection of Cyprus birds. This proved a tremendous interest, which lasted to the end of his life. From quite small beginnings the collection gradually increased, until at the time of his

death some 230 species were represented, most of them by two or more specimens, and in several cases the only records for the island. In 1910 Mr. Baxendale was promoted to Famagusta, a more congenial spot and also interesting from an ornithological standpoint. With the outbreak of war in 1914 the work increased and grew more complicated. Each Commissioner became Provost Marshal in his own district. A large Turkish prisoners' camp was formed near Famagusta and a garrison installed. All leave became impossible, and as the heat of the plains during summer proved very trying, it soon became evident, in spite of a short rest under doctor's orders, that Mr. Baxendale's health was failing. He was transferred to Larnaca in 1918, and would have retired in August of the present year, but a severe attack of pneumonia on 6 February intervened, and on 19 February, 1919, he passed peacefully away.

He was twice married, first to Mara Adelaide, daughter of William Hammings of Fiji, and leaves two daughters by that marriage: secondly to Edith Mary, daughter of Arthur Fremlin of Teston, Kent, and leaves two daughters and a son by the second marriage.

During the last nine years of his stay in Cyprus, Mr. Baxendale devoted a good deal of attention to the breeding-habits and eggs of Cyprus birds. Amongst other acquisitions he was able to secure well authenticated nests of the Palestine Warbler (*Sylvia melanothorax*), of which hitherto only three clutches had been found, and was also enabled to prove satisfactorily, for the first time, the fact that several other species bred on the island, such as *Passer hispaniolensis*, *Emberiza hortulana*, *Hoplopterus spinosus*, and *Podiceps nigricollis*. Practically all his egg collection was most generously given by Mr. Baxendale to the writer, but the skin collection still remains in Mrs. Baxendale's hands, and it is hoped that it may find a worthy home in some National Institution.

All who came into contact with the big, good-hearted man will retain pleasant memories of a most kindly, companionable nature, with a real love for nature and a keen desire to

forward in every way the interests of science. Of such men we have too few, and his death leaves us with a sense of irreparable loss.

F. C. R. JOURDAIN.

We also regret to learn of the recent death of Mr. WILLIAM BREWSTER of Cambridge, Mass., U.S.A., a Founder of the American Ornithologists' Union and one of the best known of American ornithologists. We hope to have a notice of him in the next number of 'The Ibis.'

XXXIV.—*Notices of recent Ornithological Publications.*

An A. B. C. of Common Birds.

[An A. B. C. of Common Birds. A pocket guide to the commoner inland Birds of Britain. Pp. 1-64. Price 6d., by post 7d. Published by the Royal Society for the Protection of Birds, 23 Queen Anne's Gate, S.W.]

This little work in pamphlet form has recently been issued by the Royal Society for the Protection of Birds, and will doubtless be found very useful. The commoner British birds are arranged in alphabetical order, and with each is given a few words of description to assist in identification. The brief notes on the food-habits are arranged under "pro." or "con.", according to whether the birds may be regarded useful or injurious to the farmer or gardener. In many cases a quotation from a recognized authority on the relation of birds to agriculture has been added. Only in the case of three or four birds is the general verdict unfavourable, and in these cases it is owing to their excessive numbers. We notice that very little is said about the merits or otherwise of the Little Owl, on which there has lately been a good deal of correspondence in the 'Times.' The Starling, Sparrow-Hawk, Wood-Pigeon, and Hawfinch all come in for a certain amount of condemnation. On the whole a very just balance is maintained, and we hope that

the A. B. C. of Common Birds will have a wide circulation and help to the preservation of British Bird-life.

Bangs on a new bird from the Philippines.

[A new Striated Warbler from the Philippines. By Outram Bangs. Proc. New England Zoölogical Club, vii. 1919, pp. 5-6.]

In a short note Mr. Bangs distinguishes *Megalurus palustris forbesi*, subsp. n., from Luzon and probably the other islands of the Philippine group, from the typical *M. p. palustris* from Java, by its smaller size and greyer coloration.

Bangs and Penard on the Lafresnaye types.

[Some critical notes on birds. By Outram Bangs and Thomas E. Penard. Bull. Mus. Comp. Zool. lxiii. 1919, pp. 21-40.]

The Lafresnaye collection of birds, containing most of the types described by that ornithologist in the early part of the last century, has recently been handed over to the Museum of Comparative Zoology at Cambridge, Mass., by the Boston Society of Natural History. It is the intention of the authors to publish an account of the collection, its types, and a sketch of Lafresnaye's life; but in the meantime we have here a number of random notes, mostly changes in nomenclature and descriptions of new forms, noticed when identifying Lafresnaye's types.

We have not space here to mention the various changes proposed, but we notice new forms of *Herpetotheres*, *Eupsittula*, *Picolaptes*, *Saltator*, and many other genera chiefly from South America; a new genus *Cnemoscopus* is proposed for *Arremon rubrirostris* Lafres., and *Tachuris* Lafres. 1836 must replace *Cyanotis* Swains. 1837.

Campbell on Australian Birds and Nomenclature.

