

2571

BULLETIN
OF THE
**BRITISH
ORNITHOLOGISTS' CLUB**



EDITED BY

CAPTAIN C. H. B. GRANT

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PREFACE

TWELVE Meetings were held during the Session 1948-49. The extra three Meetings were necessitated by the Session being changed from October-June to January-December.

The Annual General Meeting took place on Wednesday, 20th October, 1948, at the Rembrandt Hotel, South Kensington, and was attended by 21 Members.

The number of attendances for the Session was as follows:— Members of the Club 311, Guests of the Club 5, Other Guests 67, a total of 383.

The Guests of the Club were Mr. C. A. Fleming, Mr. E. H. Gillham, Mr. & Mrs. Haglund and Dr. T. H. Work.

C. H. B. GRANT.

London, December, 1949.

COMMITTEE, 1948-49.

- Dr. J. M. HARRISON, *Chairman* (elected 1946).
Colonel R. MEINERTZHAGEN, *Vice-Chairman* (elected 1948).
Major A. G. L. SLADEN, *Vice Chairman* (elected 1948).
Captain C. H. B. GRANT, *Editor* (elected 1947).
Mr. W. E. GLEGG, *Hon. Secretary* (elected 1947).
Miss E. P. LEACH, *Hon. Treasurer* (elected 1942).
Mr. J. D. MACDONALD (elected 1946).
Mr. P. A. D. HOLLOM (elected 1947).
Mr. C. T. DALGETY (elected 1948).
Lieut-Commdr. C. P. STAPLES (elected 1948).

**OFFICERS OF THE BRITISH ORNITHOLOGISTS' CLUB,
PAST AND PRESENT.**

Chairmen.

P. L. SCLATER, F.R.S.	1892–1913.
Lord ROTHSCHILD, F.R.S.	1913–1918.
W. L. SCLATER.	1918–1924.
H. F. WITHERBY.	1924–1927.
Dr. P. R. LOWE.	1927–1930.
Major S. S. FLOWER.	1930–1932.
D. A. BANNERMAN.	1932–1935.
G. M. MATHEWS.	1935–1938.
Dr. A. LANDSBOROUGH THOMSON.	1938–1943.
D. SETH-SMITH.	1943–1946.
Dr. J. M. HARRISON.	1946–

Vice-Chairmen.

Lord ROTHSCHILD, F.R.S.	1930–1931.
W. L. SCLATER.	1931–1932.
H. F. WITHERBY.	1932–1933.
G. M. MATHEWS.	1933–1934.
N. B. KINNEAR.	1934–1935.
H. WHISTLER.	1935–1936.
D. SETH-SMITH.	1936–1937.
Col. R. SPARROW.	1937–1938.
Dr. G. CARMICHAEL LOW.	1938–1939.
Hon. GUY CHARTERIS.	1938–1939.
W. L. SCLATER.	1939–1940.
Dr. D. A. BANNERMAN.	1939–1940.
Captain C. H. B. GRANT.	1940–1943.
B. W. TUCKER.	1940–1943.
F. J. F. BARRINGTON.	1943–1945.
Dr. E. HOPKINSON.	1943–1945.
C. W. MACKWORTH-PRAED.	1945–1946.
Dr. J. M. HARRISON.	1945–1946.
Lt.-Col. W. P. C. TENISON.	1947–1948.
Sir PHILIP MANSON-BAHR.	1946–1947.
B. G. HARRISON.	1946–1947.
Miss E. M. GODMAN.	1947–1948.
Col. R. MEINERTZHAGEN	1948–
Major A. G. L. SLADEN	1948–

Editors.

R. BOWDLER SHARPE.	1892-1904.
W. R. OGILVIE-GRANT.	1904-1914.
D. A. BANNERMAN.	1914-1915.
D. SETH-SMITH.	1915-1920.
Dr. P. R. LOWE.	1920-1925.
N. B. KINNEAR.	1925-1930.
Dr. G. CARMICHAEL LOW.	1930-1935.
Captain C. H. B. GRANT.	1935-1940.
Dr. G. CARMICHAEL LOW.	1940-1945.
Lt.-Col. W. P. C. TENISON.	1945-1947.
Captain C. H. B. GRANT.	1947-

Honorary Secretaries and Treasurers.

HOWARD SAUNDERS.	1892-1899.
W. E. DE WINTON.	1899-1904.
H. F. WITHERBY.	1904-1914.
Dr. P. R. LOWE.	1914-1915.
C. G. TALBOT-PONSONBY.	1915-1918.
D. A. BANNERMAN.	1918-1919.
Dr. PHILIP GOSSE.	1919-1920.
J. L. BONHOTE.	1920-1922.
C. W. MACKWORTH-PRAED.	1922-1923.
Dr. G. CARMICHAEL LOW.	1923-1929.
C. W. MACKWORTH-PRAED.	1929-1935.

Honorary Secretaries.

Dr. A. LANDSEBOROUGH THOMSON.	1935-1938.
C. R. STONOR.	1938-1940.
N. B. KINNEAR.	1940-1943.
Dr. G. CARMICHAEL LOW.	1943-1945.
Lt.-Col. W. P. C. TENISON.	1945-1947.
Captain C. H. B. GRANT.	1947.
W. E. GLEGG.	1947-

Honorary Treasurers.

C. W. MACKWORTH-PRAED.	1935-1936.
Major A. G. L. SLADEN.	1936-1942.
Miss E. P. LEACH.	1942-

LIST OF MEMBERS.

DECEMBER, 1949.

1930. ACLAND, Miss C. M.; Grassholm, 2 Orchard Close, Banstead, Surrey.
1912. ALEXANDER, H. G.; 144 Oak Tree Lane, Selly Oak, Birmingham.
1949. ALLISON, S.; 58 Alfreton Road, Nottingham.
1949. BAK, F. A.; 46 Holmfield Road, Leicester.
1948. BAND, R. M.; 516 North Drive, Cleveleys, near Blackpool, Lancashire.
1910. BANNERMAN, DAVID A., M.B.E., M.A., ScD., F.R.S.E., H.F.A.O.U. (*Editor*, 1914–1915; *Hon. Secretary*, 1918–1919; *Hon. Treasurer*, 1918–1919; *Committee*, 1922–1925; *Chairman*, 1932–1935; *Vice-Chairman*, 1939–1940); British Museum (Natural History), Cromwell Road, London, S.W.7.
1933. BARCLAY-SMITH, Miss PHYLLIS (*Committee*, 1941–1944); 51 Warwick Avenue, London, W.9.
1935. BARNES, Mrs. E.; Hungerdown, Seagry, Chippenham, Wiltshire.
1925. BARRINGTON, FREDERICK J. F., M.S., F.R.C.S. (*Committee*, 1929–1932; *Vice-Chairman*, 1943–1945); 52 Harley Street, London, W.1.
1947. BEAL, Major N. A. G. H.; 38 Kensington Park Road, London, W.11.
1948. BELCHER, Sir CHARLES F., K.B.E.; Kinangop, Kenya Colony.
1939. BENSON, C. W.; c/o Secretariat, Zomba, Nyasaland.
1947. BENSON, J. P.; Dept. of Agriculture, Meru, Kenya Colony and Dellfield, Hemel Hempstead, Herts.
1939. BENSON, C. W.; c/o Secretariat, Zomba, Nyasaland.
1922. BEST, Miss M. G. S.; White Cottage, The Drive, Bosham, Sussex.
1949. BEVEN, Dr. G.; Cromer Hyde, Central Road, Morden, Surrey.
1948. BLAIR, H. M. S., M.B., B.Sc.; Thorney House, Laygate, South Shields, Durham.
1906. BOORMAN, S.; Heath Farm, Send, Woking, Surrey.
1920. BOYD, A. W., M.C.; Frandley House, near Northwich, Cheshire.
1924. BROWN, GEORGE; Combe Manor, Hungerford, Berkshire.
1948. BRYSON, A. G. S.; 20 Inverleith Place, Edinburgh, 4, Scotland.

1948. BUSHELL, DOUGLAS; Willow Cottage, Frimley Road, Camberley, Surrey.
1949. BUTTON, E. L.; Boma, Lundazi, Northern Rhodesia.
1911. BUXTON, Major ANTHONY, D.S.O., D.L.; Horsey Hall, near Great Yarmouth, Norfolk.
1948. CAMPBELL, BRUCE; Hordley, Woodstock, Oxford.
1936. CAMPBELL, Dr. JAMES W.; Ardrennich, Strathtay, Perthshire.
1949. CARR, LEONARD; 275 Ringinglow Road, Sheffield, 11.
1949. CARTER, Mrs. FLORENCE E.; Allerton, Kings Hill, Bude, Cornwall.
1937. CAVE, Colonel F. O.; Stoner Hill, Petersfield, Hampshire.
1947. CHADWYCK-HEALEY, Mrs. G. M.; New Place, Porlock, Minehead, Somerset.
1937. CHAPIN, Dr. JAMES P.; American Museum of Natural History, Central Park West at 79th Street, New York, N.Y., U.S.A.
1923. CHARTERIS, Hon. G. L.; Old House, Didbrook, nr. Cheltenham, Gloucestershire.
1940. CHISLETT, RALPH; Brookside, Masham, near Ripon, Yorkshire.
1939. CLANCEY, P. A.; 9 Craig Road, Cathcart, Glasgow, S.4, Scotland.
1916. CLARKE, JOHN P. STEPHENSON; Broadhurst Manor, Horsted Keynes, Sussex.
1946. COHEN, E.; Hazelhurst, Sway, Hampshire.
1948. COLLINS, S. J. K.; P.O., Box 570, Nairobi, Kenya Colony.
1949. COOMBES, R. A. H.; Sea Bank, Bolton-le-Sands, Carnforth, Lancashire.
1933. CONOVER, H. B.; 6 Scott Street, Chicago, Illinois, U.S.A.
1927. CUNNINGHAM, Captain JOSIAS; 3 Donegall Square East, Belfast, Ireland.
1946. DALGETY, C. T.; Lockerley Hall, Romsey, Hampshire.
1948. DE HAMEL, F. A.; Holly Cottage, The Warren, Cranleigh, Surrey.
1920. DELACOUR, JEAN; The American Museum of Natural History, Central Park West at 79th Street, New York, N.Y., U.S.A.
1922. DEWHURST, Colonel F. W.; Delamore, Cornwood, Ivybridge, Devonshire.
1946. DONALDSON, R. PRESTON; c/o Royal Society for Protection of Birds, 82 Victoria Street, London, S.W.1.
1943. DUFFIN, CHARLES J.; The Cottage, Lyncroft Gardens, Ewell, Surrey.

1928. DUNCAN, ARTHUR BRYCE; Lannhall, Tynron, Dumfriesshire.
1917. EZRA, A., O.B.E. (*Committee*, 1933–1936); Foxwarren Park, Cobham, Surrey.
1949. FERGUSON-LEES, J.; 5 Nymans Cottages, Staplefield Road, Handcross, Sussex.
1927. FERRIER, Miss J. M.; Blakeney Downs, Blakeney, Norfolk.
1937. FISHER, JAMES (*Committee*, 1942–1946); The Old Rectory, Ashton, Northamptonshire.
1944. FITTER, R. S. R., B.Sc., F.Z.S.; Greyhounds, Burford, Oxfordshire.
1929. FOULKES-ROBERTS, Captain P. R., M.C.; Lamb Hill, Bride, near Ramsey, Isle of Man.
1934. GILBERT, Captain H. A.; Bishopstone, near Hereford, Herefordshire.
1928. GLEGG, W. E. (*Committee*, 1947–1948; *Hon. Secretary*, 1947–); c/o Zoological Museum, Tring, Hertfordshire.
1930. GLENISTER, A. G.; The Barn House, East Blachington, Seaford, Sussex.
1946. GODMAN, Miss C. E.; South Lodge, Horsham, Sussex.
1933. GODMAN, Miss Eva M. (*Vice-Chairman*, 1947–1948); South Lodge, Horsham, Sussex.
1912. GRANT, Captain C. H. B. (*Committee*, 1944–1947; *Editor*, 1935–1940 and 1947– ; *Vice-Chairman*, 1940–1943; *Acting Hon. Secretary*, 1947); 8 Cornwall Gardens Court, 50 Cornwall Gardens, London, S.W.7.
1947. GUDMUNDSSON, Dr. F.; Museum of Natural History, Reykjavik, Iceland.
1949. HALL, Mrs. B. P.; 10 Downside, Epsom, Surrey.
1928. HARRISON, BERNARD GUY (*Committee*, 1940–1944, *Vice-Chairman*, 1946–1947); 45 St. Martin's Lane, London, W.C.2.
1922. HARRISON, JAMES M., D.S.C., M.R.C.S., L.R.C.P. (*Committee*, 1933–1936; *Vice-Chairman*, 1945–1946; *Chairman*, 1946–); Bowerwood House, St. Botolph's Road, Sevenoaks, Kent.
1944. HARRISON, Dr. JEFFERY G.; Bowerwood House, St. Botolph's Road, Sevenoaks, Kent.
1947. HARTLEY, P. H. T.; Wray Castle Cottage, Ambleside, Westmorland.
1947. HAVERSCHMIDT, F.; 14 Waterkant, Paramaribo, Dutch Guiana.
1927. HEATH, R. E.; 2 Pembroke Court, Edwardes Square, London, W.8.

1934. HOLLOW, P. A. D. (*Committee*, 1938–1940 and 1947–);
Manor Cottage, Park Road, Woking, Surrey.
1946. HOMES, R. C.; 62d Albemarle Road, Beckenham, Kent.
1925. HOPKINSON, EMILIUS, C.M.G., D.S.O., M.B. (*Vice-Chairman*, 1943–1945); Wynst怠, Balcombe, Sussex.
1947. HUNT, G. H.; White Chimneys, Cheveney Road, Quorn Loughborough, Leicestershire.
1928. HUTSON, Major-General H. P. W., C.B., M.C., Forestry Commission, 25 Saville Row, London, W.1.
1921. INGLIS, C. McFARLANE; Kenilworth, Coonoor P.O., Nilgiris, India.
1902. INGRAM, Captain COLLINGWOOD; The Grange, Benenden, Cranbrook, Kent.
1949. IRWIN, R.; 13, Furzefield Crescent, Reigate, Surrey.
1949. JACK, T. A. M.; 20, Newton Court, Church Street, Kensington, London, W.8.
1940. JAMES, Miss CELIA K.; Blake's Wood, Barnt Green, Birmingham
1930. JORDAN, H. E. KARL, Ph.D., F.R.S., F.R.E.S., F.Z.S.; Zoological Museum, Tring, Hertfordshire.
1948. JUSTICE, J. R.; The Fulling Mill, Whitchurch, Hampshire.
1949. KEYWOOD, K. P.; 85, Hare Lane, Claygate, Surrey.
1904. KINNEAR, NORMAN B., C.B. (*Editor*, 1925–1930; *Vice-Chairman* 1934–1935; *Hon. Secretary*, 1940–1943); British Museum (Natural History), Cromwell Road, London, S.W.7.
1943. LACK, DAVID; Edward Grey Institute of Field Ornithology, 91 Banbury Road, Oxford.
1931. LEACH, Miss E. P. (*Committee*, 1937–1942; *Hon. Treasurer*, 1942–); 94 Kensington Court, London, W.8.
1926. LEWIS, JOHN SPEDAN; Leckford Abbas, Stockbridge, Hampshire.
1936. LONGFIELD, Miss CYNTHIA; 11 Iverna Gardens, London, W.8.
1921. LOW, GEORGE CARMICHAEL, M.A., M.D., C.M., F.R.C.P., F.Z.S. (*Hon. Secretary*, 1923–1929, 1943–1945; *Hon. Treasurer*, 1923–1929; *Editor*, 1930–1935 and 1940–1945; *Vice-Chairman*, 1938–1939); 7 Kent House, Kensington Court, Kensington, London, W.8.
1949. LOWE, Mrs. P. R.; 2, Hugo House, 179 Sloane Street, London, S.W.1.
1945. McCULLOCH, Captain G.; 65 Chester Road, Northwood, Middlesex.

1936. MACDONALD, J. D., B.Sc. (For.), B.Sc. (*Committee*, 1946—); British Museum (Natural History), Cromwell Road, London, S.W.7.
1921. MACKENZIE, JOHN M. D., B.A., C.M.Z.S.; Sidlaw Fur Farm, Tullach Ard, Balbeggie, Perthshire, Scotland.
1931. MCKITTRICK, T. H.; The Chase National Bank of the City of New York, Pine Street Corner of Nassau, New York, U.S.A.
1917. MACKWORTH-PRAED, C. W. (*Hon. Secretary*, 1922–1923 and 1929–1935; *Hon. Treasurer*, 1922–1923 and 1929–1936; *Committee*, 1936–1937; *Vice-Chairman*, 1945–1946); Castletop, Burley, near Ringwood, Hampshire.
1924. MCNEILE, J. H. (*Committee*, 1935–1938); Nonsuch, Bromham, Chippenham, Wiltshire.
1935. MACPHERSON, D. W. K.; P.O., Lilongwe, Nyasaland.
1948. MACPHIE, DAVID; c/o Lloyds Bank, Fakenham, Norfolk and Hazel Cottage, Petersham, Surrey.
1935. MANSFIELD, The Right Hon. the Earl of; Scone Palace, Perth, Scotland.
1907. MANSON-BAHR, Sir PHILIP, C.M.G., D.S.O., M.D., F.R.C.P. (*Committee*, 1930–1933; *Vice-Chairman*, 1946–1947); 149 Harley Street, London, W.1.
1933. MAVROGORDATO, J. G.; c/o Legal Dept., Sudan Govt., Khartoum, Sudan.
1929. MAYAUD, NOËL; 36 rue Hoche, Saumur, Maine-et-Loire, France.
1939. MEIKLEJOHN, Lieut.-Colonel R. F.; Arcady, Cley, Holt, Norfolk,
1901. MEINERTZHAGEN, Colonel R., D.S.O., F.Z.S., H.F.A.O.U.; 17 Kensington Park Gardens, London, W.11.
1947. MONK, Dr. J. F.; 344B Woodstock Road, Oxford.
1949. MOORE, Commdr. H. W. R., D.S.C., R.N.; National Service Club, Pall Mall, London, S.W.1.
1947. MORRISON, A. F.; P.O. Box 473, Dar-es-Salaam, Tanganyika Territory.
1931. MURTON, Mrs. C. D.; Cranbrook Lodge, Cranbrook, Kent.
1928. NAUMBURG, Mrs. W. W.; 121 East 64th Street, New York, N.Y., U.S.A.
1934. NICHOLSON, E. M.; 13 Upper Cheyne Row, London, S.W.3.
1937. NORTH, M. E. W.; c/o Secretariat, Nairobi, Kenya Colony and Summerdale, Holme, Carnforth, Lancashire.
1935. PAKENHAM, R. H. W.; Kingsley, Hurtis Hill, Crowborough, Sussex; and c/o Secretariat, Zanzibar, Eastern Africa.

1945. PARRINDER, E. R.; 7 Gwalior House, Chase Road, London, N.14.
1932. PAULSON, C. W. G. (*Committee, 1944–1947*); c/o Monotype Corporation Ltd., Salfords, Redhill, Surrey.
1946. PAYN, Lt.-Col. W. A.; The Gables, Osborne Road, Andover, Hampshire.
1932. PEALL, Mrs. O.; Hatfield Farm, Oare, Marlborough, Wiltshire.
1933. PEASE, H. J. R. (*Committee, 1939–1942*); The Savile Club, 69 Brook Street, London, W.1.
1938. PHILLIPS, A. S.; Frewin's Close, South Stoke, Reading, Berkshire.
1949. PHIPPS, Mrs.; Munster Lovell, Oxfordshire.
1949. PICKFORD, KENNETH D.; Rathlyn, 43, Barwood Road, Gloucester.
1948. PIERCY, K.; Clifton Cottage, Clifton, Bedfordshire.
1919. PITMAN, Captain C. R. S., D.S.O., M.C.; c/o Grindlay & Co., 54 Parliament Street, London, S.W.1.
1948. PLOWDEN-WARDLAW, W. J.; Dalchosnie House, Kinloch Rannoch, by Pitlochry, Perthshire, Scotland.
1945. PRESTWICH, A. A.; Chelmsford Road, Southgate, London, N.14.
1937. PRIESTLEY, Mrs. J. B., O.B.E.; B.3, Albany, Piccadilly, London, W.1.
1926. PYE-SMITH, Major G. H. R.; Langham Lodge, Cold Ash, Newbury, Buckinghamshire.
1947. REYNOLDS, Lieut. R. A. W.; Fernham, Torquay Road, Paignton, Devonshire.
1948. RHEAD, A. J.; P.O. Magadi, Kenya Colony.
1933. RHODES, Miss G. M. (*Committee, 1945–1948*); Hildersham Hall, Cambridge, Cambridgeshire.
1949. RICHARDS, Dr. H. A.; Greenoge, 40, Swakeleys Road, Ickenham, Uxbridge, Middlesex.
1903. RIVIÈRE, B. B., F.R.C.S.; The Old Hall, Woodbastwick, Norfolk.
1946. ROBERTS, B. B.; 9 Pelham Court, 145 Fulham Road, London, S.W.3.
1949. ROBERTSON, Commdr. A. N. P., R.N.; Deynes, Debden, Saffron Walden, Essex.
1948. RUSSELL, Lord HUGH; Crowholt, Woburn, Bletchley, Buckinghamshire.
1949. RYDZEWSKI, W.; 277, Holmsdale Road, London, S.E.25.