[Notes on Birds from the Gouldian-Gilbert Type-locality, North Australia. By A. J. Campbell. The Emu, xviii. 1919, pp. 172-210.]

The birds collected by McLennan for Mr. H. L. White

in the lands where Gilbert collected for Gould, having now come into the possession of the National Museum at Melbourne, the author of this paper—for long an authority on Australian Ornithology—takes the opportunity to institute a comparison with the species obtained by Gilbert and to comment on their nomenclature.

That collector's head-quarters were at the present Port Essington (then styled Victoria), whereas McLennan had his main camp eighty miles away at King River; but the character of the whole district is so uniform that it may all be considered as one collecting-ground, and is in fact almost precisely similar to that round Napier and Broome Bay in West Australia. It is therefore no matter for astonishment that some species or subspecies are identical in the two areas, while we are impressed with the necessity of taking more than usual care in differentiating forms on the grounds of slight variation in the colour.

The two explorers observed nearly the same birds, though McLennan added *Plilotis albilineatus* to the Australian list; and Mr. Campbell rightly considers this to be a fitting time to come to a primary agreement as to the nomenclature pending further expeditions and further discoveries.

He therefore discusses each bird separately, and in particular the races it has been proposed by Mr. Mathews and others to differentiate. We cannot here give in detail the cases where the two writers are in agreement and where they are not; but must satisfy ourselves with commending the whole article to the attention of our readers, in view of the lead that it gives to the proper determination of many points of importance with regard to a distant and partially worked country.

Two points remain to be noticed—first, that in some eight or more cases the Gouldian-Gilbert type-locality was not Port Essington, but “North-west Coast of Australia”; secondly, that Mr. Campbell once more emphasizes the importance of maintaining Gould's names if scientifically correct. This no doubt is much to be desired, and none of them should be thrown aside without most careful

examination; but we are afraid that ideas differ widely as to the meaning of the term "scientific correctness," and in proof can only refer to the speeches at the R.A.O.U. meeting ('The Emu,' xviii. pp. 144-147). Mr. Campbell also talks of the "International Code" and the views of various persons on it, but they evidently do not refer to the Ornithological Code.

E. C. Chubb on the Dodo.

[A skeleton of the Dodo (*Didus ineptus*). By E. C. Chubb. Annals Durban Museum, ii. 1919, pp. 97-99, pl. xvii.; 1 text-fig.]

[The Dodo. Leaflet No. 1. Durban Museum, pp. 1-4; 2 figs. 1919.]

The Durban Museum has recently acquired a very complete mounted skeleton of the Dodo. It was formerly in the possession of the late Mr. E. Therioux of Mauritius, and is of special interest as it possesses the caudal vertebræ and pygostyle complete, a rib on the second pelvic vertebra, and certain carpal bones in the wing not hitherto found on any existing skeleton or described.

Mr. E. C. Chubb writes a short description of these bones and illustrates his notice with a photograph which, however, is hardly sufficiently large or clear to be of much use.

The leaflet, also by Mr. Chubb, provides a short popular history of the Dodo, and contains a reproduction of one of Savery's pictures of the bird, and is prepared for the benefit of visitors to the Durban Museum.

Gladstone on the war and bird-life.

[Birds and the War. By Hugh S. Gladstone. London (Skeffington), 1919. 8vo.]

In this little volume Mr. Gladstone has brought together a mass of information relating—as the title tells us—to birds and the war. We learn from the preface that the book is compiled from "a large collection of cuttings," and although certain recognized authorities are quoted, yet the major part of the information here collated appeared anonymously in newspapers. As Mr. Gladstone has made such ample use of these anonymous writings, it seems a

pity that he has refrained from criticism of what appear occasionally to be highly coloured statements. The fact that "cuttings" from the 'Daily Mail' and other daily papers have been reprinted in book-form by a recognized ornithologist, gives more weight to them than many of them deserve.

Section one of the first chapter deals almost entirely with the Homing Pigeon Service during the war and will be read with considerable interest. The feats of endurance accomplished by these wonderful birds deserves wide recognition and admiration. Some of us cannot fail to deplore the loss to Great Britain of so many of our best strains of Homers by their disposal in France and Belgium at the end of the operations. Mention is made of the various uses—some ingenious, others very "far fetched"—to which birds were put to detect the presence of the enemy or of poison gas in the various theatres of war.

In the second section Mr. Gladstone has brought together an amount of evidence in support of our British Birds as crop-protectors, and shows how the indiscriminate destruction of many species valuable to agriculture resulted in a terrible scourge of caterpillars in various parts of the country.

In the third and fourth sections, the author gives us a review of the various measures introduced by the Ministry of Food to increase the food-supply, by utilising various wild birds' eggs and by alteration to an earlier date of the commencement of game-shooting seasons. There is a chapter on the sufferings of birds during the war—on land where the abnormally severe weather accounted for many deaths, and at sea where the oil from tank-steamers and submarines is said to have destroyed hundreds of sea birds, the oil matting the feathers of Razorbills and Guillemots, thus preventing them diving for food. A special section is devoted to the effect of aircraft and air-raids on the bird population.

In sections 8 and 9 the author deals with the behaviour of birds in the war zones, and in this chapter Mr. Gladstone

gives us an interesting and connected account of the observations of numerous field-naturalists made chiefly on the western front. The remarkable indifference of almost all the birds to heavy bombardment, and even to poison-gas, is the principal fact brought out in these chapters. In face of this, the statement made by a French naturalist (quoted in Chapter iv.) that migrating birds departed from their usual routes seems a little surprising. The birds in northern Europe could hardly have known what was taking place in the narrow strip of territory where the guns were booming and over which they were wont to pass on their journey south. If the migratory movement coincided with a terrific bombardment, the tendency of the birds would surely be to mount to a higher altitude as they approached the danger zone, and thus to cross the lines unobserved, probably at night. The reviewer passed 28 consecutive months on the lines of communication in France and Flanders, and allowing for his limited opportunities of bird-observation, he formed the opinion that ordinary migration was little interfered with.

In the last section of this little book, a tribute is paid to those ornithologists who gave their lives in the service of the country.

“Birds and the War” contains much interesting information which it must have cost the author considerable time and patience to compile and produce in such a readable form.

D. A. B.

Misses Haviland and Pitt on habits of the Song-Thrush.

[The selection of *Helix nemoralis* by the Song-Thrush (*Turdus musicus*). By Maud D. Haviland and Frances Pitt. Ann. Mag. N. H. (9) iii. 1919, pp. 525-531.]

The habit of the Song-Thrush of breaking the shells of snails on a stone or “anvil” is well known, and it had been suggested by Mr. A. E. Truman in a previous paper that in the case of the very variably coloured *Helix nemoralis*, Song-Thrushes might exercise a selective action as the more conspicuous or more palatable varieties would be most generally taken. Miss Haviland made two series of experiments—

in the one case tethering snails to pegs in a piece of open ground and listing those which were taken by the Thrushes, and in the other case counting and sorting the shells found at certain anvils, with the idea of discovering whether one particular variation of *Helix nemoralis* was preferred to another.

Miss Pitt's experiments were done with a young Thrush hand-reared from the nest, in order to find out if the "anvil-habit" was instinctive or acquired.

The conclusions were reached that the selection of snails by Thrushes is entirely haphazard, but that many-banded varieties of *H. nemoralis* were more abundant in shady bushy places while Thrushes preferred more open feeding-grounds, so that there was a higher proportion of unbanded shells at certain "anvils." Miss Pitt concluded that the young thrush does not recognize and crack snail-shells instinctively, but each individual learns to do so by personal experience.

Mathews' Birds of Australia.

[The Birds of Australia. By Gregory M. Mathews. Vol. vii. pt. v. pp. 385-500+i-xii, pls. 363-370. London (Witherby), July 1919. 4to.]

Possibly the most important information in this part will be, to most ornithologists, that contained in the two Appendices, one giving a list of works containing "all the new names," and the other consisting of a dissertation on the dates of a large number of ornithological treatises. So important are the items in the latter that, in our opinion, they are quite out of place in this book, and should have been published separately. As it is, they will probably be overlooked by those not specially concerned with Australian Birds, and the object of Mr. Mathews' careful compilation will thus not be attained. Otherwise we have nothing but praise for his perseverance and energy in the matter.

With regard to the preface to the volume, we quite agree that much controversial matter has been under discussion, but we are not so confident as the author that

nomenclature is tending to stability. He must not forget that Ornithology is but one branch of Zoology, and that no settlement will finally stand that is not pretty generally accepted.

Among the accounts of the different species, it should be noted that *Polophilus* is accepted instead of *Centropus* for the Australian Coucal. A new subspecies *melvillensis* is proposed (from Melville Island), and *macrourus* is taken to cover *keatsi*.

The volume finishes with the Lyre-Birds, equally wonderful in their appearance and habits. This curious Order is left in its usual place and precedes the Passeriform Birds; but it is only fair to Mr. Mathews to say that he dissents to this position, and thinks that the resemblances may be due to convergence, and not to affinity. To those who take this view, the difficulty at once arises of explaining the bird's powers of song. *Atrichia*, of course, presents difficulties also, but is, in this work, to be taken later, as a degenerate Passerine form.

A separate genus is allotted to each species of *Menura*, for the specific title *novæ-hollandiæ* is made to cover three subspecies from New South Wales and Victoria, so that only the northernmost form *alberti* stands apart, in the genus *Harriwhitea* of Mr. Mathews' 1912 List. The male has no long curved outer rectrix, as may be seen from the plate given, another plate shewing the tails in the genus *Menura*. A subspecies *rufa* is still recognised.

Globicera pacifica queenslandica and *Psephotellus chrysopterygius nova* are now figured as new and extremely rare forms from northern Queensland, and several notes added. In these *Taristockia* is proposed for *Loxia guttata* Shaw; but here the details must be consulted by the reader interested in *Steganopleura* forms.