1933. SANDEMAN, R. G. C. C.; Dan-y-parc, Crickhowell, Brecon, Wales.
1932. SCHAUENSEE, R. M. DE; Devon, Pennsylvania, U.S.A.
1937. SCHOUTEDEN, Dr. H.; Musée du Congo Belge, Tervueren, Belgium.
1947. SCOTT, PETER, D.S.C.; New Grounds, Slimbridge, Gloucestershire.
1946. SERLE, Dr. W.; 64 Strathearn Road, Edinburgh, Scotland.
1902. SETH-SMITH, DAVID (*Committee*, 1905–1912; *Editor*, 1915–1920; *Vice-Chairman*, 1936–1937; *Chairman*, 1943–1946); Brabourne, Poyle Road, Guildford, Surrey.
1937. SHERRIFF, ALBERT; 8 Ranulf Road, Hampstead, London, N.W.2.
1930. SIMONDS, Major MAURICE H.; Fines Baylewicks, Binfield, Berkshire.
1919. SLADEN, Major A. G. LAMBART, M.C. (*Committee*, 1921–1924; *Hon. Treasurer*, 1936–1942); Crabtree Furlong, Haddenham, Aylesbury, Buckinghamshire; and 39 St. James's Street, London, S.W.1.
1949. SMITHERS, R. H. N.; The National Museum of Southern Rhodesia, P.O. Box, 240, Bulawayo, Southern Rhodesia.
1945. SOUTHERN, H. N.; University Museum, Oxford.
1906. SPARROW, Colonel R., C.M.G., D.S.O., (*Vice-Chairman*, 1937–1938); The Lodge, Colne Engaine, Earls Colne, Essex.
1947. STAPLES, Lt.-Commrdr. (S.) C. P., Royal Navy; Hedgerows, Ickenham, Middlesex.
1925. STEVENS, HERBERT; Clovelly, Beaconsfield Road, Tring, Hertfordshire.
1937. STEVENS, NOËL; Walcot Hall, Lydbury, North Salop.
1937. STONOR, Lieut. C. R. (*Hon. Secretary*, 1938–1940); Parkgates, near Southampton, Hampshire.
1949. SWYNNERTON, G. H.; Game Preservation Department, Lyamungil, P.O. Moshi, Tanganyika Territory.
1945. TENISON, Lt.-Col. W. P. C., D.S.O., F.L.S., F.Z.S. (*Editor* 1945–1947; *Hon. Secretary*, 1945–1947; *Vice-Chairman*, 1947–1948); 2 Wool Road, Wimbledon Common, London, S.W.20.
1927. THOMSON, A. LANDSBOROUGH, C.B., O.B.E., D.Sc., F.R.S.E. (*Committee*, 1930–1933; *Hon. Secretary*, 1935–1938; *Chairman*, 1938–1943); 16 Tregunter Road, London, S.W.10.
1897. TICEHURST, N. F., O.B.E., M.B., F.R.C.S. (*Committee*, 1912–1914); 24 Pevensey Road, St. Leonards-on-Sea, Sussex.

1948. Trott, A. C.; Avonmore, Portmore Park Road, Weybridge, Surrey.
1924. Tucker, B. W., M.A. (*Committee, 1928–1931; Vice-Chairman, 1940–1943*); 9 Marston Ferry Road, Oxford.
1925. Turtle, Lancelot J.; 17–21 Castle Place, Belfast, Ireland.
1949. Upton, Mrs. P. V.; Park Lodge, Margarettrey, Essex.
1930. Urquhart, Captain A., D.S.O.; Latimer Cottage, Latimer, Chesham, Buckinghamshire.
1946. van Someren, G. R. C.; P.O. Box 651, Nairobi, Kenya Colony.
1920. van Someren, Dr. V. G. L.; P.O. Box 1682, Nairobi, Kenya Colony.
1934. Vincent, Jack, M.B.E.; Firle, Mooi River, Natal, South Africa.
1934. Wade, Colonel G. A., M.C.; St. Quintin, Sandy Lane, Newcastle-under-Lyme, Staffordshire.
1949. Wadley, N. J.; 14, Elm Place, London, S.W.7.
1949. Wagstaffe, R.; The Yorkshire Museum, York, Yorkshire.
1947. Walter, C. N.; 32 Stanley Avenue, Beckenham, Kent.
1934. Watt, Mrs. H. Winifred Boyd, F.Z.S. (*Committee, 1942–1945*); 39, Christchurch Road, Bournemouth, Hampshire.
1948. Westall, Surgeon-Captain P. R.; 51, St. Mary's Mansions, London, W.2, and Lloyds Bank, West Smithfield, London, E.C.1.
1936. White, Charles M. N.; 8 Ansdell Road South, Ansdell, Lytham St. Annes, Lancashire.
1949. Whybrow, C.; Education Department, Mwanza, Tanganyika Territory.
1947. Williams, A.; Flat 22, 17, Stratton Street, London, W.1.
1903. Workman, William Hughes; Lismore, Windsor Avenue, Belfast, Ireland.
1924. Worms, Charles de; 26, Common Close, Horsell, Surrey.
1947. Wynne, Colonel O. E.; Court Wood, Sandleheath, Fordbridge, Hampshire.

Total number of Members ... 172.

NOTICE.

[Members are specially requested to keep the Hon. Secretary informed of any changes in their addresses, and those residing abroad should give early notification of coming home on leave.]

LIST OF AUTHORS.

AND OTHER PERSONS REFERRED TO.

	Page
ACCOUNTS, FINANCIAL STATEMENT OF	3
ANNOUNCEMENT	15
ANNUAL GENERAL MEETING	1
BENSON, C. W.	
A new race of Sunbird <i>Cinnyris afer whytei</i> from Nyasaland	19-20
Some new records from Nyasaland	58
Notes from the Lundazi district, Northern Rhodesia	58-60
The locality Katunga, recorded in Proc. Zool. Soc. 1900, pp. 1-3 in error for Kasungu	85-86
On the occurrence of certain species in Nyasaland:—	
1. <i>Anas capensis</i>	111
2. <i>Galachrysis nuchalis</i>	111
3. <i>Eremialector gutturalis</i>	111
4. <i>Apus apus toulsoni</i>	111
5. <i>Cossypha bocagei</i>	111-112
6. <i>Euplectes afra</i>	112
CAVE, Colonel F. O.	
Some notes on the Banded Francolin (<i>Francolinus schlegelii</i>)	103-104
On <i>Eremopterix leucopareia cavei</i>	108
Bird Calls	113
A Correction	123
CHAIRMAN (Announcement)	15
CHAPIN, Dr. J. P.	
A new race <i>Phyllastrephus xavieri serlei</i> from the British Cameroons	70-71
A new race of the Collared Sunbird (<i>Anthreptes collaris somereni</i>) from Lower Guinea	83-84
Bird Calls	113
CLANCEY, P. A.	
A new race of Stonechat <i>Saxicola torquata archimedes</i> from Sicily	84-85
COMMITTEE 1948-49	2
CORRECTION	123
CORRIGENDA	135
DINNERS AND MEETINGS FOR 1950	134

	Page
FINANCIAL STATEMENT	3
FITTER, R. S. R.	
Fair Isle and the Pyrenees	81
FLEMING, C. A.	
Expedition to the Snares Islands, New Zealand	5-6
GLEGG, W. E.	
Eggs of the Syrian Ostrich (<i>Struthio camelus syriacus</i>)	6-8
First occurrence of the Red-flanked Bluetail (<i>Tarsiger cyanurus cyanurus</i>) in Britain	46
The History of a Great Auk's Egg presented to the British Museum by Lord Lilford, of three Great Auk's Eggs bequeathed to the Nation, and of the remains of a recently discovered egg	77-80
A mounted specimen of the Great Auk presented to the British Museum by Lord Lilford	82
Great Auks reported from Lofoten Islands	120-121
An early New Zealand Ornithologist: Thomas Henry Potts, 1824-1888 ...	131-133
GRANT, Captain C. H. B.	
<i>Ploceus spekeoides</i>	20
A semi-albino specimen of <i>Bradypterus mariae usambarae</i> ...	57
GRANT, Captain C. H. B., and MACKWORTH-PRAED, C. W.	
Notes on Eastern and Southern African Birds:—	
1. On the status of <i>Falco peregrinus brookei</i>	30
2. On <i>Mirafra passerina</i>	30-31
3. On <i>Cuculus murinus</i> and <i>Cuculus sulphuratus</i>	31-32
Notes on East African Birds:—	
On a new race of <i>Apalis</i>	46
Notes on Eastern African Birds:—	
1. On the name of the Northern Indian Sparrow and its occurrence in Eastern Africa	122-123
2. On the status of <i>Ploceus jacksoni jacundus</i>	123
3. On the status of <i>Symplectes eremobius</i>	123
A new species <i>Budytes perconfusus</i> from the Sudan, and a new race of Yellow Wagtail <i>Budytes thunbergi alakulensis</i> from Turkestan	130-131
Notes on Eastern African Birds:—	
1. On the name of the Northern Indian Sparrow and its occurrence in Eastern Africa	133
2. On the status of <i>Colius striatus chyulu</i>	133
3. On the status of <i>Viridibucco leucomystax chyulu</i>	133-134
4. On the status of <i>Dendropicos fuscescens chyulu</i>	134
HALL, Mrs. B. P.	
A new race of Bush Warbler (<i>Eremomela badiceps latukae</i>) from the Sudan	76-78
HARRISON, D. L.	
The cranial vault in Chiroptera	67-70

HARRISON, Dr. J. G.

Some developmental peculiarities in the skulls of Birds and Bats	...	61-67
Eastern Greylag Goose in Germany	...	125-126
Overland Migration of Wading Birds and Terns across Schleswig-Holstein, Germany	...	126-130

HARRISON, Dr. J. G. See under STAPLES, Lieut.-Commander C. P.

HARRISON, Dr. J. M.

Reversionary Trends in Birds	...	37-44
Exhibition of a variety of the Rook	...	117-118

MACDONALD, J. D.

Ribbon-Tail Bird of Paradise	...	15-16
A new race of Orange Thrush <i>Geokichla piaggiae williamsi</i> from Uganda	...	16
Breeding of the Olivaceous Warbler in the Sudan	...	17

MACKWORTH-PRAED, C. W. See under GRANT, Captain C. H. B.

MATHEWS, G. M.

Remarks on Petrels	...	23-30
--------------------	-----	-------

MEETING, ANNUAL GENERAL

...	...	1
-----	-----	---

MEETING, SPECIAL GENERAL

...	...	86
-----	-----	----

MEETINGS AND DINNERS FOR 1950

...	...	134
-----	-----	-----

MEINERTZHAGEN, Colonel R.

On <i>Garrulax lanceolatus waddelli</i> and <i>Garrulax lanceolatus lumsdeni</i>	...	4-5
--	-----	-----

On the <i>Otus scops</i> group, and allied groups, with special reference to <i>Otus brucei</i>	...	8-11
---	-----	------

A new race <i>Melierax gabar defensorum</i> from Aden Protectorate	...	82-83
--	-----	-------

New races of a Courser (<i>Cursorius cursor theresæ</i>); a Woodpecker (<i>Geocolaptes olivaceus theresæ</i>) from Little Namaqualand; a Swift (<i>Apus affinis theresæ</i>) from Cape Province; a Lark (<i>Calandrella sclateri theresæ</i>) from Pofadder; a Wheatear (<i>Oenanthe lugens vaurieii</i>) from British Somaliland; and a Serin (<i>Serinus albogularis theresæ</i>) from Little Namaqualand	...	104-108
---	-----	---------

On the Little Grebe (<i>Podiceps ruficollis</i>) from the Thames Valley	...	108-109
---	-----	---------

On the status of <i>Parisoma leucomelana</i>	...	109-110
--	-----	---------

On the genera <i>Erythropygia</i> and <i>Agrobates</i> ; and the status of <i>Erythropygia hamertoni</i>	...	110
--	-----	-----

NOTICES

...	...	13, 21, 113, 123
-----	-----	------------------

PAYN, W. H.

A hybrid Teal and Shoveler	...	49-50
----------------------------	-----	-------

PHILIPS, W. W. A.

A new race of the Common Hawk Cuckoo (<i>Hierocouya varius ciceliæ</i>) from Ceylon	...	56-57
---	-----	-------

PUBLICATION OF THE BULLETIN

...	...	21, 114, 123, 134
-----	-----	-------------------

RIPLEY, S. DILLON.

A new race of Shrike (<i>Lanius validirostris hachisuka</i>) from the Philippines	...	121-122
---	-----	---------

SERLE, Dr. W.

A new genus and species of Babbler <i>Kupeornis gilberti</i> , and new races of a Wood-Hoopoe <i>Phæniculus bollei okuensis</i> ; a Swift <i>Apus æquatorialis bamendæ</i> ; a Barbet <i>Buccanodon duchaillui bannermani</i> ; a Robin-Chat <i>Cossypha insulana granti</i> , two Scrub-Warblers <i>Bradypterus mariæ youngi</i> and <i>Bradypterus mariæ manengube</i> , and <i>Apalis jacksoni bambuluensis</i> , all from British Cameroons	50-56
---	-----------------------------	-------

New races of a Warbler <i>Poliolais lopezi manengubaæ</i> , a Flycatcher <i>Dyaphorophyia ansorgei kumbænsis</i> and an Owl <i>Tyto capensis cameroonensis</i> , all from British Cameroons	74-76
--	-----------------	-------

STAPLES, Lieut.-Commander C. P., and HARRISON, Dr. J. G.

Further as to colour change without a moult with particular reference to the Snow-Bunting (<i>Plectrophenax nivalis nivalis</i>)	33-37
---	-------------	-------

Further as to colour change without a moult—subtractive change—its incidence and implication	89-108
---	-----------------	--------

THOMSON, Dr. LANDSBOROUGH.

Bicentenary of Edward Jenner	73-74
------------------------------	-----------------	-------

VAN MARLE, J. G.

A new race of Chaffinch (<i>Fringilla cælebs hibernica</i>) from south-west Ireland	118-119
--	-----------------	---------

VINCENT, JACK.

A new race of Richard's Pipit <i>Anthus richardi transkeiensis</i> from South Africa	17-18
---	-----------------	-------

A new race of Barratt's Scrub Warbler <i>Bradypterus barratti cathkinensis</i> from Natal	18-19
--	-----------------	-------

WAGSTAFFE, R.

First occurrence of Bonnelli's Warbler (<i>Phylloscopus bonelli</i>) in Britain		46
---	--	----

WHITE, C. M. N.

Size as a Racial Character	11-13
----------------------------	-----------------	-------

A new race of Lemon Dove <i>Aplopelia simplex samaliyæ</i> from Northern Rhodesia	20-21
--	-----------------	-------

A new race of Thrush <i>Turdus olivaceus williami</i> from Northern Rhodesia Systematic notes on African Birds:—		57-58
---	--	-------

1. On <i>Nycticorax leuconotus natalensis</i> ;		
2. On <i>Ægyptius monachus chincou</i> ;		
3. On <i>Melierax poliopterus coombesi</i> ;		
4. On <i>Circætus gallicus heptneri</i>	... ... ... ...	112-113

WORK, Dr. T. H.

Bits of land along the coast	45
------------------------------	-----------------	----

WYNNE, Colonel O. E.

Number of Genera, Species and Races of Birds	119-120
--	-------------	---------

PECIAL NOTICE.

The pagination of Bulletin No.1.Vol.69, should
read 1 - 14. Will Members and others kindly correct their
copies accordingly and insert this slip in their copy.

BULLETIN
OF THE
BRITISH ORNITHOLOGISTS' CLUB.

1 JULY 1948
PURCHASED Volume 69.
No. I.

ANNUAL GENERAL MEETING.

Chairman : DR. J. M. HARRISON.

This was held at the Rembrandt Hotel, Thurloe Place, S.W.7, on Wednesday, October 20, 1948, at 5.45 p.m.; 21 members were present.

MR. W. E. GLEGG, Honorary Secretary read his report for the session 1947-48.

The full complement of meetings, namely nine, was successfully held during the session. The attendances continue to improve, the average for the session being 38 against 33 for the session of 1946-47. The membership has progressed similarly and stands at 156 against 149 in the previous session. We are still, however, considerably behind pre-war figures. The average of ten sessions from 1938-39 backwards was 174, the highest figure during this period being 180 in 1932-33. Efforts must be made to restore this figure. Greatest success can be achieved for the Club by a low subscription and high membership. During the session 16 members have joined and of the names on the 1946-47 list, five have been removed under Rule IV, two have disappeared by resignation and two by death.

In addition it is with great regret that we record the death of Dr. P. R. Lowe, who joined the Club in 1907 and served it as Honorary Secretary, Honorary Treasurer, Editor and Chairman. His great services to ornithology will be dealt with suitably elsewhere. The Club records a tribute to his work and memory.

Considerable progress has been made with the sale of the *Bulletin* and as a result the funds have been assisted.

The importance of the cards for the dinners does not seem to be fully understood. On one occasion 25% more than had sent in cards attended and on another 25% fewer and at most of the dinners there are either absentees or unannounced diners. To enable the Secretary to complete the organization of the dinners the cards must be used.

MR. W. E. CLEGG was appointed Honorary Secretary at the meeting of the Committee, held on 17 December, 1947. This accounts for the necessity to elect two members to the Committee instead of one as usual. The thanks of the Club are given to Captain C. H. B. Grant for his services as Acting Honorary Secretary.

MISS E. P. LEACH, the Honorary Treasurer, reported that the finances of the Club were in a satisfactory condition, the balance at the Bank standing at £110. Although this was not so substantial a sum as was generally carried forward, she pointed out that the cost of producing the *Bulletin* had greatly increased and that during the past session, many photographs and drawings had been published in its pages, and reproductions were today very costly.

The decision to sell off back numbers of the *Bulletin* had already been justified and in the coming year proceeds from this source were expected to bring in more.

CAPTAIN C. H. B. GRANT, Editor, reported that Messrs. H. F. & G. Witherby have taken over both the printing and publishing of the *Bulletin*, and that Mr. Anthony Witherby was very kindly taking a personal interest in this matter. The Editor pointed out that an endeavour was being made to have the *Bulletin*, together with the Hon. Secretary's Meeting Card, in the hands of members one week before the next Meeting and to carry this out members must hand their MS. to the Editor at the Meeting, who will also check the proofs.

Election of Officers.

On the recommendation of the Committee the following officers were duly elected :—

COLONEL R. MEINERTZHAGEN and MAJOR A. G. L. SLADEN to be Vice-Chairmen for the coming session ; MR. C. T. DALGETY and LIEUT-COMMANDER C. P. STAPLES to serve on the Committee vice Miss G. M. Rhodes who retires by seniority and MR. W. E. GLEGG appointed Hon. Secretary.

Committee, 1948-49.

Dr. J. M. HARRISON, *Chairman* (elected 1946).

COLONEL R. MEINERTZHAGEN, *Vice-Chairman* (elected 1948).

MAJOR A. G. L. SLADEN, *Vice-Chairman* (elected 1948).

Captain C. H. B. GRANT, *Editor* (elected 1947).

Mr. W. E. GLEGG, *Honorary Secretary* (elected 1947).

Mr. J. D. MACDONALD (elected 1946).

Mr. P. A. D. HOLLOW (elected 1947).

Mr. C. T. DALGETY (elected 1948).

Lieut-Commdr. C. P. STAPLES (elected 1948).

BRITISH ORNITHOLOGISTS' CLUB.

FINANCIAL STATEMENT for the Year to 31st August, 1948.

1947. £ s. d.	1947. £ s. d.	£ s. d.
To Balance 1st September, 1947 :—		
Cash at Bank, Current a/c ..	194 18 6	100 0 10
Cash in hands of Treasurer ..	12 1	25 3 9
500 National Savings Certificates at Cost, Held by Bank ..	400 0 0	6 7 1
£256 1 <i>s</i> . 1 <i>d</i> . 3 <i>½</i> % War Stock at Cost ..	255 13 4	50 0 0
£100 3 <i>%</i> Savings Bonds 1960/70 at cost ..	100 0 0	17 1 6
933 10 1	951 3 11	10 10 0
" Entrance Fees of 17 Members at £1 ..	17 0 0	10 6 2
" Subscriptions :—		
153 Members at £1 1 <i>s</i> . 0 <i>d</i> . £160 13 0		
1 Member at £1 0 <i>s</i> . 6 <i>d</i> . ..	1 0 6	
1 Member at £1 2 <i>s</i> . 0 <i>d</i> . ..	1 2 0	
3 Members in Advance ..	3 3 0	
1 Member in Arrear ..	8 8 0	
	174 6 6	
40 15 1		
" Sales of "Bulletin" ..		
" Sales of back numbers ex Stock ..	14 1 3	54 16 4
" Interest on Investments :—		
3 <i>½</i> % War Stock ..	8 19 8	951 3 11
3 <i>½</i> % Savings Bonds, 1960/70 ..	3 0 0	
	11 19 8	
		258 2 6
		£1,170 13 3
11 19 8		
		£1,209 6 5
£1,170 13 3		
		£1,209 6 5

E. P. LEACH, Hon. Treasurer.

We have examined the foregoing Account with the Books and Vouchers of the Club for the year ended 31st August, 1948, and certify it to be in accordance therewith. We have also verified the Cash at Bank and in the hands of the Treasurer and the Securities.

FINSBURY CIRCUS HOUSE,
BLOMFIELD STREET, LONDON, E.C.2.
September 28, 1948.

W. B. KEEN & CO.,
Chartered Accountants.

ORDINARY MEETING.

The four-hundred-and-seventy-ninth Meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, S.W.7, on Wednesday, 20 October, 1948, following a dinner at 6.30 P.M.

Chairman : Dr. J. M. HARRISON.

Members present :—Miss P. BARCLAY-SMITH ; F. J. F. BARRINGTON ; Dr. G. BEVEN ; R. A. H. COOMBES ; Miss J. M. FERRIER ; J. FISHER ; W. E. GLEGG (*Hon. Secretary*) ; Miss C. E. GODMAN ; Miss E. M. GODMAN (*Vice-Chairman*) ; Capt. C. H. B. GRANT (*Editor*) ; Mrs. B. P. HALL ; J. R. JUSTICE ; N. B. KINNEAR ; Miss E. P. LEACH (*Hon. Treasurer*) ; Miss C. LONGFIELD ; Dr. G. CARMICHAEL LOW ; J. D. MACDONALD ; C. W. MACKWORTH-PRAED ; G. M. MATHEWS ; Sir PHILIP MANSON-BAHR ; Col. R. MEINERTZHAGEN ; B. B. ROBERTS ; Miss G. M. RHODES ; D. SETH-SMITH ; Major M. H. SIMONDS ; Lt.-Comdr. C. P. STAPLES ; Dr. A. LANDSBOROUGH-THOMSON ; B. W. TUCKER ; N. J. WADLEY ; C. N. WALTER ; A. WILLIAMS ; C. DE WORMS ; Col. O. E. WYNNE.

Guests of the Club :—C. A. FLEMING, E. H. GILLHAM.

Guests :—Miss T. CLAY, Miss S. J. KINNEAR.

Members, 34 ; Guests of the Club, 2 ; Guests, 2 ; Total, 38.

On *Garrulax lanceolatus waddelli* (Dresser) and *Garrulax lanceolatus lumsdeni* (Kinnear).

Colonel R. MEINERTZHAGEN made the following remarks :—

In April 1946, Dr. STRESEMANN gave me two specimens of *Garrulax lanceolatus waddelli* (Dresser) from Chusul, collected in February and March, 1939 by Schaeffer. Chusul is but four or five miles from Chaksam and about 30 miles south-west of Lhasa and is also the type locality of *G. waddelli*. Walton was the first man to obtain this bird at Chaksam (long. 90.40E. by 29.40 lat. N.) on the Tsang-po. Waddell saw Walton's specimens, realised the bird was new and at once sent a man back to collect others. These were also obtained at Chaksam. Walton's specimens went to the British Museum, Waddell's went to Dresser who at once described *Babax waddelli*.

In 1938, Kinnear described *Babax lanceolatus lumsdeni* from Le La in S.E. Tibet (long. 92.55E, Lat. 28.27N.) and about 250 miles south-east of Lhasa.

I have now examined the type of *Babax lumsdeni* in the British Museum, the type of *Babax waddelli* in the Manchester Museum together with ten specimens of reputed *Babax waddelli* from Gyangtse and eight *Babax waddelli* from Lhasa, Loti, Chusul and Chaksam.