Finally, three more Procellariiform birds, *Reinholdia reinholdi*, *Pterodroma inexpectata*, and *Diomedea chionoptera*, are figured, with information from sources later than the publication of Vol. ii.,—the first because the specimen

depicted in that volume was from New Zealand, whereas that now given was shot in Australia. Mr. Mathews takes the opportunity to criticise severely the recent work of the American author Loomis on the Order, and his paragraphs will enable other writers to judge for themselves between the combatants and of the correctness or otherwise of their views, a point which it is not for us to decide. Mr. Murphy's work is held up as a contrast and for approval.

Riley on new birds from the Far East.

[Six new birds from Celebes and Java. By J. H. Riley. Proc. Biol. Soc. Washington, vol. 32, 1919, pp. 93-96.]

In a collection of birds made in Celebes by Mr. H. C. Raven, Mr. Riley finds the following new forms:—*Anas superciliosa perena*, *Megalurus celebensis*, *Dicruropsis montana*, *Pachycephala pluviosa*, *Zosterops atrifrons surda*; also a Quail from Java is named *Excalfactoria chinensis palmeri*.

Stone on the Birds of Panama.

[Birds of the Panama Canal Zone, with special reference to a collection made by Mr. Lindsey L. Jewel. By Witmer Stone. Proc. Acad. Nat. Sci. Philadelphia, 1918, pp. 239-280.]

The late Mr. L. L. Jewel spent some three years from 1910 onwards in the Panama Canal zone, where he was engaged in engineering work, and made very considerable collections of birds; part of these are now in the American Museum at New York, but the greater portion are in the Museum of the Academy at Philadelphia. Mr. W. Stone has prepared a list of the Jewel collection, which is here published with the collector's field-notes, and has added the names of the other species previously recorded from the canal-zone, but not obtained by Mr. Jewel.

In a good many instances the nests and eggs are described by Mr. Jewel, and there are some additional taxonomic notes by Mr. Stone, but no new forms are described.

The total number of species and subspecies listed reaches 432.

Kirke Swann on the Birds of Prey.

[A synoptical list of the Accipitres (Diurnal Birds of Prey). Part I. (*Surcorhampus* to *Accipiter*). Comprising species and subspecies described up to 1914, with their characters and distribution. By H. Kirke Swann, F.Z.S. Pp. 1-38. London (Wheldon), 1919. 8vo.]

So far as we are aware no complete revision of the Accipitres has been attempted since the publication in 1874 of the first volume of the 'Catalogue of Birds' by Dr. Bowdler Sharpe. A vast amount of additional information on the subject of the Birds of Prey is to be found in the long series of critical papers on Dr. Sharpe's volume by the late Mr. John Henry Gurney, published in the volumes of 'The Ibis' between 1875 and 1882; and in his Hand-list published in 1899 Dr. Sharpe brought the list up to date by incorporating the recently described species. There is therefore ample excuse for the publication of this little work by Mr. Swann.

As regards classification the Hand-list is followed, and the present instalment contains the Condors, the Old World Vultures, the Polyborinæ, and the Accipitrinæ. Short diagnostic characters are given, but we fear they will not be found sufficient to identify unknown forms of Hawks, so varied and complicated are the plumage-changes in this group.

It is to be regretted too that Mr. Swann has not given full references to the genera and a determination of the types, which is so necessary for successful systematic work.

Mr. Swann has rightly, under the rules of nomenclature, discarded the use of the generic name *Vultur* for the Cinereous Vulture in favour of *Ægyptius*; but surely it is impossible to ignore the use of the former name altogether, and there can be no doubt that, if the rules be adhered to, the genus *Vultur* must go to the South American Condor. The alternative is either to keep *Vultur* for the Old World species to which it has been traditionally attached as a *nomen conservandum*, or boldly follow the rules and transfer it to the Condor. Again, the genus *Catharista* is undoubtedly an absolute synonym of *Cathartes*, as both are

founded on the same type. *Catharista* as used by Sharpe and our author should be replaced by *Coragyps*.

There are several other errors in generic nomenclature which we could point out:—*Pseudogryphus* Ridgw. 1874 is antedated by *Gymnogyps* Lesson 1842; *Serpentarius* Cuv. 1798 by *Sagittarius* Herman 1783; *Polyborides* Smith by *Gymnogenys* Lesson; *Torgos* Kaup is spelt *Jorgos*.

The list of described species appears to have been most carefully compiled and will doubtless be most useful to all workers in systematic ornithology, and we shall look forward with interest to see the completion of the work.

British Birds.

[British Birds, with which is incorporated 'The Zoologist.' Vol. xii. June 1918–May 1919.]

Owing to the absence of Mr. Witherby at Dunkerque, where he was serving with the naval forces during the latter part of the year, the last volume of 'British Birds' was edited by Mr. Jourdain. It contains many contributions of permanent value, among which should be noted the four concluding parts of Miss Jackson's "Moult and sequence of plumages of the British Waders"; our only regret is that Miss Jackson has not extended her observations beyond the narrow limits of the British list, as it is only by doing so that valuable general conclusions can be reached.

A novel observation by Mr. D. Macintyre is that the Curlew when shedding the lining of the gizzard also gets rid of the grit contained in it at the same time. Other birds get rid of the gizzard grit periodically in their castings or their droppings, and there seems a good deal of variation in this respect.