In describing *Babax lumsdeni*, Kinnear compared it with Gyangste birds which are not identical with *B. waddelli* but differ in being slightly larger, generally paler and greyer on the upper side, shaft streaks of the under-parts being generally redder and with buff margins to the feathers.

In fact Kinnear redescribed *B. waddelli* for there is no difference at all between Chaksam birds and the type of *B. lumsdeni*. Kinnear states that his *B. lumsdeni* has a smaller bill than *B. waddelli*, but this is not the case for the type of *B. waddelli* has a culmen of 33 mm. and the type of *B. lumsdeni* has a culmen measuring 35 mm. The culmens of the two males from Gyantse measure 37 and 38 mm. and of six females 36 to 38.5 mm. The culmens of four males *B. waddelli* measure 33 to 36 mm. (once 39.5 mm.) and of three females 33 to 36 mm.

I am not describing the Gyantse bird as the series in Berlin does not entirely bear out these differences.

The country in which true *B. waddelli* (syn : *B. lumsdeni*) lives is at 3,000 feet lower elevation and damper than the upland arid region round Gyantse. The country of *B. waddelli* is also mainly pine-clad. The country of the Gyangste bird is upland desert, very dry, the main vegetation being *Hippophae*, *Rosa* and *Salix*. It is not surprising that such country should produce a paler and larger bird.

The type of *B. waddelli* is a September male in very fresh plumage and with uncompleted moult; wing 133 mm. The type of *B. lumsdeni* is a May male in worn plumage which makes it appear darker: wing 138 mm.

Expedition to the Snares Islands, New Zealand.

Mr. C. A. FLEMING (New Zealand) presented a short account (with slides) of an expedition to the Snares, a small group of sub-antarctic Islands 62 miles south of Stewart Island, an expedition arranged by Dr. R. A. Falla, Director, Dominion Museum, Wellington in November 1947 and including in its members Dr. R. C. Murphy (American Museum of Natural History). This was the first resident scientific expedition to the Snares, to study an avifauna which was known, from the short visits of ornithologists at intervals during the past 70 years. The most conspicuous bird species is the Snares Penguin (*Eudyptes pachyrhynchus afratus* Hutton) a "strong" sub-species of the south New Zealand nominate form, differing in size, plumage, detail and behaviour, nesting in large colonies, in which the young formed crèches under the care of a few parents, in contrast with the less gregarious nominate sub-species. The colonial Snares Penguin is notably tamer than its geographic representative to the north. Other sea-birds at the Snares are the Antarctic Tern (*Sterna vittata*); the Silver Gull (*L. novaehollandiae*); Southern Skua (*Catharacta skua blonbergi*); Bullen's Mollymauk (*Diomedea bulleri salvini*) and five species of petrel of the genera *Pachyptila*, *Puffinus*, *Pterodroma* and *Pelecanoides*. The Western Reef, a chain of exposed rocks 4 miles S.W. of the main Snares Island, had been reported by sealers of last century as a breeding place of the Cape Pigeon (*Daption capense L.*). Dr. R. A. Falla was able to land and confirm this anomalous breeding occurrence of an Antarctic bird in high latitude sub-antarctic waters. The indigenous land bird Fauna is small but has been increased by the unassisted colonisation by several introduced European passeres across the 62 miles of sea

that separate the Snares from Stewart Island. Endemic forms are three in number ; the Snares Sernbird (*Bowdleria punctata caudata* Bullen) ; the Snares Snipe (*Cænocorypha aucklandica huegeli* Tristram) ; and the Black Tomtit (*Petroica macrocephala dannefaerdii* Rothschild). The first is a strong sub-species of a New Zealand bird which seems to occupy a wider range of ecological niches at the Snares (where passerine species are so few) than in New Zealand. The Snipe is one of five races found on outlying islands of New Zealand; their flight is weak and they spend most of their time on the ground. Their derivation is obscure and their absence from the mainland of New Zealand suggests survival on the outliers of a genus which had a wider distribution in the past.

The Black Tomtit was long classified as a close relative of the Black Robin of the Chatham Islands (*Miro traversi* Buller) but field observations and study of skins has shown that whereas the Chatham Island bird has the long tarsus, short rounded wing and long first primary of *Miro* the Snares Tomtit is a melanistic race of the New Zealand so-called Tomtits ; (*Petroica macrocephala* subspe.). *Miro* represented the result of an early invasion of New Zealand by *Petroica*-like stock from Australia which had lost strong sexual dimorphism and adopting habitual forest-floor feeding, in the predator-free New Zealand forests, had acquired a Robin-like long tarsus and a degenerate rounded wing. The later invasion of *Petroica* had tended to show the same tendencies—rounded wing, long tarsus and first primary—but had not progressed so far from the inferred ancestral type represented by continental Australian *Petroica*. Some of the Pacific Island races of *Petroica multicolor* Swains had diverged from the continental, more generalised, forms, in just the same directions as had the successive invasions of New Zealand by the same stock, in losing their sexual plumage dimorphism, in acquiring a more rounded wing with long first primary and a long tarsus. Some of these changes in inland birds occupying relatively predator-free environment might be related to increasingly sedatory, forest-floor feeding habits and loss of the typical flycatcher behaviour.

Eggs of the Syrian Ostrich, *Struthio camelus syriacus* Rothschild.

Mr. W. E. GLEGG made the following remarks :—

The egg of this small form of the Ostrich, which is exhibited, bears the following inscription :—" This egg was taken by Charles Doughty from a nest at Bizeita, within ten miles of Lat. 30N. and Long. 38 E, about 1880. Given by Doughty to Colonel Lawrence who gave it to me in 1922. R. Meinertzhagen." Colonel Meinertzhagen presented this egg to Lord Rothschild and with the vast collection of eggs of Tring it has come to the nation. The egg is not only of historical interest but also has scientific value as such specimens are not plentiful. It is decidedly smaller and darker in colour than two other eggs of this race taken in Syria in 1912 by Aharoni and also forming part of the Rothschild egg-collection.

DESCRIPTION OF EGGS.

Measurements	Colour.
1880. 135 mm. \times 110 mm.	cream colour.
1912, No. 1 144 mm. \times 112 mm.	marguerite yellow
1912, No. 2 143 mm. \times 112 mm.	a shade lighter than No. 1

The eggs are very highly glossed and devoid of pitting.

Colours : Ridgway's Color Standards and Color Nomenclature, 1912.

Although we can learn something of this Ostrich from the very earliest writers, for example Xenophon in his *Anabasis*, written 379-371 B.C., states that the Ostrich was frequently seen in the desert of Arabia, yet specimens of and information about the bird are not too plentiful. Lord Rothschild's discovery that the Syrian or Arabian Ostrich is a distinct bird stimulated interest and several valuable contributions were published. It is not often that eggs are responsible for the description of a new race. Lord Rothschild received eggs, which had been taken by J. Aharoni in the Syrian desert. Lord Rothschild found that these eggs resembled those of the North African Ostrich in so far as they were smooth and not pitted but otherwise they are different as they are much smaller and more highly polished. These differences led Lord Rothschild to procure specimens of the bird and thus the new race *S. c. syriacus* was discovered. Lord Rothschild writes that two eggs measure 144 \times 112 mm. and 143 \times 112 mm., but does not mention further data. These eggs are identical in size with those I have already mentioned and it may be accepted that they are the same eggs. I might add that I had not seen Lord Rothschild's article before taking my measurements. Hartert gives as the average of six eggs 145 mm \times 116 mm. Two eggs taken in the Central Arabian desert on 31 January 1922, were received at the London Zoo. Mr. D. Seth-Smith states that an egg of the typical *Struthio camelus* from the Northern Provinces, Gold Coast, weighed when fresh 3lb. 15-oz. while one of the Syrian eggs, the larger of the two received, weighed 2-lb. 11-oz. The Syrian eggs were put in an incubator but failed to hatch so were presented to the British Museum ; they measure 148 mm \times 117 mm and 141 mm. \times 116 mm. In 1923 a young male and female were sent from the same district. The male reached the Zoo and thrived but the female died on the journey and the skeleton was presented to the British Museum.

The Syrian or Arabian Ostrich is said to breed in the middle of winter and to lay from twelve to twenty-one eggs and the nest is generally made at the foot of some isolated hill. The eggs are placed together in a circle half-buried in sand to protect them from rain, and a narrow trench is drawn round, so that the water runs off. At ten or twelve feet from this circle the female places two or three other eggs, which she does not hatch but leaves for the young to feed upon.

The Syrian Ostrich is a much decreased bird and its range has shrunk. All records of its occurrence are notable. It was recorded in August, 1922 that Emir Zeid, brother of Emir Feizal, owned one at Damascus. It used to run about the garden of Hadad Pasha, the Minister of Public

Security. It was three-quarters grown and beginning to get savage. The recorder understood that it had been caught in the desert east of and fairly close to Damascus. Mr. D. Carruthers, whose contributions are of much interest, stated that this bird had not been seen in the true Syrian desert for over a century and that it had become purely Arabian. Capt. R. E. Cheeseman, who has also supplied valuable information, however, points out that the two eggs sent to the Zoo were taken in the Wadi Abiad, which is well within the Syrian desert as defined by Mr. Carruthers. Mr. G. L. Bates in his unpublished "Birds of Arabia" gives a list of the localities in which the Ostrich had been seen in recent years. The latest of these are single birds seen in 1931 and 1938; localities Jabal Tubaik and Wadi Hadrij.

WORKS QUOTED.

- 1942. Bates, G.L. Birds of Arabia, p. 406. A copy of this unpublished work is in the Bird Room, British Museum (Natural History).
- 1922. "R.B." The Syrian Ostrich, *The Field*, vol. 140, p. 251.
- 1922. Carruthers, D. The Arabian Ostrich, *The Field*, vol. 139, p. 779 and *The Ibis*, pp. 471-4.
- 1923. Cheeseman, Capt. R. E. Recent Notes on the Arabian Ostrich, *The Ibis*, pp. 208-11, 359, Pl. 15.
- 1921. Hartert, Dr. E. Die Vögel der paläarktischen Fauna, p. 2,010; 1923, Nachtrag I, p. 92; 1938, Ergänzungsband, p. 544.
- 1921. Prater, S. H. The Arabian Ostrich, Journal of the Bombay Natural History Society, vol. 27, pp. 602-5.
- 1919. Rothschild, Lord. Description of a new sub-species of Ostrich from Syria, *Struthio camelus syriacus*, Bull. B.O.C., vol. 39, pp. 81-3.
- 1922. Seth-Smith, D. Ostrich Eggs from Baghdad, *The Field*, vol. 139, p. 546; An Arabian Ostrich, *The Field*, vol. 142, p. 28.

On the *Otus scops* (Linnaeus) group, and allied groups, with special reference to *Otus brucei* (Hume).

Colonel R. MEINERTZHAGEN sent the following:—

Two Scops Owls recently obtained in Arabia caused doubt in my mind as to the validity of *Otus brucei*, for they did not appear to be typical of either *Otus scops* nor *Otus brucei*.

This led to an examination of the whole *Otus scops* group, together with the *O. senegalensis* and *O. sunia* groups. This I have done in conjunction with relevant literature, especially with Stresemann (Mitt. Zool. Mus. Berlin, 12 pp. 191-195, 1925); Chapin (Am. Mus. Novit. p. 412, 1930); Friedmann and Deignan (Journ. Wash. Acad. Sci. 29, pp. 287-291, 1939); and Delacour (Zoologica, 26, pp. 133-141, 1941). Peters, Hartert, Ticehurst and others have all tackled this question; and the most remarkable feature of the extensive literature on the Scops Owls is the different interpretations given to specific and racial characters and the very big differences of opinion on almost every form.

I have a considerable series of Scops Owls in my own collection and have examined those in the British Museum, in the Tring collection in New York and in the Museums of Paris, Berlin, Leyden, Stockholm and Leningrad. I have also examined the type of *Otus scops distans* Friedmann and Deignan, in the U.S. National Museum. Two facts stand out.

1. Most Scops Owls are dimorphic, some always, some sometimes and others never, island forms tending to be more uniform than continental races which sometimes attain trimorphism.
2. I am convinced that the wing formula, so relied on by systematists who have grappled with this group, does not count for much except as a general guide and is certainly not a specific character. It is too unstable, even in an individual bird, the right wing sometimes disagreeing with the left wing.

The forms *O. brucei*, *O. pamela* and *O. distans* appear to give the clues to the problem of conspecificity.

I shall deal with *O. brucei* first. The usual conception of *Otus brucei* is that the first primary is between the sixth and the seventh and that the bird lacks any red on the upper-parts, a feature which is usual in *Otus s. scops*. In fact *Otus brucei* is but a desert edition of *O. s. scops* and not a very constant one. Hartert relies on wing formula and grey colour, lacking any rufous tinge. Dementiev is much more precise. In Syst. Av. Ross, p. 505, 1933, he states that *Otus s. scops* can be distinguished from *Otus brucei* at all ages by the ochraceous-red on the scapulars and lesser wing coverts, the shorter tail which is usually less than 75 mm., shorter tarsus which is less than 29 mm., and by the feathers on the legs not reaching the base of the toes. In *Otus brucei* the tail is over 75 mm., the tarsus is over 29 mm., and the feathers on the legs reach the base of the toes.

I have been unable to follow or confirm these differences as constant characters of *Otus brucei* unless nearly all the *O. brucei* I have examined are in reality *Otus scops scops*. And I have examined over fifty reputed *Otus brucei*, including the type which is in the British Museum. It is a male from Ahmednagar (Bombay) shot on 26 January, 1870, by the Rev. H. J. Bruce. It is a particularly grey bird with ochraceous but no ochraceous-red on the scapulars. The tail is 74 mm. long, the third primary is longest; in the right wing the first primary is between the sixth and seventh and in the left wing it equals the sixth.

I have in my collection eleven specimens which on colour I attribute to *Otus brucei*. On locality also they should be this form. Of these:—

Six from Arabia, Iraq and Syria have the first primary between sixth and seventh.

Two from Iraq and Sind have the first primary between the fifth and sixth.

One from Syria has the first primary equal to the sixth.

Two from Iraq and Arabia have the first primary between the fifth and sixth in one wing, and between the sixth and seventh in the other wing.

Moreover four of the above birds were obtained in the same tree on the same day in the garden of Government House, Baghdad, in November, 1922. Of these, which are without doubt *O. brucei*, one has the first

primary between the fifth and sixth, two have the first primary between the sixth and the seventh, and in one the right wing has the first primary between the sixth and seventh, and the left wing has the first primary between the fifth and the sixth.

I have also examined a large series of *Otus s. scops* from the Mediterranean east to Persia and find that in both colour and wing formula they are only constant in about 80% of cases. I therefore regard *Otus brucei* as rather a poor race of *Otus scops* and in such countries as Palestine, Syria, Persia, etc., where they meet, individuals occur which might be ascribed to either race. This accounts for the belief that *Otus scops* and *Otus brucei* breed in the same area and therefore cannot be conspecific.

Dementiev (Alauda 6, pp. 308-313, 1934) points out that very pale examples occur in Turkestan and that if such a pale race is valid, and I do not think it is, it must bear the name *Scops obsoleta* Cabanis, the type of which I have examined in the Berlin Museum. It agrees perfectly with the type of *Otus brucei*.

It has been stated on more than one occasion that *Otus brucei* has a different note to *Otus scops*. The clearness and limpidity of the little hoot-like call of *Scops* varies a great deal individually. In Crete I had over a dozen birds in one bush all calling at the same time and in Iraq I have heard *Otus brucei* calling all night. Individual variation of tone and modulation was considerable.

The following table gives the wing formula of the various groups of *Otus scops*:

	<i>Longest primary.</i>	<i>First primary.</i>
<i>O. scops</i>	3rd	=5th, or between 5th and 6th
<i>O. cyprius</i>	2nd, 3rd or 4th.	between 5th and 6th.
<i>O. brucei</i>	3rd or 4th.	between 5th and 7th.
<i>O. sunia</i>	4th.	between 7th and 8th, rarely =6th.
<i>O. japonicus</i>	3rd and 4th	between 7th and 8th.
<i>O. pamelaæ</i> (type)	4th	about =7th.
<i>O. distans.</i>	4th	=8th or anywhere between 7th and 10th.
<i>O. capensis</i>	4th	usually between 7th and 8th, rarely between 6th and 7th.
<i>O. flammeolus.</i>	4th or shares longest with 3rd.	=8th or between 6th and and 8th.

An examination of the *O. senegalensis*-group in the British Museum discloses great variation but no constancy in any one region. Maybe with additional material and an enormous series some slight constant difference might come to light, but such a character could never be used for determination of individuals. I therefore prefer to fuse all the *O. senegalensis* group except *P. pamelaæ*, *O. feæ* and *O. socotraæ*.

I can see no reason for excluding the *O. sunia*-group and agree to Delacour's treatment.

I am not sufficiently acquainted with the American *O. flammeolus* group to express an opinion. I have seen and shot them in Arizona and their inclusion in *Otus scops* seems to me to be reasonable.

I cannot agree that *Otus scops distans* is more closely related to the *O. senegalensis* group than to the *O sunia* group because of its wing formula; but it does demonstrate the fickle nature of wing formulas in *Otus scops* and to my mind brings the *O. sunia* and *O. senegalensis* groups into close relationship not only with each other but with *Otus scops* and its palearctic forms.

My diagnosis of this problem comes near to that of Delacour though I place *O. stictonotus* as a race of *O. japonicus*; I place all African races as synonyms of *O. senegalensis* and I admit *O. brucei* into the fold.

It works out as follows :—

- Otus scops cyprius* (Maderasz) 1901. Cyprus.
- Otus scops cycladum* (Tschusi) 1904. Cyclad Islands and Crete.
- Otus scops scops* (Linnaeus) 1758. Italy.
- Otus scops pulchellus* (Pallas) 1808. Siberia.
- Otus scops turanicus* (Loudon) 1905. Karakorum. Transcaspia.
- Otus scops brucei* (Hume) 1873. Ahmednagar, Bombay.
- Otus scops japonicus* Temm. and Schleg. 1850 Japan.. Ranging from Eastern Siberia and Japan to eastern and central China and in winter south to Tonkin and Siam.
- Otus scops interpositus* Kuroda, 1923. S. Borodino I.
- Otus scops botelensis* Kuroda, 1928. Botel Tobago Island.
- Otus scops elegans*. (Cassin) 1852. Off coast of Japan. Only known from the Riu Kiu Islands.
- Otus scops modestus* (Walden) 1874. Andaman Islands.
- Otus scops distans* Friedmann and Deignan. 1939 N. Siam.
- Otus scops sunia* (Hodgson) 1836. Nepal.
- Otus scops rufipennis* Sharpe, 1875. Eastern Ghats.
- Otus scops leggei* Ticehurst, 1923. Ceylon.
- Otus scops senegalensis* (Swainson) 1837. Gambia (not 1937 Senegal vide Delacour, op. cit. p. 140).
- Otus scops socotranus* (Ogilvie-Grant and Forbes) 1899. Socotra.
- Otus scops pamela* Bates, 1937. S.W. Arabia.
- Otus scops feae* (Salvadori) 1903. Island of Anobon.
- Otus scops flammeolus* (Kaup) 1852. Mexico.
- Otus scops rarus* Griscom. 1937. Guatemala.

Size as a Racial Character.

Mr. C. M. N. WHITE sent the following :—

My recent studies of African birds have made it clear that quite a number of species exhibit size cline which have often been split into races on account of size; I have also been convinced that where no colour differences exist to enhance the difference in size it is seldom desirable

to separate such populations racially unless there is a clear cut break in the size cline. If extremes are named one is usually left with populations intermediate in size which cannot be assigned to either extreme and which occupy a larger geographical area than either extreme. This induced me to re-examine a number of New Guinea birds which I studied some years ago and which exhibit the same phenomenon.

1. *Aviceda subcristata stenozona* (Gray).

The smaller race inhabiting the Aru Island, Misol, Salwatti and West New Guinea from the Vogelkop to Fly river has wing in males 278-309, in females 284-314 mm. *A. s. megala* (Stresemann) described from the D'Entrecasteaux Islands has wing in that locality 301-316 in males, 305-334 in females. If birds from South East New Guinea are included, it is male 298-316, in female 298-334 mm. There is thus a size cline from West to East and it would appear inexpedient to separate two races.

2. *Hemiprocne mystacea* (Lesson).

H. m. confirmata Stresemann from the Mollucas and Aru Islands has wing 201-231 mm. and is supposed to be smaller than the nominate New Guinea race which measures, Waigeu, Jobi and Vogelkop 216-229, south west and south New Guinea 222-236, south east New Guinea 229-238, north New Guinea from Idenburg river to Sattelberg 228-248 mm. There is no colour difference but a gradual size cline. I would not under such circumstances separate two races by name.

3. *Tanysiptera galatea* (Gray.)

This kingfisher has been separated into a number of races on inconstant differences in size and colour. The nominate race is often restricted to Waigeu, Salwatti and Western New Guinea. *T. p. minor* Salvadori and D'Albertis, of south east New Guinea is supposed to have a smaller bill on an average, but many specimens cannot be separated and I cannot see that this is more than a trend rather than a clear cut character. *T. g. meyeri* of north New Guinea is sometimes separated on its having more white at the base of the centre tail feathers but this is a very variable character and similar birds occur as far west as Waigeu. The difference is in my view too inconstant to warrant its use in separating a race. *T. g. vulcani* Rothschild and Hartert, of Vulcan Island is said to be larger than the last with wing 109-118 mm. In *T. galatea* from New Guinea and Waigeu the wing runs from 98-113 mm. The largest birds seem to occur in the west of its range and evidently they average still larger on Vulcan island but still with a substantial overlap which I consider too large to make separation worth while.

4. *Edolisoma montanum* (Meyer).

The nominate race of the Vogelkop has wing 135-145 in males, 128-135 in females. *E. m. minus* Rothschild and Hartert, of south east New Guinea measures male 126-135, female 120-127 mm. The extremes are thus separable. Over the much larger area of the rest of New Guinea the differences are bridged viz. Weyland and Snow Mountains male 129-140, female 130-135 mm.; Idenburg river and Cyclops mountains male 134-144,

female 127-139 mm. Birds from the Sepik area and north east New Guinea fall within the range of the nominate race. It would appear that with so much variation, the intermediates occupy a larger area than the extremes and that it would be more in keeping with present day tendencies not to recognise two races.

The facts set out are not new but it has not hitherto been the practice to consider them from the point of view of size clines. In the writer's view, especially after his experience of many similar cases among African birds, it is preferable for such data to be treated statistically to demonstrate the significance of size trends without giving racial designations.

Notices.

STOCK OF THE BULLETIN.

It is proposed to reduce the stock of the *Bulletin*, but before this is done members are given an opportunity to acquire parts at 2/6 each. Applications should be made to the Honorary Secretary. No reply will be sent if parts are not available. The following are out of print:— Volumes 1, 2, 3, 4 (except 1 copy each Pref. and part 28), 17, 18, 20, 22, 24, 26, 28, 30, 32 and 34. Part 113 and Pref. vol. 64.