The chief nesting-place of the Great Skua in the British Isles has long been known to be on certain islands of the Shetland group. Through the observations of some naval officers attached to the Grand Fleet, the known breeding-range of this interesting bird has now been extended to a locality in the Orkneys as well. Mr. Jourdain, who writes on the matter from information transmitted to him, wisely

exercises a good deal of reticence in exact locality and other matters.

Of illustrated articles we have a further instalment of Mr. J. H. Owen's beautiful photographs of the Sparrow-Hawk and its nest and young, accompanied by some good field observations; also some notes on the nidification of the Bullfinch by Miss F. Pitt, illustrated by three reproductions of her excellent photographs.

Of articles connected with the various battle fronts, there are those of Surgeon J. M. Harrison, R.N., on Macedonia; of Miss Haviland on autumn migration near Odessa; of Mr. E. A. Wallis on birds observed in the Yonne department in France, where he specially comments on the abundance of small birds such as Warblers but the comparative rarity of Thrushes and Blackbirds, while the Little Bustard was found to be surprisingly tame and approachable.

There are also articles by Capt. A. de C. Sowerby on the Birds of the Battlefields, and by Capt. W. S. Medlicott on those of the western front of the Pas de Calais department. Finally, we have the observations of Mr. Witherby himself in the neighbourhood of Dunkerque — a somewhat disappointing locality, though the Little Ringed and Kentish Plovers were both found nesting on the same ground close to the town.

Of marked-bird recoveries the most interesting are the following:—Wigeon marked Alnwick Aug. 1915, reported Denmark autumn 1917; Lapwing marked Warwickshire June 1911, reported S. Spain Jan. 1918; Lesser Black-backed Gull marked Westmoreland June 1913, reported Portugal Jan. 1918.

Canadian Field-Naturalist.

[The Canadian Field-Naturalist. Published by the Ottawa Field-Naturalists' Club. Vol. xxxiii. no. 1. April 1919.]

We welcome the first number of an old journal under a new name. The 'Ottawa Naturalist' first appeared in 1884 and had reached its thirty-second volume. The name has

now been changed to the 'Canadian Field-Naturalist' to reflect its widened sphere of influence. It will in future be accepted not only as the organ of the Ottawa Society but of other similar natural history societies throughout the Dominion of Canada.

The present number contains some account of the birds observed in the northern part of Lake Winnipeg in Manitoba by Prof. O'Donoghue and Mr. J. N. Gowanlock. Here on a small island was found a breeding colony of Caspian Terns, and an example of the Parasitic Jaeger (or as it is generally called in England, Richardson's Skua) was secured. Both these birds were previously unknown in Manitoba.

Mr. P. A. Taverner concludes his account of the birds of Shoal Lake, Manitoba, where 211 species in all have been observed. There are also other articles of interest in other departments of Natural History contained in the present number.

The Emu.

[The Emu. Official organ of the Royal Australasian Ornithologists' Union. Vol. xviii. pts. 1-4. July 1918-April 1919.]

The last volume of the 'Emu' shows the continued prosperity of the R. A. O. U., consisting as it does of over 300 pages and fifty plates, four of which are coloured. These, which are reproduced from colour-photographs, represent *Erythrura trichoa macgillivrayi* recently described from northern Queensland; *Amytornis striata* Gould, of which a good many subspecies have been recognized by Mr. Mathews, but which Mr. Campbell, who writes the accompanying letterpress, proposes to reduce to two. In the third part the frontispiece is a coloured plate of the Letter-winged Kite (*Elanus scriptus*), of which Mr. H. L. White has recently secured a good series of skins and eggs for the "H. L. White" collection in the National Museum at Melbourne. The birds were found nesting on the Diamantina river in a remote district of the interior of Queensland, and Mr. Jackson,

who was sent by Mr. White to obtain the eggs and skins, made a most successful expedition to this out-of-the-way spot by motor-car and gives an interesting account of his own adventures and of the habits of the Kites, which nest in small companies in Eucalyptus trees bordering the creeks.

Dr. Shufeldt contributes a long account, illustrated by seven plates from photographs taken by himself, of the osteology of *Nestor*, the Kea Parrot of New Zealand. He is of opinion from his studies of the skeleton, that the creation of a special family, *Nestoridae*, for this peculiar type is well justified by osteological characters as well as by the structure of the soft parts, which have chiefly been relied on by former investigators.

Mr. W. B. Alexander and Dr. B. Nicholls have carefully gone into the subject of the racial forms of the Little Penguin (*Eudyptula minor*) in Australia. Mr. Mathews and others have recognized three of these races. An examination of a large series of birds of different ages and stages of plumage from different localities bring the authors to the conclusion that there is only one Australian race, which should be called *Eudyptula minor novæhollandiæ*.

In an article by Mr. G. M. Mathews it is pointed out that a considerable number of the Petrels included by him in his 'Birds of Australia' are so recorded on insufficient evidence, often resting on vague statements by Gould or sometimes on wrongly identified material, or material of doubtful origin. A list of these cases is given in the hope that more attention will be paid to this group by Australian observers.