NEXT MEETING.

The next Meeting of the Club will take place on Wednesday, 17 November, 1948, at the Rembrandt Hotel, Thurloe Place, S.W. 7. Dinner at 6.30 P.M.

BULLETIN OF THE BRITISH ORNITHOLOGISTS' CLUB.

Volume 69.
No. 2.

The four hundred-and-eightieth Meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, S.W.7, on Wednesday, 17th November, 1948, following a dinner at 6.30 P.M.

Chairman : Dr. J. M. HARRISON.

Members present :—Miss C. M. ACLAND ; F. J. F. BARRINGTON ; Dr. G. BEVEN ; Miss S. V. BENSON ; Mrs. G. M. CHADWYCK-HEALEY ; C. T. DALGETY ; J. FISHER ; W. E. GLEGG (*Hon. Secretary*) ; Miss C. E. GODMAN ; Miss E. M. GODMAN ; Capt. C. H. B. GRANT (*Editor*) ; Mrs. B. P. HALL ; R. E. HEATH ; Dr. J. G. HARRISON ; Miss E. P. LEACH (*Hon. Treasurer*) ; Miss C. LONGFIELD ; J. D. MACDONALD ; C. W. MACKWORTH-PRAED ; G. M. MATHEWS ; Lt.-Col. W. A. PAYN ; Miss G. M. RHODES ; Lt.-Commrdr. C. P. STAPLES ; B. W. TUCKER ; N. J. WADLEY ; R. WAGSTAFFE ; C. N. WALTER ; Col. O. E. WYNNE.

Guests :—Dr. J. H. FIDLER ; A. B. RUSSELL.

Members, 29 ; Guests, 2 ; Total, 31.

Announcement.

The CHAIRMAN made the following announcement :—

It has been decided, at to-day's (17th November, 1948) B.O.C. Committee Meeting, that in future descriptions of new forms, intended for publication in the *Bulletin*, will be primarily submitted to a Publications Sub-Committee, consisting of the Editor and two other Members of the B.O.C. Committee.

Ribbon-Tail Bird of Paradise.

Mr. J. D. MACDONALD exhibited this specimen and made the following remarks :—

A fine male specimen of the Ribbon-tail Bird of Paradise, *Astrapia mayeri* Stonor, was recently added to the national collection.

This species was first described by Stonor at a meeting of the Club in January 1939. The only material available at that time was the two long central tail feathers, which now form the type, but there was in addition some descriptive information in literature. Later in the same year Kinghorn described the bird independently in Australia and placed in it a new genus, *Tæniaparadisea*. Examination of this new specimen seems to confirm Stonor's diagnosis that the bird belongs to the *Astrapia* group.

A New Race of Orange Thrush from Uganda.

Mr. J. D. MACDONALD described the following and exhibited the type:—

GEOKICHLA PIAGGIÆ WILLIAMSI new race.

Description.—This race belongs to the russet-headed group of orange thrushes, distinguished as such by Praed and Grant, *Ibis*, 1937, p. 874. Variation in this species is mainly evident in the relative amounts of russet and olive on the upperparts. In *G.p. oberlanderi* Sassi, from the north-east Belgian Congo, the upperparts are mainly russet with a tinge of olive. In typical *G. p. piaggiæ*, found in high altitude localities from Abyssinia to west of Lake Tanganyika, the upperparts are mainly olive with a light russet wash, although the russet is clearly evident in the head region and predominates on the forehead. This new form is intermediate, having upper head regions predominately dark russet, a less intense shade of the same colour on rump and upper tail coverts, and the areas in between mainly olive lightly washed with russet. The underparts are paler russet than face and head and paler than the colour of the underparts of *G. p. piaggiæ*. The white eye-ring is very distinct, being about 2 mm. wide, unlike *G. p. oberlanderi* in which it is almost non-existent: in fact is it not shown in the coloured figure of the type, and I understand from Sassi that it has to be searched for in the specimen.

Distribution.—Only known from the type locality. Presumed to be confined to forests at high altitudes as in other races of this species.

Type.—In the British Museum. Adult female (ovaries slightly enlarged), collected by J. G. Williams on Mt. Muhavura, S.W. Kigezi, Uganda, at 9,500 ft. on September 24, 1946. Collector's number 10107. Brit. Mus. Reg. No. 1948.1.6.

Measurements of Type.—Wing 104, culmen from base 22, tail 77, tarsus 34 mm.

Remarks.—This specimen was presented by the Trustees of the Corydon Museum, Nairobi, and is named after Mr. J. G. Williams, who collected it. I am indebted to Miss B. Skramovsky who carried the specimen to Vienna to be compared with the type, and to Dr. Sassi for making the comparison.

Breeding of Olivaceous Warbler in the Sudan.

Mr. J. D. MACDONALD exhibited a specimen, an egg, and a nest, and made the following remarks :—

In May, 1947, Mr. J. G. Mavrogordato found the Olivaceous Warbler, *Hippolais pallida* (Hemprich and Ehrenberg), nesting in gardens in Khartoum. A specimen, with nest and a single egg, was collected and sent to the Natural History Museum. The appearance of nest and egg fits Meinertzhagen's description, who gives the southern breeding limit in Egypt as Beni Suef. This seems to be the first record of this bird breeding in the Sudan. Lynes, however, remarks that he found it in Darfur as late as June 5th "singing lustily" and as if "intending to remain and breed, but none did so."

The racial identity of Mavdogordato's specimen presented some difficulty. The nearest breeding race is *H. p. pallida*, which is found in Egypt, but the bird shows closest affinity with *H. p. elaeica* (Lindermeyer), which breeds in Palestine and further north. Messrs. Grant and Praed are in agreement with this identification. Both races winter in the Sudan.

The implication of this peculiar affinity is not readily understood. It is possible that our identification may be contradicted if a short series of breeding birds could be obtained, for racial differences are very slight. It is to be hoped that Mr. Mavrogordato will be able to obtain additional material next year.

A New Race of Richard's Pipit from South Africa.

Mr. JACK VINCENT sent the following and the type for exhibition :—

ANTHUS RICHARDI TRANSKEIENSIS, new race.

Description.—Differs from *A. richardi lichenya* Vincent and *A. richardi katangae* Chapin, in being much paler both above and below.

Distribution.—South Africa from the Cape Province, north to Southern Rhodesia, including Natal, Orange Free State, Transvaal and Bechuanaland.

Type.—In the British Museum. Adult Male. Qumbu, Transkeian Territories, Eastern Cape Province, at 3,400 feet. 18 February, 1947. Collected by Jack Vincent. Collector's No. 2436. Brit. Mus. Reg. No. 1948.44.1.

Measurements of Type.—Wing 92, exposed part of culmen 14, culmen from base 17.5, tail 63, tarsus 27, hind claw 12, total length in flesh 174 mm.

Remarks.—The type was in full breeding condition, and was carrying out prolonged song flights. Its plumage shows signs of wear, and although nesting was general in the area at the time the season was a

delayed one, due apparently to drought conditions. A series of twelve breeding birds of the race was obtained, all of which are being presented to the British Museum.

In Ostrich vii (2) 1936, p. 111, Dr. Roberts submitted *A. r. rufuloides* as a new name for *A. raaltenii* Layard. The latter name, however, is not preoccupied, so that *A. r. rufuloides* is not a new name but a substitute one for *A. r. raaltenii* of which it must become a synonym. The type of *A. r. rufuloides* furthermore has no standing, neither does the inferred type-locality of Grahamstown. It seems that Layard's type specimen cannot now be traced, but his original description of *A. raaltenii* from Swellendam, with its wing of 66 mm., is clearly not referable to a South African *A. richardi*. Investigations have failed to reveal any small pipit from the Swellendam area comparable with Layard's bird, and it appears that the name *A. raaltenii* will have to be considered as indeterminate, as will also Roberts's *A. r. rufuloides*.

A New Race of Barratt's Scrub Warbler from Natal, South Africa.

Mr. JACK VINCENT sent the following and the type for exhibition :—
BRADYPTERUS BARRATTI CATHKINENSIS, new race.

Description.—Similar in size to *B. b. barratti* Sharpe and *B. b. wilsoni* (Roberts), but darker above, less rufescent, and with chest and flanks olivaceous grey, not olivaceous brown; from *B. b. major* (Roberts) it also differs in the colour as given above and in being smaller.

Distribution.—Western Natal, South Africa.

Type.—In the British Museum. Male adult. Near Cathkin Peak and the Mahlabachaneng Pass, Giant's Castle Game Reserve, Natal; at 7,000 ft. on the lower slopes of the Quathlamba-Drakensberg escarpment. 18 October, 1947. Collected by Jack Vincent. Collector's No. 2458. Brit. Mus. Reg. No. 1948.39.8.

Measurements of Type.—Wing 66, culmen from base 16, tail 73, tarsus 12 mm.

Remarks.—A female paired to the male of this new race has a wing of 64 mm., and a young male with yellow below agrees with it in the colour of the upper side. This latter was taken at Brayhill bush, near Mooi River, Natal, and has a wing of 63 mm. When defining the range of *B. b. wilsoni* the late Dr. Roberts gave it as the "foothills of the Drakensberg." This is perhaps an unfortunate way of describing the Kloof-Pinestown area of Natal, which is some 100 miles from the actual Drakensberg range, is coastal country, and has an altitude of approximately 1,000 ft. only. The term is possibly more applicable to the much higher country of the Natal uplands wherein *B. b. cathkinensis* occurs. But the Drakensberg range is shown on maps as extending from the Cape Province through to the Northern Transvaal, and to refer to it in faunal distribution without more precise definition is to use a very loose term. The 10,000-11,000 ft. mass of the Quathlamba-Drakensberg overlooking Natal has little resemblance or connection with the much lower and more isolated mountains in the north-eastern Transvaal, although the latter are still mapped as part of the Drakensberg.

I am very much indebted to Captain Grant and Mr. C. W. Mackworth-Praed for having drawn my attention to this new race, and for having made the necessary comparisons.

Note by Grant and Praed.—The series in the British Museum of three specimens from the type locality of *B. b. barratti* and seven from Kloof, Pinetown, and Durban are similar in colour and size and therefore *B. b. wilsoni* Roberts is a synonym. Wing measurements of above; *B. b. barratti* 61-64 mm., *B. b. wilsoni* 61-65 mm. The one specimen of *B. b. major* from Wakkerstroom, has a wing of 70 mm.

It seems evident that the nominate race will be found in all those forest patches immediately adjacent to the coastal belt, since the known localities—Woodbush, Macmac, Ingwavuma, and Pinetown—all overlook the true low country. The two races *B. b. cathkinensis* and *B. b. major*, however, are strictly montane forest birds; the former in the extensive forest patches of the western Natal highlands, the latter in the smaller and more isolated mountain forests of south-eastern Transvaal.

The British Museum has no material to determine the validity of *B. b. godfreyi* (Roberts), which is also a bird of lower altitudes, found in country similar to that of the nominate race but farther to the south-eastward.

A New Race of Sunbird from Nyasaland.

Mr. C. W. BENSON sent the following description and the type for exhibition:—

CINNYRIS AFER WHYTEI, new race.

Description.—Male: Similar in size to *C. a. graueri* Neumann, and *C. a. ludovicensis* Bocage, but differs from the former in having the mantle more golden green and the narrow band above the red band on chest more deep blue than violet. From the latter it differs in having the red band across the chest more scarlet, less yellowish-red and narrower; belly slightly more olivaceous, less dusky. Female: not yet known.

Distribution.—Nyika Plateau, northern Nyasaland.

Type.—In the British Museum. Adult male. Nyika Plateau, 10 miles south-west of Livingstonia, northern Nyasaland, 6,000 feet, 26 December, 1937. Collected by C. W. Benson. Collector's No. 1011. Brit. Mus. Reg. No. 1939.2.25.48.

Measurement of Type: Wing 63, culmen from base 21, tail 51, tarsus 19 mm.

Remarks.—Through the kindness of Dr. J. P. Chapin of the American Museum of Natural History, New York, I have had the loan of five adult males and one adult female of *C. a. ludovicensis* from Angola. The Angola males have a red chest band 20-23 mm. in width, as against 15-16 mm. in the seven male specimens of this new race, and wings

64-67 mm. as against 61-66 mm. I have named this new race in honour of the late Mr. A. Whyte, who collected the first two adult males in 1896. I am indebted to Mr. J. D. Macdonald, and to Mr. C. W. Mackworth-Praed and Capt. C. H. B. Grant for making the comparisons described above.

In *Ibis*, 1941, p. 29, *C. chalybeus manoensis* Reichenow is recorded as occurring on the Nyika Plateau, in bushes in short open grassland at over 6,000 ft. It is however, *C. afer whytei* which occupies this ecological niche. *C. afer* is known from no other area in Nyasaland. *C. chalybeus* on the other hand, occurs through Nyasaland at 3,000-6,000 ft., typically in *Brachystegia* woodland, and is absent from short-grassed mountain-plateaux. See also *Bull. B.O.C.*, 64, p. 10. Captain Grant, *in litt.*, informs me that *C. manoensis* is a synonym of *C. chalybeus intermedius* (Bocage).

Ploceus spekeoides. Grant and Praed.

Captain C. H. B. GRANT exhibited a series of six males and four females and remarked :—

In the *Bull. B.O.C.*, 69, p. 7, 1947, Mr. Mackworth-Praed and myself described this new Weaver from Uganda. Captain C. R. S. Pitman took a great interest in this discovery and at the first opportunity obtained this fine series, which he has presented to the National Collection. These ten specimens agree perfectly with the original male and female which were presented to the British Museum (Natural History) by the late Colonel Stephenson Clarke twenty-five years ago. Colonel Pitman hopes to obtain a series in the non-breeding season and we shall then know whether this species has a non-breeding dress.

A New Race of Lemon Dove from Northern Rhodesia.

Mr. C. M. N. WHITE sent the following :—

For the last ten years I have known of a large evergreen forest patch on the Kansoku stream in the south of Mwinilunga, but only now has an opportunity to study it been afforded, for its isolated position in uninhabited country has prevented my doing so earlier and has also been a deterrent to my collector. Of the birds now obtained there, a dove is a species new to Northern Rhodesia and a thrush surprisingly different from its nearest neighbour.

APLOELIA SIMPLEX SAMALIYÆ, new race.

Description—Male : nearest to *A. s. jacksoni* (Sharpe) of Ruwenzori but forehead pure white not grey ; back and wings blacker, less brown ; grey of breast more purplish with a strong green gloss ; under tail coverts pale whitish grey. Female : differs from that of *A. s. jacksoni* in being much blacker above, the upper mantle heavily glossed with green changing to amethyst on the hind neck and to purple and green on the hind

crown ; forehead pure white ; breast amethyst purple with a green gloss, more purple than *A. s. jacksoni*, rest of belly and under tail coverts rich vinous.

Distribution.—Kansoku and Luakela forest patches, Mwinilunga, north-western Northern Rhodesia.

Type.—In my collection : Male adult. Collected at Kansoku, Mwinilunga district, Northern Rhodesia on 2 August 1948, by Nelson Makina.

Remarks.—I have known of these doves in the Luakela forests but with only females had confused them with *A. larvata* (Temminck) of South and East Africa. Now that a male is available it is clear that they represent a race of the West African *A. simplex* group and are a notable addition to the fauna of Northern Rhodesia. The wing measures 160-166 in three examples.

Notices.

STOCK OF THE BULLETIN.

It is proposed to reduce the stock of the ' Bulletin ', but before this is done members are given an opportunity to acquire parts at 2/6 each. Applications should be made to the Honorary Secretary. No reply will be sent if parts are not available. The following are out of print :— Volumes 1, 2, 3, 4 (except 1 copy each Pref. and part 28), 17, 18, 20, 22, 24, 26, 28, 30, 32 and 34. Part 113 and Pref. vol. 64.

Publication of the Bulletin.

As announced at the Annual General Meeting, the Editor is endeavouring, with the aid of the printers and publishers, Messrs. H. F. & G. Witherby, Ltd., to have the Bulletin, with the Meeting Card, in the hands of the Members one week before the next Meeting, as was the custom before the late war.

The only way in which this can be done is for Members who make a contribution at a Meeting to hand the MS. to the Editor at that Meeting. As the proofs will be corrected by the Editor it is essential that the MS. should be correct and either typed or written very clearly with scientific and place names in block letters. The first mention of a scientific name should be spelt out in full, i.e., genus, specific name, racial name (if any) and author. Any further mention of the same name need only have the initial letter of the genus and no further mention of the author.

If no MS. is handed to the Editor at the Meeting, a note will be inserted mentioning the contribution.

Committee, 1948-49.

Dr. J. M. HARRISON, *Chairman* (elected 1946).
Colonel R. MEINERTZHAGEN, *Vice-Chairman* (elected 1948).
Major A. G. L. SLADEN, *Vice-Chairman* (elected 1948).
Captain C. H. B. GRANT, *Editor* (elected 1947).
Mr. W. E. GLEGG, *Honorary Secretary* (elected 1947).
Miss E. P. LEACH (elected 1942).
Mr. J. D. MACDONALD (elected 1946).
Mr. P. A. D. HOLLOM (elected 1947).
Mr. C. T. DALGETY (elected 1948).
Lieut-Commrdr. C. P. STAPLES (elected 1948).

NEXT MEETING.

The next Meeting of the Club will take place on Wednesday, 15 December, 1948, at the Rembrandt Hotel, Thurloe Place, S.W.7.
Dinner at 6.30 p.m.

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

Volume 69.

No. 3.

The four hundred-and-eighty-first Meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, S.W.7, on Wednesday, 15th December, 1948, following a dinner at 6.30 P.M.

Chairman : Dr. J. M. HARRISON.

Members present :—Miss C. M. ACLAND ; Miss P. BARCLAY-SMITH ; F. J. F. BARRINGTON ; Dr. G. BEVEN ; Mrs. G. M. CHADWYCK-HEALEY ; R. P. DONALDSON ; W. E. GLEGG (*Hon. Secretary*) ; Miss C. E. GODMAN ; Miss E. M. GODMAN ; Capt. C. H. B. GRANT (*Editor*) ; Mrs. B. P. HALL ; Miss E. P. LEACH (*Hon. Treasurer*) ; Mrs. P. R. LOWE ; C. W. MACKWORTH-PRAED ; G. M. MATHEWS ; Lt.-Col. W. A. PAYN ; Miss G. M. RHODES ; Major A. G. L. SLADEN (*Vice-Chairman*) ; Lt.-Commdr. C. P. STAPLES ; Dr. A. LANDSBOROUGH THOMSON ; N. J. WADLEY ; R. WAGSTAFFE ; C. N. WALTER ; Mrs. H. W. BOYD WATT ; A. WILLIAMS ; C. DE WORMS ; Col. O. E. WYNNE.

Guests :—R. F. BRETHERTON ; Miss M. KIRKE ; O. MILLER ; Miss G. WATT.

Members, 28 ; Guests, 4 ; Total, 32.

Remarks on Petrels.

Mr. G. M. MATHEWS, C.B.E., read the following :—

While working out the different forms in the genus *Pachyptila* the question arises "has the admission of races outgrown its usefulness and become burdensome?"

Would it be possible in the genus *Pachyptila* to have only two species, *P. vittata* Foster and *P. turtur* (Kuhl)? Of the former species we only admit as races *P. salvini* Mathews, *P. desolata* (Gmelin) and *P. belcheri* Mathews, no others.

Breeding.—Islands in the Chatham Group and in the Foveaux Strait. Auckland and Macquarie Islands : St. Pauls, Kerguelen, Heard, Crozets, Marion, Tristan, Bouvet, South Georgia, South Orkney to Cape Denison.

With a long series of birds it is possible to connect the width of the bill of the narrowest *P. belcheri* to the widest *P. vittata*.

Next we have *P. turtur* and its race *P. crassirostris* Mathews, no others.

Breeding.—Islands in the Bass and Foveaux Straits and up the east coast of New Zealand to the North to about Lat. 35°S. Mangare Island in the Chathams, in the south of which Group on "The Pyramid", *P. crassirostris* breeds and also in the Bounty and Antipodes Islands and on Kerguelen.

In *P. vittata* the bills of over fifty adults vary from 31.5 to 36.75 in length; and 19.5 to 24.25 in width, average 34.45 by 21.94mm. In over fifty fledglings 31.25 to 36.5 by 19 to 21.5, average 33.96 by 20mm. Less than half 0.5mm. in length and 2mm. in width.

In other species in the Procellariiformes the bill is not used as of generic value. The width of the bill of *P. salvini* does not overlap that of *P. vittata*, nor does *P. belcheri* that of *P. desolata*; there is a slight overlap of *P. desolata* with *P. salvini*. *P. belcheri* width 9-12; *P. desolata* 13.6-15.4; *P. salvini* 15-17; *P. vittata* 18-24mm. If this is admitted it may be possible to do away with many genera and merge the forms now admitted as species into older-named units. As we protect a species from having too many races, so we must protect a genus from too many species, otherwise each becomes unwieldy and therefore tiresome to the worker. We cannot do away with monotypic genera but we can reduce the number by judicious lumping. If we decide to put the Black Swan of Australia (*Chenopis atrata* Latham) into the genus *Cygnus*, it should be quite easy to lump other genera into older-named ones. All Cormorants are now considered by some workers to be in the same genus. We do not accept the shape of the tail or the number of tail feathers as of generic value, nor do we accept the shape or size of the leg and foot.

In the Emu 1944, p. 213, Richdale published the measurements of the bills of fully-fledged chicks of *P. vittata* as from 19 to 21.5mm. wide; and the difference between the measurements of over fifty for the last four weeks before the young left the nest as 18.25 to 20.02mm.

The difference between the bill of the "just flying" young and the fully adult in length is very little and in the width only about 3mm.; 89 adults and 58 chicks measured. We then have from the same locality a long series of measured birds.

From Victoria is a bird *P. gouldi* Mathews, with a bill only 17mm. wide and *P. missus* Mathews, from Western Australia with a bill 16mm. wide, these have been placed under *P. vittata*, and considered to be immature. *P. v. macgillivrayi*, Gray, an admitted fully adult, has the width of the bill 18 mm. That is immature birds from the same breeding locality vary 18 to 21 and from quite another locality 16 to 17.

Is the Australian bird *P. gouldi* a race or do we admit a variation of from 16 to 21.5 in immature and 18 to 24 in adults?

The question is where do we divide the species and on what grounds? Can we say that the feathers on the ramus encroach much further along the mandible in *P. vittata* and *P. salvini*, than in the rest of the named forms? Is the narrow-billed *P. belcheri* to be included?

The adults in *P. vittata*, *P. macgillivrayi* and *P. balæna* Mathews, are easily picked out, and it appears that there is a form between this and *P. salvini*.

As those workers found, who have a series of a couple of hundred or more, it is quite as easy to pick out *P. gouldi* or *P. maui*, as it is to pick *P. vittata*, *P. salvini* or *P. desolata*.