Of new forms described we only notice three—*Hylacola pyrrhopygia magna* Howe from the interior of New South Wales, *Malurus cyanotus diamantina* H. L. White from western Queensland, and *Acanthiza nana dawsoniana* H. L. White from central Queensland.

Field-notes and lists of species observed in all parts of Australia are numerous: among them, Miss Fletcher writes on Tasmania, Capt. S. A. White on the Murray river and on the Nullabor plains of South Australia, Mr. J. B. Clelland

on Pilliga Scrub in New South Wales, and Mr. F. L. Whitlock on the birds of the Dampier archipelago on the north-west coast of Western Australia.

Mr. A. J. Campbell's contributions to the present volume are noticed separately.

Le Gerfaut.

[Le Gerfaut. Revue belge d'Ornithologie. Publiée sous la direction de M. Marcel de Coutreras. Bruxelles. 5^e-9^e Années. Fasc. i. et ii. 1919.]

'Le Gerfaut' (the Gyrfalcon) was established in Belgium about three years before the outbreak of the war and was published as the official organ of several ornithological societies then existing in Belgium. A notice of it appeared in 'The Ibis' for 1914 (p. 345). Under the German occupation it ceased publication. It has now been revived under its former editor, M. Marcel de Coutreras, though it no longer has any official connection with the Belgian ornithological societies. Two numbers have already appeared, and we must congratulate the editor and his supporters on their enterprise and devotion to our favourite study.

The first number opens with a notice of M. A. Sacré, to whom Belgium owes a great debt for his promotion of ornithology. He died in July 1917 at Brussels at the age of 60, and was the practical founder of 'Le Gerfaut.' His collections of nests and eggs of Belgian birds have been added to the Royal Museum of Natural History in Brussels.

An article by M. G. van Havre deals with *Buteo buteo zimmermannæ*, an example of which was taken at Wyneghem near Bruges so long ago as 1861 by the father of the present author, but has only recently been recognized as referable to this recently described form. Two examples were also obtained at Delden in Holland in 1902 and 1903, and are in the collection of Baron Snouckaert van Schauburg. The status of the Buzzards of Europe and their inter-relationship do not appear to be yet by any means satisfactorily settled, and we believe that more material must be studied before any final decision can be arrived at.

Another remarkable bird described and figured in a coloured plate in the second number of the magazine is a Gull, obtained some years ago by M. F. Massange on the Belgian coast near Blankenberghe. It is identified by M. de Contreras as an example of *Larus fuliginosus* Gould, a species believed to be confined to the Galapagos Islands and never, so far as we are aware, noticed in the Atlantic or in the Old World. This specimen is now preserved in the Brussels Museum, and we believe that a "second opinion" on the identification should be taken before finally accepting the occurrence of a species in Europe so far removed from its known habitat.

Other articles in the second number by M. G. van Havre deal with the occurrence of the Black-bellied Dipper (*Cinclus c. cinclus*) in Belgium, and of a review of events of ornithological interest in Belgium during the five years of war, and of the effects of the war and the German occupation on bird-life.

South Australian Ornithologist.

[The South Australian Ornithologist. A Magazine of Ornithology. Vol. iii. for 1917 & 1918 ; 8 parts.]

The ornithologists of South Australia continue the quarterly issue of their magazine with great regularity. It is chiefly concerned with observations and field-notes on the birds of South Australia, and is therefore mainly of local interest.

The excellent plan of giving in each number a full description, with an account of habits and distribution, of a single selected member of the South Australian avifauna is continued, but it will we fear take a good many years before the series is complete. Capt. S. A. White continues his account of the life of his father Mr. Samuel White, a pioneer of ornithological exploration in many parts of Australia and Papuasias, the friend and correspondent of Gould. Mr. White died at Sydney in 1880, soon after his return from an adventurous voyage to the Arru Islands in search of the Greater Bird of Paradise, and the chapters

in the present volume deal with this particular journey. Another article of general interest is edited by Mr. G. M. Mathews from the field-notes of Capt. Bowyer-Bower, who collected on the Fitzroy river in north-western Australia in the eighties and died at Port Darwin in 1887. Most of his collections were presented to the British Museum by his father.

Another article by Mr. A. M. Morgan, one of the editors, deals with birds of the river Murray and of Port Broughton on Spencer gulf; while Capt. White writes on an expedition he recently made to the Coorong, a curious long narrow lagoon shut off from the sea by a narrow sand dune, in search of the Bristle-bird (*Maccoyornis broadbenti whitei*), recently described by Mr. Mathews, of which he obtained six examples. Another trip to the same place was made by Capt. White to inspect the breeding-grounds of the Swan and the Pelican, which are now, thanks to the efforts of the South Australian Ornithological Association, protected from destruction, and where there is now a government caretaker in charge.

List of other Ornithological Publications received.