P. gouldi cannot be matched amongst the breeding birds on Whero Island, where then does it breed? and where does *P. maui* Mathews, breed? Have we any data on the shrinkage, if any, of the width of the bill of so called immature?

If we can place all the Prions in one genus, that is the species with the width of the bill as little as 9 mm., with those with a width of bill as much as 24mm., on what grounds, other than colour, do we separate *Daption* Stephens 1826 from *Fulmarus* of the same author?

The bill of *Daption* resembles that of *Pachyptila vittata* (Forster 1777) and I consider that *Fulmarus antarcticus* Stephens, 1826 resembles *Fulmarus*.

In the genus *Pachyptila* colour is the predominant character, while *Daption* differs in this respect from *Fulmarus* and *Priocella* H. and J., 1844 (of which Stephen's bird is the genotype) which last two resemble each other in general colour-scheme.

Could we therefore use *Fulmarus* and put as synonyms *Daption* and *Priocella*, leaving *Macronectes* Richmond 1905 and *Thalassoica* Reich, 1863 as monotypic genera? The genus *Thalassoica* was placed with the *Fulmars* by Coues 1866, and Gray 1871, Forbes in 1882 and this was followed by Ridgway, Pycroft 1910, (Godman), myself 1912 onwards, Bianchi 1913, Loomis 1918, Falla 1937.

Many workers, since the Catalogue of Birds, 1896 onwards, have placed *Priocella* and *Thalassoica* near each other. Salvin placing these two genera in the *Puffininæ*, and not in the *Fulmarinæ*. If *Priocella* is a synonym of *Fulmarus*, the question arises "what is *Thelassoica*?" perhaps also a synonym of *Fulmarus*.

As pointed out in the "Catalogue of Birds" Vol. 25, 1896, p. 401, the bird there called *P. aterrima* Bonaparte (correctly *P. brevirostris* Lesson 1831) is only slightly different from *P. macroptera* (Smith) described on p. 400. If these two birds are only representatives of each other, the oldest name is *Poterodroma brevirostris* with *P. macroptera* as a race of it.

If so we then have :—*P. b. brevirostris* and *P. b. macroptera* (with two races). In "Nov. Zool." Vol. 39, p. 163, 1934, these birds are treated as races.

If, in the Skuas, the very different shape of the tail in the three species is not of generic value, how can we use this character to differentiate the Sooty from the Wandering Albatross? Each has the central tail-feathers longer than the outer, both tails are "wedge-shaped" as are the tails of so many of the Petrels, with the exception of the Fork-tailed (Double-wedged) Storm-Petrels. This last mentioned character was used as of generic value and the genus *Oceanodroma* Reichenbach 1853 introduced for those with fork-tails!!! Is not colour of more generic value than any other character? This seems to be the case after examination of the ornithological works of the last hundred years. It is claimed that as the Grey and Golden-Plover resemble each other in general, the absence of a toe is of no generic value. That the different number of tail-feathers is not of generic value is shown in *Eudyptes*; *Oxyura*; *Phaeton*; *Capella*; *Phalacrocorax* etc. And the shape of tail in *Puffinus*; *Stercorarius*; *Calidris*; *Pœphila*; *Erythura*; *Apornis*; *Menura*, etc.; of the bill in *Pachyptila*; *Diomedea*; *Puffinus*; *Calyptorhynchus*; *Larus*, etc. The colour of chicks in *Sterna* and some waders; Wattles in *Anthochæra* and *Gliciphila*. Crests or "ears" in *Ninox*; *Ptiloris*; *Platalea*; *Chlamydera*; *Egretta*, etc.

As *Hydrobates melania* (Bonaparte) amongst the "short-legged" Storm-Petrels has an average tarsus measurement (29-34) of 31-32mm. And *Oceanites gracilis* (Elliot) amongst the "long-legged" ones has an average of 30 or a little more and *O. nereis* (Gould 1841) also a "long leg" has an average (30-34.5) of 31.9mm., it is obvious that "long" and "short-legged" cannot divide these birds.

Fregetta included those species that "looked like" *F. tropica* (Gould) irrespective of "structural characters," as example *Procellaria albicularis* Finsch 1878 (now *P. amphitrite* Jardin 1859) which resembles *Thalassidroma hornbyi* Gray, in general appearances; and *Fregetta moestissima* Salvin, which resembles *Procellaria melania* Bonaparte 1854. *Thalassidroma tethys* Bonaparte 1852 was put with *H. pelagica* (Linnaeus) because it "looked like it" and *Thalassidroma macgillivrayi* Gray 1860 was put into *Bulweria* because of its colour.

The most flagrant case of a colour genus is *Bulweria* Bp. 1852 where we have the species *Thalassidroma* (*Bulweria*) *macgillivrayi* put with *Bulweria bulwerii* Jardin and Selby 1828, purely because of its colour and for no other apparent reason. All workers since Coues 1866 (who correctly placed it in *Pterodroma*) have put it in *Bulweria*. Those who came to the British Museum on purpose to study the Petrels accepted its generic location, till 1936 (*Ibis*, p. 309, pl. 2 April).

In Nov. Zool. 18, p. 201 January, 1912 and in the "Birds of Australia," Vol. 2, p. 106, May 30, 1912, the genus *Adamastor* Bp. 1856, was placed as a synonym of *Procellaria* Linné 1758, because colour was not considered as of generic value. This was contrary to the general usage of the

previous fifty years. (In his Check-list, Vol. 1, 1931, October 6, Peters admits this genus). Again colour has been given precedence over structure.

In the all-dark Sooty-Albatross we find the wedge-shaped tail more pronounced than the wedge-shaped tail of *Diomedea epomophora* Lesson 1825, (practically a white bird) and because of its colour a monotypic genus *Phæbetria* is allowed by some workers; however when we come to the pronounced wedge-shaped tail of the all-dark *Procellaria pacifica* Gmelin, which is more pronounced than is the wedge-shaped tail in the bi-coloured *Puffinus reinholdi* Mathews 1912, in spite of its colour we do not admit the monotypic genus *Thyellodroma* Stejneger 1888. We do admit purely colour genera in *Pachyptila* and *Pelecanoides* in which the bill formation differs greatly. The formation of the legs and feet in the Storm Petrels also differ greatly, and so do the tails.

When the genus *Fregetta* was introduced by Bonaparte in 1855, he thought that the bird later named *P. albicularis* was the *T. tropica* (cf. C.R. 41-1113 Dec. 31). This was the bird from "des Iles Marquises" collected by Edelston Jardin. This misled Coues, "Proc. Acad. N.S. Philad." 1864, p.85 who said that *Fregetta* may be restricted to this species alone and the others, formerly included, removed to a different genus. As *P. grallaria* (Vieillot) is the genotype of *Fregetta* (equals *Cymodroma*) a new genus was introduced in 1912 for *P. albicularis* on account of its unique legs and feet, a character not now admitted.

As it is important to have designated the breeding-locality of every name, including synonyms, I put forward the following. Where no type-locality was given I designate one. Names taken from Nov. Zool. 39 pp. 153/198, 1934 and Bull. B.O.C. 68, Aug. 1948. Localities in brackets are not proven.

<i>Species.</i>	<i>Designated Type Locality.</i>	<i>Designated Breeding Locality.</i>
<i>Diomedea westralis</i> Mathews.	Albany, Australia.	St. Paul's.
<i>Diomedea rohui</i> Mathews.	Sydney.	Adam's Island.
<i>Diomedea rothschildi</i> Lesson.	Australian Seas.	Antipodes Island.
<i>Diomedea epomophora</i> Lesson.	Designated.	Campbell Island.
<i>Diomedea sanfordi</i> Murphy.	Chile.	Forty-fours.
<i>Diomedea longirostris</i> Mathews.	South Atlantic.	(Tierra del Fuego?).
<i>Diomedea melanophris</i> Temminick.	The Cape.	Falklands.
<i>Diomedea gilliana</i> Coues.	No locality.	Falklands.

<i>Species.</i>	<i>Designated Type Locality.</i>	<i>Designated Breeding Locality.</i>
<i>Diomedea richmondi</i> Mathews.	South America.	Ildefonso.
<i>Diomedea impavida</i> Mathews,	Tasmania.	Auckland Group.
<i>Diomedea bulleri</i> Rothschild.	New Zealand.	Snares.
<i>Diomedea chrysostoma</i> Forster.	Staten Island.	South Georgia.
<i>Diomedea alexanderi</i> Mathews.	West Australia.	Kerguelen.
<i>Diomedea culminata</i> Gould.	Southern Indian and Pacific Oceans.	Restricted to the Crozets.
<i>Diomedea chlororhynchos</i> Gmelin.	Cape Seas.	Tristan da Cunha (Gough Island).
<i>Diomedea carteri</i> Rothschild.	West Australia.	St. Pauls.
<i>Diomedea cauta</i> Gould.	Bass Strait.	Albatross Island and Mewstone.
<i>Diomedea salvini</i> Rothschild.	New Zealand.	Bounty Island.
<i>Diomedea atlantica</i> Mathews.	Off Buenos Aires	(Tierra del Fuego?).
<i>Diomedea palpebrata</i> Forster.	Prince Edward and Marion Island.	The Crozets.
<i>Diomedea huttoni</i> Mathews.	New Zealand.	Macquarie.
<i>Diomedea auduboni</i> Nichols and Murphy.	Oregon in error ;	Restricted to Macquarie Island.
<i>Diomedea fusca</i> Hilsenberg.	Mozambique	Tristan da Cunha. (Gough).
<i>Diomedea campbelli</i> Mathews.	Australian Seas.	(St. Pauls).
<i>Macronectes alba</i> Potts.	Foveaux Strait.	Antipodes.
<i>Macronectes dovei</i> Mathews.	Sydney.	Macquarie Island.
<i>Daption capensis</i> (Linnæus).	The Cape	Kerguelen.
<i>Daption australis</i> Mathews.	New Zealand.	Snares.
<i>Fulmarus (glacialoides)</i> Smith. <i>(antarcticus)</i> Smith.	Cape Seas 1824 Cape Seas	Queen Mary Land.
<i>Fulmarus antarcticus</i> Stephens.	1789 Antarctic Circle.	Queen Mary Land.

<i>Species.</i>	<i>Designated Type Locality.</i>	<i>Designated Breeding Locality.</i>
<i>Pagodroma nivea</i>	52°S. by 20°E.	Queen Mary Land.
Forster.		
<i>Bulweria brevirostris</i>	Designated Bourbon Island.	Where it breeds.
(Lesson).		
<i>Bulweria macroptera</i>	Cape Seas.	Tristan da Cunha
(Smith).		
<i>Bulweria gouldi</i>	New Zealand.	Mokohinau (and Island near by).
Hutton.		
<i>Bulweria lessoni</i>	52°S. by 85°W.	Falklands.
Garnot.		
<i>Bulweria australis</i>	Sydney.	Antipodes.
Mathews.		
<i>Bulweria hasitata</i>	Designated Guadeloupe.	Dominica.
Kuhl.		
<i>Bulweria incerta</i>	The Cape.	Tristan da Cunha.
Schlegel.		
<i>Bulweria rostrata</i>	Society Islands.	Tahiti.
Peale.		
<i>Bulweria alba</i>	Christmas Island.	Where it breeds.
Gmelin.		
<i>Bulweria magentae</i>	39°S. by 125°W.	(Dulcie Island?).
Giglioli and Salvadori.		
<i>Bulweria inexpectata</i>	South Seas	Preservation Island, New Zealand.
Forster.		
<i>Bulweria melanopus</i>	Designated Norfolk Island.	Now breeding Lord Howe.
Gmelin.		
<i>Bulweria lugens</i>	The Cape.	Kerguelen Island.
Kuhl.		
<i>Bulweria mollis</i>	South Atlantic.	Tristan da Cunha.
(Gould).		
<i>Bulweria deceptornis</i>	Indian Ocean.	St. Pauls and Amsterdam.
Mathews.		
<i>Bulweria brevipes</i>	Designated New Hebrides.	Where it breeds.
Peale.		
<i>Bulweria cærulea</i>	Southern Ocean.	Kuerguelen.
(Gmelin).		
<i>Pachyptila belcheri</i>	Victoria.	Falklands.
Mathews.		
<i>Procellaria æquinoctialis</i>	The Cape.	Falklands.
Linnæus.		
<i>Procellaria conspicillata</i>	Atlantic Ocean.	Tristan da Cunha.
Gould.		
<i>Procellaria cinera</i>	Antarctica.	Tristan da Cunha (Gough).
Gmelin.		
<i>Procellaria gravis</i>	off Newfoundland.	Tristan da Cunha.
(O'Reilly).		

<i>Species.</i>	<i>Designated Type Locality.</i>	<i>Designated Breeding Locality.</i>
<i>Procellaria diomedea</i> Scopoli.	Designated Tremiti Island.	Cyclades (Islands in Mediterranean)
<i>Procellaria borealis</i> Cory.	United States.	Azores (Madeira, Salvages and Canaries).
<i>Procellaria disputans</i> Mathews.	Kerguelen	(Kerguelen ?).
<i>Procellaria creatopus</i> Coues.	California.	Juan Fernandez.
<i>Procellaria leucomelas</i> Temminick.	Japan.	Oshima (Off Hokkaido Island).
<i>Procellaria elegans</i> Giglioli and Salvadori.	South Atlantic.	Tristan da Cunha. (Gough).
<i>Procellaria reinholdi</i> Mathews.	Cook Strait.	Stephen Island.
<i>Procellaria byroni</i> Mathews.	Byron Bay.	Off Wollongong.
<i>Hydrobates hornbyi</i> Gray.	South America	Taltal in Chile.
<i>Hydrobates owstoni</i> (Mathews & Iredale).	Japan.	Torishima (S. of Tokio).
<i>Cymodroma grallaria</i> (Vieillot).	Designated Juan Fernandez Group.	Where it breeds.

Notes on Eastern and Southern African Birds.

Captain C. H. B. GRANT and Mr. C. W. MACKWORTH-PRAED sent the following three notes :—

(1) On the Status of *Falco peregrinus brookei* Sharpe, Ann. Mag., Nat. Hist. 4, 11, p. 21, 1873 : Sardinia.

The main characters given are the smaller size and black sides of face. We have examined the type, an adult female, and other specimens. Size is certainly not a good character and we find that the amount of black and white on the sides of the face is most variable and is not constant geographically.

As so often happens in a race founded on inconstant characters the distribution gets wider and wider on individual specimens and a false picture is presented as to the breeding area and migrational movements. We consider that this race should not be recognised, but be placed as a synonym of *Falco peregrinus peregrinus* Tunstall.

(2) On *Mirafra passerina* Gyldenstolpe :—

In Ark. für Zool. 19, 1, p. 24, 1926, Gyldenstolpe has given a nom. nov. for *Mirafra fringillaris* auct., not *Alauda fringillaris* Sundevall, ÖFv. k. Sv. Vet. Akad, Förh, 7, 4, p. 99, 1850 : North of Drakensberg,

Transvaal, finding that *Mirafra fringillaris* auct. is *Botha fringillaris* (Sundevall).

This is a new specific name and not a nom. nov. The author has based it on Sharpe's description in P.Z.S. p. 649, 1874, Pl. 75, fig. I, and in so doing has automatically adopted the figure and the description and the specimens as given by Sharpe. Sharpe apparently had before him five specimens, four collected by Andersson in Damaraland, and one collected by Buckley in the Transvaal. Two of the Andersson birds were acquired by Tristram and are now in the Liverpool Museum, the other three are in the British Museum. There is also in the British Museum another Andersson specimen from the Shelley collection which apparently he did not have before him. One of the five birds Sharpe had before him must be the type and therefore Gyldenstolpe's type and type locality can have no standing.

We have carefully measured the five specimens and compared these with the measurements given by Sharpe in the original description and find that the nearest is a specimen from Damaraland collected by Andersson, Brit. Mus. Reg. No. 1876, 5.23.704, which has a length of 5.8, culmen from base 0.5, wing 3.2, tail from root, not from base of feathers 2.5, tarsus 0.9mm. We therefore select this specimen as the type of *Mirafra passerina* Gyldentolpe, and the type locality as Damaraland.

The reason for Sharpe quoting the colour of the bill, legs and eye from Buckley's specimen is because no other specimen had these recorded on the labels.

(3) On. No. 152 ! *Cuculus murinus* and No. 163 ? *Cuculus sulphuratus* Lichtenstein Cat. Rer. Nat. Rar, 1793, pp. 13 and 15, of the Willughby Society's Reprint, 1882.

Roberts used both the above names in Ann. Trans. Mus. 8, 4, p. 225, 1922; 10, 3, p. 162, 1924 and Bds. S. Afr. 1940, pp. 211-212, and the latter name in Ann. Trans. Mus. 16, 1, p. 150, 1935.

This author uses the former in place of *Coracina cæsia* (Lichtenstein) and the latter in place of *Campephaga flava* (Vieillot). We have very carefully read the descriptions and agree that :—

Campephaga sulphurata (Lichtenstein) Cat. Rer. Nat. Rar, p. 15, 1793 : south-eastern Cape Province, has priority over *Campephaga flava* (Vieillot) N. Dict. d'Hist. Nat. 10, p. 49, 1817 : South Africa, as the description agrees well with the female of this species. Lichtenstein only doubtfully places it in the genus *Cuculus* and considered it "more rightly to be a young Shrike" (Würger).

The *Cuculus murinus* is a somewhat different question, as there is no indication of locality and Lichtenstein's Catalogue includes birds from many parts of the world. Here again the author is not sure that the genus *Cuculus* is the right place for it.

We have spent some time in trying to fix the description on to one species, but have failed to see that it agrees only with *Coracina cæsia*.

We have placed the question before Dr. James L. Peters, who replies in a letter dated 17 November 1948, agreeing that *Cuculus sulphuratus* Licht. is a valid name and antedates *Campephaga flava* Vieillot, but that *Cuculus murinus* Licht. should be considered indeterminate as the description agrees equally well with *Coracina striata* (Boddaert). We therefore support Roberts in using *Campephaga sulphurata* (Lichtenstein) and agree with Peters that *Cuculus murinus* Lichtenstein, is indeterminate.

Notices.

STOCK OF THE BULLETIN.

It is proposed to reduce the stock of the 'Bulletin', but before this is done, members are given an opportunity to acquire parts at 2/6 each. Applications should be made to the Honorary Secretary. No reply will be sent if parts are not available. The following are out of print:— Volumes 1, 2, 3, 4 (except 1 copy each Pref. and part 28), 17, 18, 20, 22, 24, 26, 28, 30, 32 and 34. Part 113 and Pref. vol. 64.

Publication of the Bulletin.

As announced at the Annual General Meeting, the Editor is endeavouring, with the aid of the printers and publishers, Messrs. H. F. & G. Witherby, Ltd., to have the Bulletin, with the Meeting Card, in the hands of the Members one week before the next Meeting, as was the custom before the late war.

The only way in which this can be done is for Members who make a contribution at a Meeting to hand the MS. to the Editor at that Meeting. As the proofs will be corrected by the Editor it is essential that the MS. should be correct and either typed or written very clearly with scientific and place names in block letters. The first mention of a scientific name should be spelt out in full, i.e., genus, specific name, racial name (if any) and author. Any further mention of the same name need only have the initial letter of the genus and no further mention of the author.

If no MS. is handed to the Editor at the Meeting, a note will be inserted mentioning the contribution.

NEXT MEETING.

The next Meeting of the Club will take place on Wednesday, 19 January, 1949, at the Rembrandt Hotel, Thurloe Place, S.W.7. Dinner at 6.30 P.M.

BULLETIN
OF THE
BRITISH ORNITHOLOGISTS' CLUB.

Volume 69.

No. 4.

The four-hundred-and-eighty-second Meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, S.W.7, on Wednesday, 19th January, 1949, following a dinner at 6.30 P.M.

Chairman : Dr. J. M. HARRISON.

*Members present :—*Miss C. M. ACLAND ; Miss P. BARCLAY-SMITH ; Mrs. E. BARNES ; Dr. G. BEVEN ; Mrs. G. M. CHADWYCK-HEALEY ; R. P. DONALDSON ; W. E. GLEGG (*Hon. Secretary*) ; Miss C. E. GODMAN ; Miss E. M. GODMAN ; Capt. C. H. B. GRANT (*Editor*) ; Dr. J. G. HARRISON ; P. A. D. HOLLOW ; T. A. M. JACK ; Miss E. P. LEACH (*Hon. Treasurer*) ; Miss C. LONGFIELD ; J. D. MACDONALD ; C. W. MACKWORTH-PRAED ; Sir PHILIP MANSON-BAHR ; G. M. MATHEWS ; E. R. PARRINDER ; Lt.-Col. W. A. PAYN ; Miss G. M. RHODES ; MAJOR A. G. L. SLADEN (*Vice-Chairman*) ; Col. R. SPARROW ; Lt.-Commrdr. C. P. STAPLES ; B. W. TUCKER ; N. J. WADLEY ; C. N. WALTER ; A. WILLIAMS ; C. DE WORMS ; Col. O. E. WYNNE.

*Guests of the Club :—*B. HAGLUND ; Mrs. E. HAGLUND.

*Guests :—*DUKE OF BEDFORD ; R. CRASKE ; Dr. O. RICHARDS ; Mrs. D. B. SPARROW ; Mrs. L. L. STAPLES ; Dr. T. H. WORK.

Members, 32 ; Guests of the Club, 2 ; Guests, 6 ; Total, 40.

Further as to Colour Change without a Moult with particular reference to the Snow-Bunting. (*Plectrophenax nivalis nivalis* (Linnaeus)).

Lieut.-Commander C. P. STAPLES and Dr. J. G. HARRISON made the following remarks and showed slides and photographs :—

In continuing our investigations into colour change without a moult, we (J.G.H. and C.P.S.) have been studying the plumage changes in the cock Snow-Bunting (*Plectrophenax nivalis nivalis*). The Snow-Bunting is always cited as an exceptional example of colour change brought about by abrasive moult only.

As one of us (C.P.S.) stated in January last (Bulletin B.O.C., 68, No. 4, at page 86), Howard Saunders says in his "Manual of British Birds" ". in autumn the bird has the feathers of the upper-parts broadly edged with dull chestnut. In winter the chestnut margins gradually become white"

The "Handbook of British Birds" dismisses this complication by referring to the two types of feather edges as variants. The material parts of the description in the "Handbook" read as follows:—

"In winter plumage the mantle scapulars and back, black, almost concealed by long fringes *varying from tawny-buff to whitish-buff* Tail feathers, two central pairs black fringed *white or buff* next pair, black and white. Primaries black narrowly edged and tipped *white or buffish-white* In summer plumage. . . . abrasion of tips and fringes of feathers gradually causes remarkable change in colouration of upper-parts, whole crown and back of neck becoming pure white, mantle black, scapulars and inner secondaries black, tail and wing feathers, black and white."

There is thus no dispute that the bird when in summer plumage is black and white—just, black and white, but there is definite ambiguity as to its colouring at other times.

We arranged a representative collection of skins in monthly order—this series is here tonight for the inspection of members. We tried to show two specimens for each month other than August, but could only find one specimen for each of the months of September and July. The first illustration shows this series.

The first point we wish to make is that there is an obvious deepening in the shade of dark colouring in the tail feathers from September to April. It passes from brownish-black in autumn and winter to pure black in summer. This deepening is consistently progressive throughout the series.

The second point lies in the margins of the tail feathers. A few specimens have pure white margins before January, but the majority taken up to January have the margins broken with brown next the basic brownish-black of the main feather. There is no intervening strip of white to substantiate the claim that abrasion of the feather edges alone accounts for the white in the summer bird. April and May birds disclose that there is no brown in the margins of the tail—the margins then and subsequently are pure white.

The four specimens illustrated show what, we submit, is a clear example of colour change. The specimen on the extreme left (an October bird) has brown between the brownish-black and the white edge of the tail feathers, while the third specimen (a November bird) has brownish edges only. Both the March birds have pure white edges.

A third feature is the appearance in January to April birds of a strip of white on the secondaries between the brown fringes and the basic black of the main feather. While this is not a universal feature it never appears to be present in earlier birds. The coloured slide shows this well and also the colouring of the tail feather edges alluded to above.

The usual rebuttal that such features can be attributed to individual variations and that we are examining a skin at one stage of the year only, does not avail here, for the very important reason that the male Snow-Bunting invariably becomes black and white and nothing else in summer. This holds good for mature birds and birds in their first summer as well. Thus the question is, where did the white come from, or conversely, where did the brown and buff go to ?

Reverting to the first slide and examining the backs and mantles of the skins depicted, we find extensive colour change in the tips and fringes of the feathers, which amply corroborates the statement made by Howard Saunders.

From January onwards, white begins to replace chestnut on the tips and fringes of the mantle feathers and this white becomes more and more prominent through February, March and April when they become pure white. No September, October, November or December birds exhibit white in the mantle feathers. The next slide shows this well and is of skins in the Royal Scottish Museum. In November the fringes are dull chestnut or brownish-buff, in February they are whitish, some specimens whiter than others which retain ochreous tints in the barbs. By April the tips and fringes have become pure white. The following two colour slides show the changes of colour better than the black and white picture. It can be seen that there is a complete progressive change from chestnut to white and we have found this change to be consistent throughout all the specimens we have examined. The right hand (April) skin shows the triangle of black which is all that will remain when the tips have been cast. No specimen before January shows white and no specimens after January retains pure chestnut in the tips and fringes of the mantle feathers. This appears completely to rebut the "Handbook" description and we can only conclude that the birds were not arranged in chronological order when that description was prepared.

The Keeper of Natural History at the Royal Scottish Museum kindly loaned us his series which are depicted in colour in the next two slides. It is not such a representative series as those in the British Museum and contains several birds in dark first winter plumage but it is sufficiently representative to confirm the darkening of the basal colour of the tail, the clearing of the white edges to the tail feathers, the appearance of white on the secondaries of some January to April birds, and, in particular, the colour change in the tips and fringes of the mantle feathers. The second slide shows the birds against an orange background to accentuate the colours.

A study of these mantle feather tips discloses another interesting feature. The wear from September until April is comparatively slight and the filamentous barbs are substantially the same length in April as they were in September. September to April inclusive is eight months. Yet in the two months—May and June—the tips and fringes are completely lost, due, it is claimed to abrasion. Can this claim be accepted? Does mere abrasion through the wearing away factors of the bird's habitat account for this? If this were so, why is not the shortening of the tips an equally progressive one over the whole ten months or more

accurately would not the wear in such circumstances be a progressively diminishing one? Quite frankly, we doubt this claim and can only reconcile the change in colour of the tips and their rapid deterioration and final loss with some physiological factor rather than the result of external agencies. The change in colour suggests that the tips have become deprived of some nutriment from January onwards. They become dry and appear to be lacking in natural oil which is assisted by their open structure and the absence of adhering barbules. Thus they would tend to bleach and reversion of pigment would be inclined to occur and they would finally dry out, become friable, and drop off. This is what one of us (C.P.S.) previously described as a desquamation process (*antea* page 85) and would appear to be the only logical conclusion. Whatever the root cause, there is a definite colour change in these tips and fringes.

This conception of abrasive moult, namely a subtractive moult caused by a break or inhibition in the flow of natural oil to the tips raises some very important questions which we are following up by the examination of other species. We are particularly interested in those where this form of rapid abrasive moult is the means of disclosing secondary sexual characteristics at the breeding season and appear to occur with the same comparative suddenness as is the case with the cock Snow-Bunting. We find, for instance, that the cock Brambling confirms our suggestion.

We make no apology for thus returning to our claim that it is the oil in a feather that is the deciding factor in any colour change. It has been frequently stated that a definitive feather is very resistant to chemical action and that its pigments are effectively isolated in the hard, more or less solid, cornified structure of the cortex. Such being the case one naturally assumes that the commercial dyeing and bleaching of feathers must be a complicated process. Actually it is not. The removal of the feather's natural oil is the secret of success. Once the oil is removed the feather is no longer resistant to quite ordinary dyes and bleaches.

The commercial dyer merely washes the feathers in soap and water to rid them of grease and oil and then employs cheap aniline dyes obtainable from Woolworths or the local chemist. He also bleaches oil-free feathers with the usual mixture of hydrogen peroxide and ammonia. If you like to experiment by cleaning feathers in acetone—which dissolves fats and oils—you can then dye them quite readily in cold Drummer, Tintex or Dolly dyes. Similarly you can bleach them in hydrogen peroxide (20 vols.) and ammonia.

In the course of bleaching, a brown feather will first "fox" to a reddish-brown before becoming lighter just in the same manner as the skins of some Robins and Song Thrushes "fox." It seems to us that this may provide a clue to the problem of "foxing" and we would suggest that those skins which exhibit post-mortem colour changes are those, which, for some reason or other, have been deprived of their natural oils. This may have come about through the cleaning of the feathers during the preparation of the skin or the bird might actually have been in poor condition at the time of its death. The effect of the various "anti-moth" substances which

are used in the cabinets must also be considered in case they have any effect on the feather oil. So far as we are aware, "foxing" does not occur in those birds whose plumage is rich in natural oils, such as the Ducks.

We claim therefore that the cock Snow-Bunting exhibits colour change without a moult particularly in the case of the tips and fringes to its back and mantle feathers ; that the so-called abrasion of these feathers is not solely the result of environmental wear ; and that this form of abrasive moult in other birds must be reconsidered in the light of modern knowledge of the limitations in feather resistance to change and the effect on a bird by hormonic secretions. We also venture to suggest that the description of the Snow-Bunting in the "Handbook" calls for revision.

We would like to tender our thanks to the authorities of the British and Royal Scottish Museums for kindly making skins available for study and photography.

Enlarged photographs and the series of skins from the British Museum depicted therein are available here for the inspection of members and Dr. Jeffery Harrison will be pleased to point out the various features we have alluded to in this joint paper.

Mr. J. D. Macdonald, Mr. B. W. Tucker and the Duke of Bedford entered into the discussion which followed.

Reversionary Trends in Birds.

Dr. J. M. HARRISON made the following remarks and showed slides :—

At the last Annual General Meeting of the Club, a wish was expressed for a talk on some subject which would stimulate discussion. I am therefore addressing you tonight on a topic which is at once both speculative and controversial.

If I am about to be accused of flogging an old horse, at least I may claim to be flogging it with some new lashes.

Reversion to ancestral type, or atavism, a term which has gone into disrepute, is no new idea, and I hope I am about to show you some highly suggestive specimens and slides of avian material in support of this theory.

Before considering this material, we may well ask if there are any instances of this phenomenon outside ornithology. The answer is—yes, such are known to occur even in the human subject. I will briefly mention one or two conditions which may be regarded as of this nature.

Firstly, the occasional presence of supernumerary nipples. Again the branchial clefts of early foetal existence are to be regarded in the same light, while the entepicondylar process of the humerus, a structure referred to by Darwin (*Descent of Man*, p. 17 *et seq.*) is particularly significant. This structure occurs as a normal one in many of the reptiles, in the monotremata, and in the rodents and insectivores. By some authorities, congenitally defective hearts are similarly regarded.

The branchial clefts already referred to represent a developmental phase of a reversionary order, transient and evanescent ; the entepicondylar process, however, represents a structure reproduced and retained,

since it has developed in bone, indicating a stage in man's evolution of great antiquity and significance.

W. E. Le Gros Clark (*Early Forerunners of Man*, 1934, p. 13) refers to the appearance as occasional "atavisms" in man of functional muscles, found normally in the lower mammalia, and usually, if present at all in the human, then only as mere vestiges.

Reversion has been defined as a return in greater or lesser degree to an ancestral type.

How can this come about?

Huxley (*Evolution*, 1942, p. 21) states that "reversions," "atavisms" and "sports" result from the recombination of old genes. This view was also held by the late Dr. P. R. Lowe (*Ibis: Colouration as a Factor in Family and General Differentiation*, 1915, pp. 320-346), when he says that colour pattern is not a superficial effect, but that it depends upon the genes—it is heritable, and that it is a deep-lying phenomenon, constant and fundamental; in other words, that colour pattern is an ancestral character.

The same author also stressed the very important fact that it was in the juveniles and females that phylogenetic trends could best be studied.

Again, Hingston (*The Meaning of Animal Colour and Adornment*, 1933, p. 392), in referring to reversion, states that a potent cause is the crossing of different races. Needless to say, this brings about the recombination of old genes as indicated by Huxley (*loc. cit.*).

How are these opinions reconcilable with the so-called Dollo's Law, i.e., with the concept of irreversibility of evolution? This law postulates that if an organ has once been lost in evolution, it cannot be redeveloped; or, if its function has been lost, it cannot be regained (Mayr, *Systematics and the Origin of Species*, 1942, p. 295).

As Mayr (*loc. cit.*) points out, Dollo never made such an exaggerated claim, and that the law must only be taken as a broad generalisation.

I would stress that the reverisionary trends in birds, which I am showing you tonight, are transient, and occur in the juvenile and subadult individuals. This is certainly so in such specimens as I myself have prepared.

As we have seen, the branchial clefts of the early human embryo may be regarded as evidence of an evolutionary stage in man's development, which disappear during foetal life. When persisting into childhood, these give rise to the so-called branchial cysts and fistulae.

Similarly, reverisionary trends in birds, as evidenced by pattern, disappear in the adult stage.

I would postulate, therefore, that any racial character which is found as a constant in a geographical race of a species, when appearing in other geographical races, or in a distinct species, to which such character is foreign is to be regarded as an atavistic, or reverisionary expression.

I will now show you some slides of aberrations of pattern in birds, which appear to me highly suggestive.

Some of these specimens have already been exhibited at previous meetings of the Club, but I have thought that you would perhaps like to see them again, so they are here for your inspection tonight.

You will see in the first slide two Robins (*Erithacus rubecula* (Linnæus)) on the left with a very strikingly abnormal pattern of breast. This type of variety has been found in Kent, Lancashire and Yorkshire (Bull. B.O.C., 1946, p. 46, p. 69; Brit. Bds., 39, p. 281, 40, p. 179). In the centre is a normal Robin for comparison, and on the right is a pair of the Asiatic species, *Luscinia akahige* (Temminck). You will note how very similar is the abnormal breast pattern of the aberrant birds with the Asiatic species.

These birds show a high degree of suggestive similarity—parallelism in evolution.

My second slide shows four Teal (*Anas crecca crecca* (Linnæus)) with three varieties (Bull. B.O.C., 1946, p. 24, p. 32).

The two centrally placed birds show the most usual type of aberration, in which a white patch occurs in that region of the neck where, in the Mallard (*Anas platyrhynchos* (Linnæus)), a white collar develops. It is to be noted that this feature is also sometimes found in the Gadwall (*Anas strepera* (Linnæus)); all these three species of duck show a marked degree of similarity structurally.

On the left is a juvenile of strikingly unusual type ; it will be noticed that practically the whole of the under surface is heavily spotted, instead of just being spotted in the pectoral region. It is shown to indicate a tendency to revert to the primitive type of plumage generally, which was believed to be largely spotted or streaked in most species of birds.

The bird on the extreme left is an altogether unusual variety ; you will see that it has a very curious facial pattern, which, again, superficially resembles that of the Baikal Teal (*Anas formosa* (Georgi)).

The rough sketch of the heads of the two species shown in the third slide demonstrates this more clearly.

I will now show you a fourth slide of two British killed Mallard (*Anas platyrhynchos*). They are both young drakes. The bird on the left, you will observe, shows on its breast shield the dark blue-black spots, which are so characteristic of the Greenland race (*Anas p. conboschas* (Brehm)). It is not, of course, an example of that form, but a reversion to it.

I believe that my next and fifth slide, that of two Jays (*Garrulus glandarius glandarius* (Linnæus)) will interest you greatly. On the right is a normal bird of the nominate race, while on the left is a specimen from Dürrenroth, in Switzerland (Bull. B.O.C., 1923, 44, p. 98), which presents the following striking peculiarities :—

(1) It is a so-called "hairy" albescent, i.e., the contour feathers lack the interlocking hooklets on the barbules. Its plumage is consequently loose and soft. The feathers of the Asiatic form (*Garrulus g. brandti* (Eversmann)) is somewhat of this texture.

This type of aberration is also known in the Water-hen (*Gallinula chloropus* (Linnaeus)), and it is possible that the condition represents a very primitive type of feathering.

(2) You will also notice the peculiar sickle-shaped primaries, and remark how different they are from those of the normal bird.

Can we read any meaning into all this, or shall we rest content that it is just fortuitous, without any biological significance?

You need search no further than the genus *Pica* for a similar sickle-shaped first primary. It seems almost as though this feather in the Magpie had undergone an evolutionary halt. You will notice that in the aberrant Jay, several primaries are thus attenuated.

This state of affairs strongly suggests that this specimen shows us a condition, both of its contour feathers and of its primaries, of reversion to a primitive state, in which the feathers were almost certainly less complex structurally, as one would indeed expect.

That this looseness of feather structure has been found in another species, viz.:—the Waterhen, is further evidence of the probability that this character is of very great age.

In order to show you the very close structural similarity in the primaries of this Jay, and the first primary in the Magpie, I have prepared a sketch, which I will now show you.

It seems highly probable from this that *Pica* antedates *Garrulus* in phylogenetic age.

I would like you now to note another pattern character, which I have recently discovered in *Garrulus*, and to which I would attach phylogenetic importance.

In slide seven you will see three Jays.

On the right is an example of one of the black-capped group *G. g. cervicalis* Bonaparte; on the left, a first-winter *Garrulus g. rufitergum* (Hartert); and in the centre a full juvenile of that form obtained in Kent last summer.

The point I wish to bring to your notice in the centre bird is one which I have recently found in a definite percentage of young Jays obtained in this country.

You will see that this specimen shows in outline a dark cap, a feature which, to my mind, suggests a reversion towards the *G. atricapillus*-*G. cervicalis* association.

This feature is not found in adult Jays of the nominate and closely allied races, and I think we may assume a reversion towards the North African and Asia Minor Birds.

I have left until last the case of the Great Spotted Woodpecker, the *Dendrocopos major* group association, for in them we find some very striking evidence in support of this hypothesis.

Slide eight depicts on the right two specimens of the Tunisian form, *D. m. numidus* (Malherbe), and on the left an example of *D. m. pinetorum*

(Brehm) from Central Europe, showing what is certainly the commonest reversionary trend in this group, viz.:—a red crop band.

This character will be found to occur in every described race of the species throughout its range. It occurs in the juveniles and subadult birds.

Now, in what race do we find this character, both in the juveniles and in the adults? In *D. m. numidus*.

In which races do we find this character as of frequent occurrence? It is most frequent in the races inhabiting the southern shores of the Mediterranean basin, i.e., in the west in the Iberian peninsula in *D. m. hispanus* (Schluter), then eastwards on the African littoral in *D. m. mauritanus* (Brehm), in *D. m. numidus*, and in the east in Asia Minor in *D. syriacus syriacus* (Hemprich and Ehrenberg), and in the extreme south-east of Europe in *D. g. balcanicus* (Gengler and Stresemann). So we have a group of races geographically closely related, showing this as a frequent character, with one race (or species) which possesses it as a constant in all stages of plumage.

I will now show you another example of a reversionary trend in the genus *Dendrocopos*:

In the ninth slide you will see two juveniles of the British race *D. m. anglicus* (Hartert), and two examples of *D. m. leucopterus* (Salvadori) an Asiatic form.

This latter bird is characterised by a great reduction of the phaeomelamine in its primaries, which consequently show sinuous white outer vanes, instead of the black and white spots; this pattern is characteristic at all ages.

You will see that in the two juveniles of the British form this feature is reproduced. Both these specimens also show a very pale pink colour in the crop region, thus exhibiting two reversionary trends.

I have made a rough sketch of these wings to show you more clearly this aberration.

The conclusion that the wing pattern is a reversion is inescapable.

Slide eleven is equally interesting. It shows three Great Spotted Woodpeckers; on the left, you will see an example of the Syrian Great Spotted Woodpecker, *D. syriacus balcanicus*, a female obtained in Bulgaria; next to this are two juveniles of the British race.

I would invite your close attention to these two birds; they are both from the same brood, and were obtained in Kent.

You will note that in one there is the normal pattern of the white of the ear coverts and the neck, sharply divided by a vertical black post-auricular stripe, the characteristic pattern of *D. m. major* and all its races, whereas in the other the white of the ear coverts and the neck is continuous, the pattern diagnostic of *D. s. syriacus* and its forms.

This you can see is exactly the character of the Syrian Spotted Woodpecker in all stages of plumage.

Now I would like to give you the views of previous authorities, who have gone into the phylogenetic affinities of this group.

Professor Stresemann (*Avifauna Macedonica*, 1920, pp. 206, 207) writes :—“As primitive characters of the group association—*Dendrocopos major*, may be considered the broad streaking of the flanks and the transverse barring of the tibial feathers, a character which, in *D. s. syriacus*, is found in the juvenile and adult birds, but in the *D. m. major* group only in the juvenile dress. The ancestral type of the *major* group showed accordingly a red band in the crop region, barred tibial feathering, striped flanks, possibly black and white banded tail as in *D. m. major*. Probably the group also possessed a red, instead of a black, crown of head, the only possible explanation of the scarlet crown found in the juveniles.” This is a very lucid statement.

Voous, in his masterly monograph on the group (On the History of the Distribution of the Genus *Dendrocopos*, 1947, pp. 34, 35) writes :—“Relicts of *numidus* character which may be called ‘atavisms’ are found throughout the whole European range ; red tip to a greater or smaller amount of breast feathers occur more frequently than is usually thought.”

Hachisuka (Variations amongst Birds, 1928, pp. 43-47) devotes a chapter to this subject, unblushingly headed Atavism. He refers particularly to the aberrations of the Capercaillie, which Professor Eina Lönnberg described and named *Tetraourogallus lugens* in the *Ibis* (*Ibis*, 1906, pp. 317-326). These small, dark birds Lönnberg referred to as “sports” or “mutations” of an atavistic nature.

The excessively inter-crossed races of the Pheasant, *Phasianus colchicus* (Linnaeus), provide us with further examples, e.g., individuals indistinguishable from *P. c. satscheuensis* Pleske, while the close similarity of the Japanese *P. versicolor* (Vieillot), and the melanistic mutant *P. c. tenebrosus* Hachisuka, provides another suggestive instance.

How has all this come about ?

The map shown is one of the accepted representations of Europe in the third glaciation period, the so-called Riss Period, when the ice was at its maximum. One can visualise the condensation of bird-life at this epoch ; how northern and eastern species were crowded together into the Mediterranean basin and into an area already supporting its own populations as a result of the ice-fields covering so much of their territory.

It may well be assumed that the area available to support life was of even less extent than the map would lead one to suppose.

That these circumstances favoured a considerable promiscuity may also be assumed. This, of course, resulting in an exchange of genes, to be later redistributed by their possessors over the whole range of the species, when, with the retreat of the ice, repopulation of the areas formerly vacated became possible once again.

Characters thus acquired would become recessive, and tend to reappear in individuals here and there throughout the range of the species, with a resulting reversion towards any one of the ancestral types from characters inherited during the period of segregation and an interchange of genes.

Only on some such hypothesis is it possible to explain the incidence of an individual showing, for instance, a character constant in a race

inhabiting Asia Minor, or elsewhere, in the form found in the British Isles, some 3,000 miles away !

Modern writers are very naïve about the word atavism, which is invariably put into inverted commas ; they are, however, less shy of the term reversion, which seems to me the splitting of a very fine hair.

In this same slide, you will see in the Table, which is from Voous's Monograph (*loc. cit.*), that *D. medius* (Linnæus) is accorded a greater antiquity than the *D. major* group. In this I fully agree, for, as you all know, the red crown is a character of the adult of *D. medius*. One may from this infer that the *D. major* group are a later evolutionary divergence from that ancestral stock.

There can be no doubt that the *D. m. numidus*-*D. s. syriacus* association are next in age, and the oldest of the *D. major* group. By some authorities these two are considered to have reached specific status.

Voous (*loc. cit.*) emphasises a close analogy between the group-association of *D. major* in the south with that of the Jays of North Africa and Asia Minor, as both belonging to the third glacial period, and we have, indeed, tonight seen the highly suggestive variety of the Jay, which presented a pattern of head peculiar to the North African and Asia Minor birds.

If you now look at the slide which shows what the geologists believed Europe to be like in early post-glacial times when the British Isles formed part of the continental mainland, we are forced to conclude that the state of affairs at that remote time further favoured an interchange of genes. Upon this map, I have drawn arrows showing the probable lines of dispersal of the forms of the Great Spotted Woodpecker.

This shows a northward infiltration of southern forms, and a westerly movement of eastern birds. These are the movements which Voous believes to have taken place.

Upon these fundamental geological phenomena, then, depends, in my opinion, the interesting reverisionary expressions I have shown you tonight.

Upon these same influences one can explain the very close similarity of many of our British forms to those of the adjacent continent, and also the undoubted intermediacy, which can be recognised in a number of the common species in both areas.

In conclusion, I want to lay great stress on the fact that these reverisionary trends occur in juveniles and subadults in birds—they are not characters regained, but merely evanescent characters, reflecting in a transient manner the evolution of the group repeating itself in a stage of the development of an individual here and there, just as the branchial clefts, referred to at the commencement of my address, reflect an evolutionary stage in the development of man.

The individual must perish, for flesh is mortal, and it is only the germ-cells, with their chromosomes and the genes which bear the hereditary characters, that are immortal, perpetuating life's inheritance down through the ages from generation to generation, to provide us with an

occasional faint clue, in an individual here and there, of the paths they have traversed in acquiring the characters as known to us in our present times.

Notices

STOCK OF THE "BULLETIN."