- DABBENE, R. Las especies y subespecies Argentinas de los géneros, *Geositta* y *Cinclodes*. (An. Mus. Nac. Buenos Aires, xxx. p. 113.)
- KURODA, N. On the Migration of some Waders, etc. (Japanese.) 1919.
- Archivum Melitense. (Vol. iii. nos. 8-12.)
- Auk. (Vol. xxxvi. no. 3.)
- Avicultural Magazine. (Vol. x. nos. 9-11.)
- Bird-Lore. (Vol. xxi. nos. 3-4.)
- Bird-Notes. (Vol. ii. nos. 5-8.)
- British Birds. (Vol. xiii. nos. 2-4.)
- Condor. (Vol. xxi. nos. 3-4), and Index to vols. xi.-xx.
- Journal of the Bombay Natural History Society. (Vol. xxvi. no. 2.)
- Journal of the Fed. Malay States Museums. (Vol. viii. pt. iii.)
- Revue Française d'Ornithologie. (Nos. 121-123.)
- Scottish Naturalist. (Nos. 91-92.)
- South Australian Ornithologist. (Vol. iv. nos. 1-2.)
- Tori, Bull. Orn. Soc. Japan. (Vol. ii. no. 8.)

XXXV.—*Letters, Extracts, and Notes.*

South African Hawk-Eagles.

SIR,—In my article on *Hieraaëtus ayresi* in 'The Ibis' for April of the present year, I mentioned a specimen in the Durban Museum which I believed, from the description furnished me by the Director, to be referable to this species. I have now, through the kindness of the Director of the Durban Museum, had an opportunity of examining this specimen and, as I expected, it proves to be a fine adult, and is very similar in general colour to the specimen described and figured in my paper, but is rather more heavily marked with black below; the tarsi are, however, very slightly streaked, almost immaculate in fact. There is a small white frontal spot as is often seen in *H. pennatus*; and many new feathers are appearing on the scapulars and wing-coverts, all of which are tipped with white. As I suspected, an error had been made in measuring the wing, which proves to be barely six inches in length, and not $17\frac{3}{4}$ inches as stated in my notes.

I am,

Yours faithfully,

Roberts Heights,
Pretoria.
18 June, 1919.

C. G. FINCH-DAVIES, Lt.
(1st S.A.M.R.).

The Number of Eggs laid by the Blackbird in Spain.

SIR,—In Lieut.-Colonel R. Meinertzhagen's paper on Geographical Distribution and Migration (*antea*, p. 389), reference is made to the question whether the same species, when nesting in tropical countries, lays fewer eggs in the clutch and rears more broods in the season than the same bird in more northern climes. In support of this he quotes Mr. A. Chapman, who states ('Wild Spain,' p. 249) that in Spain the Blackbird as a rule lays but three eggs. A similar

but stronger statement is made by Colonel Verner ('My Life among the Wild Birds,' etc., p. 159): "Curiously enough they never seem to lay more than three eggs in place of the four or five usually found in nests in England. I mention this because I have never seen or heard of a nest with more than three eggs."

The first nest found by me in southern Spain (April 30, 1905) contained four eggs; the second, on May 1, had five nearly fledged young. In 1906 Mr. R. H. Read and I found nests with four eggs on at least two occasions, and in 1907 I have a note of a nest with four eggs. During a visit in the present year to south Spain with Messrs. Lings, Tomkinson, and Peters, we kept careful notes of the contents of nests found, with the following result: Blackbirds' nests found twelve: one with five eggs, five with four eggs, while the remaining six contained either one or two eggs, and were probably incomplete.

The evidence quoted by Lieut.-Col. Meinertzhagen in this case is quite inconclusive, but there are undoubtedly certain species (such as the Wheatear) which lay larger clutches in the high north than with us; while on the other hand the Red-backed Shrike lays on an average more eggs in Corsica than in England.

Favier's statement that the Blackbird breeds three times in the year near Tangier is also inconclusive, as the same thing frequently occurs in the British Isles.

Yours truly,

F. C. R. JOURDAIN.

Appleton Rectory,
Abingdon, Berkshire.
16 July, 1919.

B. O. U. Godman-Salvin Medal Fund.

Subscriptions amounting to £180 5s. 3d. have now been received from Members of the Union towards the proposed Godman-Salvin medal fund, and the Committee are taking active steps to obtain sketches and designs from which to select the most suitable for reproduction.

The following is a complete list of subscribers, 105 in number :—

E. E. Adams.	Capt. S. St. J. Farquhar,	H. Munt.
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Godman Memorial Fund.

Members may remember that at the Annual Meeting of the Union last March it was unanimously resolved not only that the Union should establish a medal to be called the Godman-Salvin medal, but that it should also take part in

the more general scheme which should take the form of a visible memorial to be placed in the Natural History Museum.

To carry this out an influential committee has been formed under the chairmanship of Lord Rothschild and of which, as the representative of the Union, Mr. E. C. Stuart Baker is a member.

With this number of 'The Ibis' is enclosed a leaflet with the complete list of the Committee, an explanation of their proposed plans, and an appeal for subscriptions to carry out the purpose for which they were appointed.

The Hon. Treasurer of the Committee, Mr. C. E. Fagan, I.S.O., Natural History Museum, Cromwell Road, London, S.W. 7, will be very glad to receive contributions from any member of the Union.