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Please note the Hon. Secretary's address :

W. E. Glegg, Esq., Zoological Museum, Tring, Herts.

Publication of the "Bulletin."

As announced at the Annual General Meeting, the Editor is endeavouring, with the aid of the printers and publishers, Messrs. H. F. & G. Witherby, Ltd., to have the "Bulletin," with the Meeting Card, in the hands of the Members one week before the next Meeting, as was the custom before the late war.

The only way in which this can be done is for Members who make a contribution at a Meeting to hand the MS. to the Editor at that Meeting. As the proofs will be corrected by the Editor it is essential that the MS. should be correct and either typed or written very clearly with scientific and place names in block letters. The first mention of a scientific name should be spelt out in full, i.e., genus, specific name, racial name (if any) and author. Any further mention of the same name need only have the initial letter of the genus and no further mention of the author.

If no MS. is handed to the Editor at the Meeting, a note will be inserted mentioning the contribution.

NEXT MEETING.

The next Meeting of the Club will take place on Wednesday, 16th February, 1949, at the Rembrandt Hotel, Thurloe Place, S.W.7. Dinner at 6.30 p.m.

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

Volume 69.

No. 5.

The four-hundred-and-eighty-third Meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, S.W.7, on Wednesday, 16th February, 1949, following a dinner at 6.30 P.M.

Chairman : Dr. J. M. HARRISON.

Members present :—Miss C. M. ACLAND ; Miss P. BARCLAY-SMITH ; Mrs. E. BARNES ; F. J. F. BARRINGTON ; Miss S. V. BENSON ; Mrs. G. M. CHADWYCK-HEALEY ; W. E. GLEGG (*Hon. Secretary*) ; Capt. C. H. B. GRANT (*Editor*) ; R. E. HEATH ; Miss E. P. LEACH (*Hon. Treasurer*) ; Miss C. LONGFIELD ; C. W. MACKWORTH-PRAED ; Sir PHILIP MANSON-BAHR ; E. M. NICHOLSON ; E. R. PARRINDER ; Lt.-Col. W. A. PAYN ; Dr. W. A. RICHARDS ; Dr. W. SERLE ; D. SETH-SMITH ; Lt.-Commdr. C. P. STAPLES ; Dr. A. LANDSBOROUGH THOMSON ; R. WAGSTAFFE ; C. N. WALTER ; Surgeon-Captain P. R. WESTALL ; A. WILLIAMS ; C. DE WORMS ; Col. O. E. WYNNE.

Guest of the Club :—Dr. T. H. WORK.

Guests :—Major H. A. BIRKBECK ; H. H. BUISMAN ; Miss S. A. CIST ; G. S. HARRIS ; Mrs. W. A. RICHARDS ; Mrs. D. SETH-SMITH ; Mrs. A. L. THOMSON ; A. TYNAN ; Mrs. A. WILLIAMS ; C. G. YOUNG.

Members, 28 ; Guest of the Club, 1 ; Guests, 10 ; Total, 39.

Bits of Land along the Coast.

Dr. T. H. WORK, representing the National Audubon Society and a member of the American Ornithologist's Union and Cooper Ornithological Club, showed a coloured motion picture of the coast and islands of California and their bird-life. This was a very excellent film and Dr. Work's running commentary greatly added to the interest of his beautiful pictures.

First occurrence of the Red-flanked Bluetail (*Tarsiger cyanurus cyanurus* (Pallas)) in Britain.

Mr. W. E. GLEGG exhibited this specimen and remarked :—

I exhibit on behalf of Mr. S. Bruce of Lerwick, the first British specimen of the Red-flanked Bluetail. The specimen was obtained by Mr. Bruce on Whalsay, Shetland on 7th October, 1947. The sex has not been determined. The habitat of the species is not too well known but it ranges from East Europe through Asia. This occurrence adds a new genus to the British List. As the record has been fully dealt with in "The Scottish Naturalist," vol. 60, p. 6, 1948, accompanied by an excellent coloured illustration, there is no need to add more. There is an interesting sequel to this, for it is reported in "The Field," vol. 191, p. 609, 1948, that two of this species were observed at Skaill, Orkney, on 2nd May, 1948. The identification appears to be satisfactory.

First occurrence of Bonelli's Warbler (*Phylloscopus bonelli* (Vieillot)) in Britain.

Mr. R. WAGSTAFFE exhibited the specimen obtained on Skokholm Island by Mr. Peter Condor.

Notes on East African Birds.

Captain C. H. B. GRANT and Mr. C. W. MACKWORTH-PRAED sent the following note :—

On a new race of *Apalis* :—

In the "Bull. B.O.C." 68, p. 8, 1947, we described *Apalis melanocephala songaeensis*. On further examination, we have come to the conclusion that this should be placed as a synonym of *Apalis melanocephalus muhluensis* Grant and Praed, "Bull. B.O.C." 67, p. 43, 1946, the range of which is now from the Songea district, to the Mahenge district, southern Tanganyika Territory.

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BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

Volume 69.

No. 6.

The four-hundred-and-eighty-fourth Meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, S.W.7, on Wednesday, 16th March, 1949, following a dinner at 6.30 P.M.

Chairman : Dr. J. M. HARRISON.

Members present :—Miss C. M. ACLAND ; Miss P. BARCLAY-SMITH ; F. J. F. BARRINGTON ; Mrs. G. M. CHADWYCK-HEALEY ; W. E. GLEGG (*Hon. Secretary*) ; Capt. C. H. B. GRANT (*Editor*) ; Mrs. B. P. HALL ; Dr. J. G. HARRISON ; Miss E. P. LEACH (*Hon. Treasurer*) ; J. D. MACDONALD ; C. W. MACKWORTH-PRAED ; Lt.-Col. W. A. PAYN ; Miss G. M. RHODES ; Dr. W. SERLE ; Major A. G. L. SLADEN (*Vice-Chairman*) ; Lt.-Commrdr. C. P. STAPLES ; Dr. A. LANDSBOROUGH THOMSON ; B. W. TUCKER ; N. J. WADLEY ; C. N. WALTER ; C. de WORMS ; Col. O. E. WYNNE.

Guests :—Professor S. HÖRSTADIUS ; W. H. PAYN ; Mrs. B. W. TUCKER.
Members, 23 ; Guests, 3 ; Total, 26.

A hybrid Teal and Shoveler.

Mr. W. H. PAYN exhibited the specimen and made the following remarks :—

I am exhibiting what I believe to be a unique bird—a hybrid Common Teal *Anas crecca* (Linnaeus) Shoveler *Spatula clypeata* (Linnaeus). The existence of this bird is one of the accidents of war. On the outbreak of the late war I had at my home in Suffolk a number of waterfowl. These were gradually reduced by casualties until only a drake teal and a shoveler duck were left, and they of course became inseparable. In 1941 they were thought to have nested though no eggs were found. In 1942 the duck laid two eggs. These were picked up and put under a Bantam and, much to everyone's surprise, proved to be fertile. The two ducklings hatched safely and were reared to maturity. The credit for this achievement must go entirely to my Mother who looked after them. Both birds assumed drakes plumage ; one being unfortunately killed and eaten by a dog. The other bird lived until 1945 when it died and was preserved. I have said that I think this bird is unique. Mr. Hopkinson who has kept records of hybrid duck for many years has never heard of another, nor has

the Hon. Secretary of the Avicultural Society, although the latter has kindly drawn my attention to a record by Leverkühn on the authority of Macpherson in the J.f.O., 1890. This bird apparently was wild. I can find no American records of a similar hybrid. Before I pass round the specimen, along with Common Teal and Shoveler ducks for comparison, I should like to draw your attention to the remarkable mixture of the colouring of both parents which my specimen displays. The bill is longer and more spatulate than that of the Teal—less so than the Shoveler. The head exhibits much of the green of the Shoveler with the brown poll of the Teal, while the Teal's 'bridle' has become distorted to appear on the hybrid's cheeks as two irregular white 'windows' framed in black. The chest displays the maroon belly-colour of the Shoveler, with the Teal's black spots superimposed. The underparts and flanks are pure Teal. On the back the hybrid is more Teal than Shoveler, being ashy-grey with black pencilling. The scapulars resemble the Shoveler's but lack the blue and white. The wing combines the characteristics of both parents, the slate blue of the Shoveler's shoulders and the bright green and black of the Teal's.

In conclusion I should like to remark that a reproduction in 'Nichol's Birds of Egypt' of a supposedly wild hybrid between a Teal and a Pintail displays a very similar pair of 'windows' on the cheeks, to those shown by my specimen. This point calls for further study. Do hybrid duck, in which one parent is a Teal, always display these 'windows'?

Dr. J. M. HARRISON and Major A. G. L. SLADEN made remarks on this specimen and other hybrid ducks.

A new Genus and Species of Babbler and New Races of a Wood-Hoopoe, Swift, Barbet, Robin-Chat, Scrub-Warbblers and Apalis from West Africa.

Dr. W. SERLE exhibited and described the following:—

KUPEORNIS, new genus.

Description.—Similar to *Phyllanthus* Lesson, but bill smaller, weaker, relatively broader at the base and less compressed laterally. Nostrils more slit-like (as in *Turdoides Cretzschmar*) ; feet more slender ; otherwise in general shape and proportions about the same.

Frequents the high trees and occasionally the undershrubs of the primary forest, associating with others of its kind in small vocal parties.

GENOTYPE.—KUPEORNIS GILBERTI, new species.

Description.—Forehead and crown dark chestnut, becoming paler on the nape. Lores, cheeks, ear coverts, and a narrow supercilium white, lightly washed with rust. Mantle, back and scapulars olive-brown washed with fulvous, becoming rusty-brown on the rump and upper tail coverts. Wings and tail blackish-brown, the secondaries and inner primaries washed on the outer web with fulvous and the rectrices fringed on the outer web with rusty-brown. Chin and throat pure white sharply demarcated from the breast which with the under wing coverts, belly, flanks, and thighs is rufous-brown. Under tail coverts rusty-brown.

Distribution.—Only known from the primary forests of Kupé Mountain, British Cameroons at an altitude of 5,000 to 6,000 feet.

Type.—In the British Museum. Adult male. Kupé Mountain 4° 50'N, 9° 40'E, at altitude of 5,000 feet, Kumba Division, British Cameroons. 10 April, 1948. Collected by Dr. William Serle. Collector's No. C.1905. Brit. Mus. Reg. No. 1949, 14, 1.

Measurements of type.—Wing 111, culmen from base of feathers 18, tail 70, tarsus 32mm.

Soft parts.—Iris greyish-white; feet greenish-grey; bill brownish above, dirty white below.

Remarks.—The new form was compared with the British Museum material by myself and with the American Natural History Museum material by M. Jean Delacour to whom I am greatly indebted. The latter points out its relationship in colour pattern and structure to *Lioptilornis rufocinctus* (Rothschild), a species not represented in the British Museum. *Kupeornis gilberti* is certainly not closely related to *Lioptilornis nigricapillus* (Vieillot) the genotype of *Lioptilornis*, and *Lioptilornis rufocinctus* should perhaps be transferred from *Lioptilornis* to *Kupeornis*.

An immature male in the series has the white throat and ear coverts sparsely spotted with brown, the underparts more rufous than in the adult, and the outer web of the secondaries and the inner primaries and the wing coverts washed with rufous.

Measurements of one other male and four females from the type locality.—*Male.*—Wing 106, tail 76, tarsus 32, bill 17. *Females.*—Wings 111, 115, 117, 117; tails 74, 77, 79, 76; tarsi 31, 34, 33, 33; bills 16, 17, 17, 17mm.

In the field the new form recalls in its actions, loud calls and close gregariousness *Phyllanthus atripennis atripennis* (Swainson) and certain *Turdoides* species. It is mainly arboreal moving actively about the branches with long hops and occasional short flights.

Named after my indispensable African skinner Gilbert Nkwocha.

PHœNICULUS BOLLEI OKUENSIS, new race.

Description.—Distinguished from *Phœniculus bollei bollei* (Hartlaub) and *Phœniculus bollei jacksoni* (Sharpe) by the greatly reduced amount of white on the head, the white area being restricted above to the forehead and forepart of the crown and below to the chin and forepart of the throat. The ear coverts, sides of the face and a narrow supercilium are dark metallic green. Further distinguished from *P. b. bollei* by the bluish purple rather than coppery lesser wing coverts and the absence of purplish gloss on the inner secondaries.

Distribution.—Only known from the montane forest of Lake Oku, altitude 7,000 feet, in the Bamenda Division of British Cameroons.

Type.—In the British Museum. Adult male, Lake Oku, 6° 10'N, 10° 25'E, Bamenda Division, British Cameroons. 15 October, 1948. Collected by Dr. William Serle. Collector's No. C.2779. Brit. Mus. Reg. No. 1949, 14, 2.

Measurements of type.—Wing 134, culmen 49, tail 177, tarsus 19mm.

Soft parts.—Iris brown, eyelids pink, bill and feet red.

Remarks.—One of a noisy party in the tree tops in the primary forest bordering the crater lake at Oku.

The measurements in mms. of two other males and two females of this new form all obtained at Oku are :—

	<i>Males.</i>	<i>Females.</i>
Wing	... 131, 128	118, 122
Culmen	... 46, 47	40, 35
Tail	... 166, 178	171, 182
Tarsus	... 20, 20	21, 19

APUS AÉQUATORIALIS BAMENDÆ, new race.

Description.—Similar to *Apus aequatorialis aequatorialis* (Muller) but general colour of the upper and underparts blackish-brown, several shades darker than *A. a. aequatorialis* and similar in shade to *Apus aequatorialis lowei* Bannerman. From *A. a. lowei* and *Apus aequatorialis furensis* Lynes it is distinguished by the absence of white on the lower breast and belly.

Distribution.—Bamenda, British Cameroons.

Type.—In the British Museum. Adult female, Bamenda, 5° 55'N, 10° 10' E, altitude 5,000 feet, British Cameroons, 8 July, 1948. Collected by Dr. William Serle. Collector's number C.2395. Brit. Mus. Reg. No. 1949. 14. 3.

Measurements of type.—Wing 201, culmen 10, tail 92, tarsus 15mm.

Soft parts.—Iris dark brown, bill black, feet blackish.

Remarks.—These Swifts frequented the escarpment at Bamenda and the cliffs in the neighbouring hills within a radius of twenty miles. The sexes are similar. Measurements of three other adult birds obtained at the type locality:—

	<i>Male.</i>	<i>Females.</i>
Wing	... 201	203, 197
Culmen	... 10	10, 10
Tail	... 90	90, 85
Tarsus	... 14	16, 13

BUCCANODON DUCHAILLUI BANNERMANI, new race.

Description.—Similar to *Buccanodon duchaillui duchaillui* (Cassin) but differs in its larger size.

Distribution.—The Highlands of the Bamenda Division, British Cameroons.

Type.—In the British Museum. Adult Male, Bamenda 5° 55'N, 10° 10'E., altitude 4,500 feet, British Cameroons. 7 July, 1948. Collected by Dr. William Serle. Collector's No. C.2371. Brit. Mus. Reg. No. 1949. 14. 4.

Measurements of type.—Wing 87, culmen 15, tail 50, tarsus 21mm.

Remarks.—Measurements of the eight other birds, all adults, of this form collected in the highlands of the Bamenda Division between 4,000 and 6,000 feet. (Sexes about the same):—

Wing ...	80, 83, 84, 84, 85, 85, 86, 86 mm.
Culmen	17, 13, 16, 16, 17, 15, 16, 15 "
Tail ...	45, 47, 45, 48, 45, 48, 47, 48 "
Tarsus	21, 20, 23, 22, 21, 21, 21, 22 "

Measurements of the eight adult birds of this form collected in the low-lying southern part of British Cameroons in the Kumba Division between 500 and 1,500 feet:—

Wing ...	71, 72, 73, 76, 76, 77, 78, 78 mm.
Culmen	14, 15, 12, 14, 15, 14, 13, 15 "
Tail ...	37, 38, 39, 39, 38, 42, 41, 43 "
Tarsus	18, 19, 19, 18, 19, 19, 18, 19 "

Averages.—

	Bamenda	Kumba
Wing	... 84	75 mm.
Culmen	... 16	14 "
Tail ...	... 47	40 "
Tarsus	... 21	19 "

Additional wing measurements of adult *Buccanodon d. duchaillui* in the British Museum series:—

Gold Coast	...	75, 76, 77, 77, 78 mm.
Southern Cameroon	...	74, 74, 77, 77, 78, 78 mm.
Uganda	...	75, 75, 76, 78, 78, 79, 80 mm.

This new race is named after Dr. David Bannerman whose work has done so much to encourage field ornithologists in West Africa.

***Cossypha insulana* GRANTI, new race.**

Description.—Similar to *Cossypha insulana* Grote, but the forehead, crown and nape are concolorous with the mantle and back, being olive-brown instead of blackish.

Distribution.—The forests of Kupé Mountain and the adjacent uplands, at an altitude of 3,000 to 5,500 feet, British Cameroons.

Type.—In the British Museum. Adult male, Kupé Mountain 4° 50'N, 9° 40'E, at altitude of 4,500 feet, British Cameroons. 18 November, 1947. Collected by Dr. William Serle. Collector's No. C.1123. Brit. Mus. Reg. No. 1949. 14. 5.

Measurements of type.—Wing 73; tail 52; bill 12; tarsus 27mm.

Soft parts.—Iris brown; bill black, feet grey.

Remarks.—The nominate race is described from the forests of Fernando Po. The species has not previously been recorded from the mainland of Africa.

Its distribution as related to *Cossypha isabellæ* Gray is interesting. From the forests of the Bamenda highlands, Manenguba Mountain (only 15 miles north of Kupé), and Cameroon Mountain, *C. isabellæ* only has

been recorded. From the forests of Kupé Mountain and Fernando Po (which geographically are separated by the Cameroon Mountain) *Cossypha insulana* only has been recorded.

Measurements.—One other adult male has wing 70; bill 13; tail and tarsus damaged. One immature male has wing 70; tail 50; bill 12; tarsus 26. Three adult females have wings 71, 68, 66; tails 52, 46, 44; bills 11, 12, 13; tarsi 26, 25, 25.

Immature plumage.—An immature male has the upper parts blackish, thickly spotted with orange, the spots smaller and more profuse on the head, larger and fewer on the back and mantle. Underparts mottled pale orange and blackish shading into greyish-white in the middle of the belly. Wings and tail as in adult. *Soft parts*.—Iris grey-brown; feet olive-grey; bill dark brown above, yellow below.

Habits.—An unobtrusive, solitary, silent species seen on or near the ground in the primary or mature secondary forest.

Named after Capt. C. H. B. Grant who gave me much helpful advice when I was working out my Cameroon collection.

BRADYPTERUS MARIE YOUNGI, new race.

Description.—Upperparts similar to but slightly darker in shade than *Bradypterus mariae mariae* Madarasq., *Bradypterus mariae usambarae* Reichenow, and *Bradypterus mariae granti* Benson. Below it differs from all three, but is nearest to *B. m. usambarae* but darker than that form; the breast is buffish-brown and the flanks and thighs dark olive-brown. It differs from the description of *Bradypterus mariae boultoni* Chapin by its darker colouration. Its habitat is the montane forest undergrowth, near the forest edge, and in the old tangled second-growth. Not found in the grassland.

Distribution.—The forested slopes of the Cameroon Mountain between 4,500 and 6,000 feet, British Cameroons.

Type.—In the British Museum. Adult male, Cameroon Mountain, altitude 4,500 feet, British Cameroons. 1 January, 1949. Collected by Mr. Charles G. Young. Collector's No. C.2878. Brit. Mus. Reg. No. 1949. 14. 7.

Measurements of type.—Wing 60; culmen 11; tail 54; tarsus 24mm.

Remarks.—Two other adults, a male and female, were collected by Mr. Young on 19 December 1948 at 6,000 feet and an immature male and female by myself on 30 June, 1947 and 12 April, 1948 respectively.

<i>Measurements</i> .—		<i>Wing</i>	<i>Culmen.</i>	<i>Tail.</i>	<i>Tarsus.</i>
Adult male ...	...	57	12	56	23 mm.
Adult female ...	...	58	12	56	23 ,,
Immature male ...	...	57	10	41	22 ,,
Immature female ...	...	54	10	52	22 ,,

Immature plumage.—Above, as adult, below, dull yellow chin, throat and belly; dark olive breast, and olive-brown flanks, thighs, and under tail coverts. *Soft parts*.—Iris and feet grey-brown; bill blackish above and yellowish below, tipped dusky.

With its comparatively short, narrow-webbed tail, its general colouration, and its forest habitat, this new form appears to be the Cameroon Mountain representative of *Bradypterus mariæ*.

Bradypterus camerunensis Alexander, a much paler bird, also short-tailed and narrow-webbed, is likewise known only from the Cameroon Mountain. Its habitat is imperfectly known. Boyd Alexander (*Ibis* 1915, p. 501) found it in the "thick growth," but he does not say whether in the grass or in the forest; and the identity of the grass inhabiting *Bradypterus* heard on the Mountain by Bates (*Handbook*, p. 355) is uncertain. For the present it is best regarded as a species. Capt. C. H. B. Grant agrees with this conclusion.

This new race is named after my friend Mr. Charles G. Young who collected the type.

BRADYPTERUS MARIÆ MANENGUBÆ, new race.

Description.—Above, similar to *Bradypterus mariæ youngi* Serle. Below, quite different from *Bradypterus mariæ mariæ* Madarasq., *Bradypterus mariæ usambaræ* Reichw., *Bradypterus mariæ granti* Benson, *B. m. youngi*, and the description of *Bradypterus mariæ boultoni* Chapin, being pale brown on the chin shading into fulvous-brown on the throat, breast, belly, flanks and under tail coverts, darkest in shade on the flanks and palest on the centre of the belly. Its habitat is the mountain forest, in the undershrubs and in the dense shrubery of old clearings.

Distribution.—The Manenguba Mountain forest between 6,000 and 6,500 feet, British Cameroons.

Type.—In the British Museum. Adult female, Manenguba Mountain, 5° 5' N, 9° 50' E., altitude 6,500 feet, British Cameroons. 19 March, 1948. Collected by Dr. William Serle. Collector's No. C.1635. Brit. Mus. Reg. No. 1949. 14. 8.

Measurements of type.—Wing 59 ; culmen 12 ; tail 54 ; tarsus 23mm.

Soft parts.—Iris brown ; bill blackish-brown ; feet light brown.

Remarks.—An adult male, with small gonads but apparently adult, collected at the same locality on 24 March differs from the female only in having the chin and upper throat paler. It measures : Wing 61 ; culmen 12 ; tail (moulting) 35 ; tarsus 23mm.

Field habits.—Both these birds were solitary, and difficult to observe as they threaded their way with brisk movements through the dim forest undergrowth, keeping close to the ground. The female uttered at times a loudish "chip, chip, chip . . ." note.

Its short tail, general colouration, call, and forest habitat indicate its relationship to the *Bradypterus mariæ* group. (See Grant and Mackworth-Praed in *Ibis*, 1941, pp. 441-455).