International Ornithological Congress.

We hear that American ornithologists are hoping to arrange to hold an International Ornithological Congress in America, probably at New York, in 1921. Up to now five of these international gatherings have been held, at Vienna in 1884, at Budapest in 1891, at Paris in 1900, at London in 1905 under the Presidentship of the late Dr. R. Bowdler Sharpe, and at Berlin in 1910 under Dr. Reichenow. The meeting for 1915 was to have been held at Sarajevo in Bosnia, and of course did not take place. We hope a good representative body of British ornithologists will be able to attend the meeting in 1921.

The Editor of 'The Ibis.'

The Editor of 'The Ibis' has left England for America and will be absent for about six months. During this time Mr. A. H. Evans (9 Harvey Road, Cambridge), who for so many years was associated with the late Dr. P. L. Sclater as joint-editor, has most kindly consented to act as temporary editor. All communications usually addressed to Mr. Sclater should therefore be sent to Mr. Evans at the address given above.

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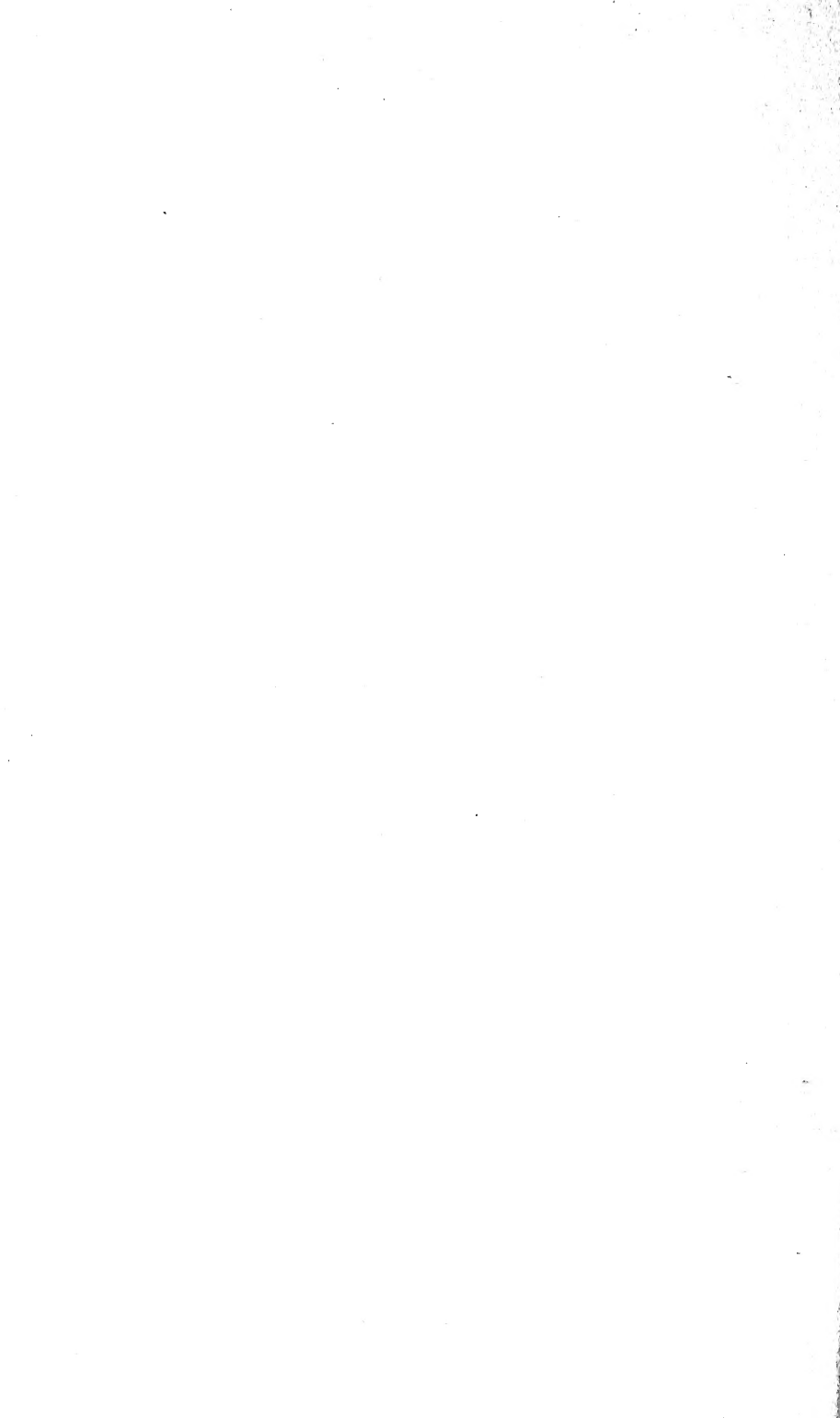
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Communications intended for publication in 'The Ibis' should be addressed to the **Editor**, 10 Sloane Court, Chelsea, S.W. 1 [during the next six months to the **Acting-Editor** (Mr. A. H. EVANS), 9 Harvey Road, Cambridge].

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