APALIS JACKSONI BAMBULUENSIS, new race.

Description.—Differs from *Apalis jacksoni jacksoni* Sharpe and *Apalis jacksoni minor* Ogilvie-Grant as follows:—Male, the forehead, crown and nape are jet-black, instead of grey, and the olive-green back, mantle and

rump are several shades darker. Female, the upper parts from the forehead to the rump are slightly darker in shade, the lores and ear coverts are blackish instead of dark grey, and the grey chin and throat patch is a shade darker. In size the new race is very slightly larger than *A. j. jacksoni* and considerably larger than *A. j. minor*.

Distribution.—Only known from the montane forest near Lake Bambulue, altitude 6,000 feet, in the Bamenda Division of British Cameroons.

Type.—In the British Museum. Adult male, near Bambulue Lake, 5° 50' N, 10° 10' E., altitude 6,000 feet, 10 miles south of Bamenda, British Cameroons. 14 September, 1948. Collected by Dr. William Serle. Collector's No. C.2670. Brit. Mus. Reg. No. 1949. 14. 6.

Measurements of type.—Wing 54; culmen 9; tail 64; tarsus 18 mm.

Soft parts.—Iris brown; feet fleshy-brown; bill black.

Remarks.—Measurements.—One other adult male has wing 55; tail 64; culmen 9; tarsus 18. An adult female has wing 53; tail 54; culmen 10; tarsus 18mm.

The only other specimen of this race is a female collected by Bates near the type locality. Bannerman in recording this specimen under *A. j. minor* (Bds. of West Africa, Vol. 5, p. 96) comments on its large size. Its measurements are:—wing 52; tail 54; culmen 10; tarsus 18mm.

Habitat.—Primary montane forest

A new Race of the Common Hawk Cuckoo from Ceylon.

Mr. W. W. A. PHILLIPS sent the following description and the type for exhibition :—

HIEROCOCCYX VARIUS CICELLÆ, new race.

Description.—Differs from *Hierococcyx varius varius* Vahl, of India in being distinctly darker in all plumages. There is no appreciable difference in size. In the adult plumage the ash-grey of *H. v. varius* is replaced throughout with a deeper slate-grey and the light rufous by deep rufous. The effect ventrally is to give the abdomen a more distinctly striped effect. Similarly in the young bird the grey brown and rufous of the upperparts are deeper in colour and ventrally the streaks are bolder.

Distribution.—Apparently confined, as a breeding resident, to the wet-zone hill regions of the Central Province of Ceylon, but occurs also in the hills of the Uva Province and the Low-country wet-zone. Specimens examined from Agrapatana and Lindula (Dimbula District) and Kandy.

Type.—In the British Museum. Adult male (testes not enlarged). Collected by Mrs. Cicely Lushington on the Caledonia Estate, Lindula, Dimbula District, Central Province, at 4,400 ft., on 21 January, 1948. Brit. Mus. Reg. No. 1948. 57. 40.

Measurements of type.—Wing 195; culmen from base 27; tail 161; tarsus 22mm.

Remarks.—It is generally believed that this species occurs in Ceylon solely as a winter visitor from the mainland, arriving early in November and remaining in the hill regions until the following April. This belief appears to be based on a statement by Layard, quoted in Legge's "Birds of Ceylon," to the effect that he secured three specimens in the old Botanical Gardens at Kew, Colombo, that were believed to be "new arrivals" from India. But as early as 1925 Mr. W. E. Wait suspected the presence of resident birds and now conclusive evidence has been obtained by Mrs. Cecily Lushington (after whom the new form is named). Mrs. Lushington saw a pair of mating birds in January, 1946. A series of five specimens were collected and forwarded by me to the British Museum for comparison with the nominate race. I am interested to hear that the only two specimens from Ceylon in the British Museum have the characteristics of this new form. In addition to the evidence of collected specimens, young birds have been observed being fed by their foster parents. There is therefore no available evidence to support the belief that the nominate form visits Ceylon during the winter period.

This species is fully discussed by me in my paper "Cuckoo Problem in Ceylon" now in process of publication, and in Mrs. Lushington's "Changes in habits of the Ceylon Hawk Cuckoo" which is being prepared for publication.

I am indebted to Mr. N. B. Kinnear and Mr. J. D. Macdonald for examining the specimens, the latter gentleman for exhibiting the type on my behalf.

A Semi-Albino specimen of *Bradypterus mariae usambarae* Reichenow.

Captain C. H. B. GRANT exhibited the specimen and remarked:—

This specimen was collected by Mr. J. G. Williams on the Uluguru Mountains, Tanganyika Territory on 4 November, 1948 and has been presented to the National Collection, Brit. Mus. Reg. No. 1949. 3. 1.

It may be described as pale grey and is very different from the usual colour of this species as shown by the other specimen exhibited. That it is a semi-albino is shown by the white alulae, the white speck at the tip of one of the inner secondaries and the white claws.

A New Race of Thrush from Northern Rhodesia.

Mr. C. M. N. WHITE sent the following :—

TURDUS OLIVACEUS WILLIAMI, new race.

Description.—Nearest to *Turdus olivaceus stormsi* Hartlaub, but distinctly darker and more greyish olive above, especially on the crown and without any brownish tinge; flanks and under wing coverts strikingly darker orange rufous; size larger.

Distribution.—Only known from the type locality.

Type.—In my collection. Male adult, collected on 31 July, 1948, at Kansoku forest, Mwinilunga, Northern Rhodesia, by Sakayombo.

Measurements.—Wing 135-136 against 120-129mm., in *T. o. stormsi*; tail 103-105 against 89-100; tarsus 35 against 31-33mm.

Remarks.—The birds to the north of Mwinilunga which seem to be close to *T. o. stormsi* are well known to me, and it was most surprising to find that two examples collected at Kansoku about one hundred miles to the south, in this isolated forest patch, are so remarkably different from the northern birds. Named after an African, William Washa Chikundulo who helped me to collect there.

Some New Records from Nyasaland.

Mr. C. W. BENSON sent the following :—

Specimens as below, not previously recorded from Nyasaland, have been presented to the British Museum :—

Spatula clypeata (Linnæus). Head, wing and tail of a female shot at Karonga by Dr. D. P. Turner, 27th November, 1948. It was with ten Garganey, *Anas querquedula* Linnæus, one of which was also obtained. While the Garganey occurs regularly as far south as Nyasaland, albeit in small numbers, see "Ibis", 1940, p. 283, 1942, p. 202, 1944, p. 488, 1947, p. 557, and seven seen at Lake Kasuni, 5 December, 1948, the European Shoveler is merely a straggler. There is no other Nyasaland record, except that in December, 1932 I saw a Shoveler at Fort Johnston, probably this species.

Capella gallinago gallinago (Linnæus). A female shot by Mr. W. H. J. Rangeley at Mzimba, 9 December, 1948. Nearly forty specimens of the genus have been collected in Nyasaland between October and March, and critically examined, but this is the only one of this species.

Neocichla gutturalis angusta Friedmann. A male obtained 16 August, 1948, in the Mzimba District at 3,000 feet. $11^{\circ} 00'S.$, $33^{\circ} 30'E.$ Six specimens also obtained in the Lundazi District, eastern Northern Rhodesia, at $11^{\circ} 45'S.$, $32^{\circ} 55'E.$, and $11^{\circ} 21'S.$, $32^{\circ} 31'E.$ I have examined two other specimens of this species in the British Museum, another from eastern Northern Rhodesia and one from Tanganyika Territory. The white tips of the outermost rectrices in these nine specimens, measured along the shaft, are 2-6mm. wide, average 3mm. See also Chapin, "Auk," 1948, p. 291.

I have examined in Mr. A. Loveridge's recent collections for the Museum of Comparative Zoology, Harvard, a male of *Onychognathus tenuirostris raymondi* Meinertzhagen (for use of this name see Grant and Mackworth-Praed, Bull. B.O.C., 67, p. 82), obtained by my collector Jali Makawa, who was loaned to Mr. Loveridge, on the Nyika Plateau at 7,000 feet, 1 November, 1948, testes "moderately large."

Notes from the Lundazi District, Northern Rhodesia.

Mr. C. W. BENSON also sent the following :—

Thanks to Mr. E. L. Button, District Commissioner of the Lundazi District, Northern Rhodesia, I was able to send my collector on two visits to the district during 1948. Lists of the specimens collected were sent

to Mr. C. M. N. White, and those worthy of record, as showing an extension of known range, or previously unrecorded from Northern Rhodesia, or but rarely so, are listed hereafter. All such have been presented to the British Museum. A few collected by Button, in his private collection, are also mentioned. Thanks to careful checking, especially with Button, I am satisfied that all localities, altitudes and dates are correct.

The first visit was in April and May. Collecting localities mentioned were :—by Lumwambwa river at 3,000 feet, $10^{\circ} 42'S$, $32^{\circ} 40'E$; Tembwe, 1,800 feet, $11^{\circ} 21'S$, $32^{\circ} 55'E$; Muzyatama, Kolala and Katambara, all at 4,800 feet, positions $11^{\circ} 01'S$, $32^{\circ} 27'E$; $11^{\circ} 04'S$, $32^{\circ} 22'E$; and $11^{\circ} 00'S$, $32^{\circ} 24'E$ respectively. The following are worthy of record :—

Francolinus hildebrandti hildebrandti Cabanis. Male, 17 May, female, 19 May, Lumwambwa.

Eremialector bicinctus usheri Benson. Female, 20 April, Tembwe. This, and four males in Button's collection from near the Lupamazi river, at $11^{\circ} 30'S$, $32^{\circ} 52'E$, 2,000 feet, 12-14 June, compared with a long series of *E. b. usheri* in the British Museum. Wings of males 162, 163, 163, 165, female 161mm.

Prodotiscus regulus regulus Sundevall. Female, 20 April, Tembwe. Wing 77.5mm.

Trochocercus albonotatus albonotatus Sharpe. Sex ?, 11 May, Muzyatama. In Button's collection. Compared with a long series of this race in the British Museum.

Apalis alticola brunneiceps (Reichenow). Two, male and female, 9 May, Kolala.

Cyanomitra verticalis viridisplendens (Reichenow). Female (culmen from base of skull 26mm.), imm. male, 7 May, Katambara. The latter differs from adult males in breeding plumage in having the forehead, crown, chin and throat black, rest of underside olivaceous, with some feathers on breast yellower.

Symplectes bicolor amaurocephalus (Cabanis). Male, 11 May, Muzyatama.

The last four mentioned species were collected in riparian evergreen forest in the Muchinga mountains. The principal object of the visit was to investigate such forest in that area, but it was reported as strictly riparian, therefore comparatively unextensive, which probably explains why no other species of interest were found. A species of *Pirenestes* was reported as seen on the edge of forest, but was not obtained.

In August the Mukutu mountains, an isolated range rising to over 6,000 feet, were visited. My collector found that here also evergreen forest was only riparian, mostly on the southern and eastern slopes. While camped at Jombo, $10^{\circ} 27'S$, $33^{\circ} 17'E$, at the southern extremity, he obtained the following between 5,000 and 6,000 feet, 6-9 August :—

Heterotrogon vittatum vittatum (Shelley). Male.

Mesopicos griseocephalus ruwenzori Sharpe. Male.

Phyllastrephus alfredi (Shelley). Two males, three females.

Arizelocichla nigriceps fusciceps (Shelley) Two females.

Batis capensis dimorpha (Shelley). Male, female.

Pogonocichla stellata orientalis (Fischer and Reichenow). Two females.

Apalis alticola brunneiceps (Reichenow). Two females.

Nectarinia kilimensis arturi P. L. Sclater. Male, edge of forest.

Coccopygia melanotis kilimensis Sharpe. Sex ? edge of forest.

Mandingoa nitidula nitidula (Hartlaub). Imm. male.

The only other forest species reported, but unobtained, was *Apalis bamendae* Bannerman. Somewhat lower, at about 4,500 feet, a male of *Buccanodon whytii sowerbyi* (Sharpe) was obtained, 9 August, but a female obtained 27 March at Tunduma, 9° 18' S, 32° 38'E. is *B. w. stresemanni* Grote.

I am indebted to Captain C. H. B. Grant for advice on several points in the identification of the above recorded specimens.

Notices.

STOCK OF THE "BULLETIN."

It is proposed to reduce the stock of the "Bulletin", but before this is done members are given an opportunity to acquire parts at 2/6 each. Applications should be made to the Honorary Secretary. No reply will be sent if parts are not available. The following are out of print:— Volumes 1, 2, 3, 4 (except 1 copy each Pref. and part 28), 17, 18, 20, 22, 24, 26, 28, 30, 32 and 34. Part 113 and Pref. Vol. 64.

Please note the Hon. Secretary's address :

W. E. Glegg, Esq., Zoological Museum, Tring, Herts.

Publication of the "Bulletin."

As announced at the Annual General Meeting, the Editor is endeavouring, with the aid of the printers and publishers, Messrs. H. F. & G. Witherby, Ltd., to have the "Bulletin" with the Meeting Card, in the hands of the Members one week before the next Meeting, as was the custom before the late war.

The only way in which this can be done is for Members who make a contribution at a Meeting to hand the MS. to the Editor at that Meeting. As the proofs will be corrected by the Editor, it is essential that the MS. should be correct and either typed or written very clearly with scientific and place names in block letters. The first mention of a scientific name should be spelt out in full, i.e., genus, specific name, racial name (if any) and author. Any further mention of the same name need only have the initial letter of the genus and no further mention of the author.

If no MS. is handed to the Editor at the Meeting, a note will be inserted mentioning the contribution.

NEXT MEETING.

The next Meeting of the Club will take place on Wednesday, 20th April, 1949, at the Rembrandt Hotel, Thurloe Place, S.W.7. Dinner at 6.30 P.M.

BULLETIN
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The four-hundred-and-eighty-fifth Meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, S.W.7, on Wednesday, 20th April, 1949, following a dinner at 6.30 P.M.

Chairman : DR. J. M. HARRISON.

*Members present :—*Miss C. M. ACLAND ; Major N. A. G. H. BEAL ; Dr. G. BEVEN ; W. E. GLEGG (*Hon. Secretary*) ; Capt. C. H. B. GRANT (*Editor*) ; Dr. J. G. HARRISON ; Miss E. P. LEACH (*Hon. Treasurer*) ; C. W. MACKWORTH-PRAED ; Sir PHILIP MANSON-BAHR ; Miss G. M. RHODES ; Dr. W. A. RICHARDS ; Lt.-Commdr. C. P. STAPLES ; C. N. WALTER ; Col. O. E. WYNNE.

*Guests :—*Mrs. N. BEAL ; Miss L. P. GRANT ; D. L. HARRISON ; Miss A. RICHARDS ; Mrs. L. L. STAPLES ; J. A. TATHAM.

Members, 15 ; Guests, 6 ; Total, 21.

**Some Developmental Peculiarities in the Skulls of Birds
and Bats.**

Dr. J. G. HARRISON made the following remarks and showed slides :—

PART I.—Our subject tonight is a rather unusual one and one that has never received proper attention from ornithologists or from zoologists. This is not really surprising because the zoologist when he studies these things has tended to confine himself to one particular example from a group, and then to pass on to another. In birds, for instance, the development of the skull of the Pigeon has been well studied, but no one has undertaken a wide comparative survey of the development of birds' skulls. Obviously, the person to do this must be primarily an ornithologist, but he must also have some knowledge of anatomy and physiology. We do not claim to be experts in these subjects, and consequently there is much more work to be done, but we have been able to study a number of skulls covering many species of birds and bats, and as this has revealed some interesting facts, we thought it would be worthy of a talk, possibly

in the hope that some of those with expert knowledge may feel inclined to interest themselves in the subject. Therefore we are going to summarise our findings as they are at present.

The work is by no means complete. Much remains to be done, especially with the histology of the skull, which is a very complicated matter. Also, we have not been able to study the larger groups, such as the Geese and bigger Gulls, because to do this properly, an X-ray examination is necessary, and even in these days of a State Medical Service, this is not possible!

The development that we are concerned with tonight is the pneumatisation of the skull. When fully mature, birds' skulls and almost all their other bones contain air within their substance. This results in a bird being much lighter relative to the size of its body. In the skull, this is easily distinguished, because the pneumatised bone is opaque and appears covered with little white dots, which are the trabeculae joining the inner and outer tables, between which the air is situated. Bone that is not pneumatised and fully developed, is single layered and translucent.

Ornithologists often note down the amount of pneumatisation, and have used this as a rough indication of the age of the bird. For instance, if the whole skull is opaque and covered with dots, then the bird is adult, but if there are translucent windows in the skull, then the bird is not fully adult. As we shall show, there is a great deal of variation in the time taken for different species to reach this criterion of maturity, and some never do reach it.

We need not consider tonight a detailed description of the skull. The important bones are the nasals, frontals and parietals, which together form the vault of the skull. These are all membrane bones, which is to say that they are all preformed in ordinary connective tissue and are not formed from cartilage. All these bones fuse together early in life and their sutures become obliterated. Fully developed membrane bone consists of two layers, an inner and an outer layer separated by an intervening spongy substance, which is called the diploë. This is the state of affairs in our own skulls. In birds, large parts of the spongy portion becomes reabsorbed, by special cells which are circulating in the blood, and the spaces so formed become filled with air.

The air arrives by ingrowths from the nasal cavity and from the two auditory capsules. This is seen in figure 3 on the slide. The condition of this skull is very similar to man, in which the frontal sinuses and the mastoid air cells represent a similar process.

The remainder of the figures on the slide show how the process spreads until the whole of the skull has become pneumatic. It should be mentioned that a stage of vascularisation has to precede the formation of the air spaces, in order that the diploë may be absorbed. In the opaque developing skull it is easy to see these blood vessels, and consequently one can be certain if the process is taking place or has finished, depending on the presence or absence of blood vessels.

With regard to the microscopical study of the skull, we are not prepared at present to give a final opinion, but the pneumatic areas appear to consist of the normal ossified bone. The transparent windows which are left in certain species are a very different matter, and do not appear to conform to any known developing bone, and where they join with the developed bone, there occurs a thin zone of rounded cartilaginous-like cells. All this is receiving further attention.

Our observations show that it takes from six to eight months for a skull to become completely pneumatic. There are however a small number of interesting exceptions to this rule, which must be considered next.

(1) The Swift, *Apus apus apus* (Linnaeus).

The immature Swift quickly reaches the stage of pneumatisation shown on the slide. The nasal bones are pneumatic and air spaces have grown out from each auditory capsule, spread medially towards the midline, fused and continued along the line of the obliterated sagittal suture to join the nasal area. Up to this point, the fact that the process was actively occurring was proved by the presence of blood vessels, and immature Swifts seen by us between August 30th and October 7th have all been in this state.

Swifts now leave the British Isles, but when they return in the spring *the skull condition is exactly the same, and the fact that no further pneumatisation is occurring is proved by the total absence of blood vessels.* Adults examined through the summer and autumn have confirmed this without exception, and out of twenty-five examined, some must be more than one year old.

Here then, is a very strange state of affairs, in which the Swift appears to differ from almost all other birds. It was this species that started the whole enquiry, and the following other exceptions have since been discovered—

(2) The Kingfisher, *Alcedo atthis ispidia* (Linnaeus).

The diagram shows the skull of an autumn adult, obviously as a minimum, rather over a year old, and it will be seen that it bears a striking resemblance to that of the Swift. The only difference is that the whole of the parietal bones are fully developed. No blood vessels were present in this skull. Two other examples have been examined, December and January birds; these were not so far developed, and blood vessels were still present as would be expected.

(3) The Little Tern, *Sterna albifrons albifrons* Pallas.

(4) The Arctic Tern, *Sterna macrura* Naumann.

An autumn adult of each of these species has been examined, and in both of these, the process was incomplete but finished. A single autumn adult Black Tern, *Chlidonias niger niger* (Linnaeus) was however completely pneumatic.

(5) The Sparrow Hawk, *Accipiter nisus nisus* (Linnaeus).

(6) The Merlin, *Falco columbarius aesalon* Tunstall.

Several examples of Sparrow Hawks and one Merlin all a year or more old, have skulls that are not completely developed. Usually there are one or two small windows in each parietal bone.

(7) Wading birds of various species.

The last exception includes the whole group of wading birds, although the findings are not so constant in these birds. The slide shows various examples, which quite obviously must be considered as exceptions, but we have examined certain adult Curlews, Oystercatchers and a Jack Snipe which have had fully pneumatised skulls, although most of these have had the remains of the vascular engorgement still present, showing that the process cannot have long finished.

That is our list of exceptions. For those who may think of investigating the subject, we should also mention that the whole process is considerably slowed down and even stopped by any serious disease that the particular bird may be suffering from. This is not unexpected, for a similar state of affairs occurs in humans, and the so-called Harris' lines, which appear on X-ray, in long bones, are thought to be due to arrested development during some serious illness.

Discussion.—We have so far given the main facts of the subject, and it remains for us to leave the realms of fact for those of speculation. We can only tell you how we think the facts may one day be accounted for, but it is by no means impossible that some totally different explanation may arise and be proved correct. Firstly, from our brief survey, it must be apparent that the degree of pneumatisation cannot be accepted as a reliable guide to the age of a bird, at any rate, not until all the differences are understood.

Birds' bones are peculiar in that they contain a great deal of air. This undoubtedly serves to make them lighter, and probably the air-sacs serve a similar purpose. The facts about the skull variations cannot be accounted for in this way, i.e., that the air contained within the skull merely serves to make the skull lighter. If this was so, then one would expect all skulls to be in the same state and fully pneumatic. But this is not so. Neither is it correct to assume that the results are haphazard and due to variation within the individual species. There is no variation whatever in all the Swifts examined, and each skull conforms exactly to a special pattern of development.

To attempt to arrive at any possible answer to the problem, some factor must be looked for that could concern all the species quoted as exceptions. Can there be anything common to a Swift, Kingfisher, Arctic Tern, Little Tern, a small hawk and a wading bird? Or is it after all, purely fortuitous that they should have the same developmental peculiarities in their skulls?

We think that we may have found an answer to this, but before going further, some elementary aeronautics must be considered. In these days, aviation medicine is an important subject and has been the subject of considerable research. A bird, the most perfect flying machine, has not

received the same attention, but some remarkable adaptations for flight have been demonstrated in Bats, as you will shortly hear. It may well be that the differences in skull development will prove to be another.

Speed or Velocity may be defined as the state of progressing, and as such with no variations or alterations in direction, it has no effect on the body.

Acceleration is the rate at which the velocity of the body alters per unit of time. An increase is referred to as positive acceleration or $+G$, and a decrease as negative acceleration or $-G$. In a bird travelling in a straight direction, the effects are gained parallel to the long axis of the body. When it turns it will feel the effects of transverse G, but we need not consider this in detail tonight.

In positive acceleration, the speed increases rapidly. Now, blood is a fluid medium, and hydrostatic forces act upon it, so that it tends to get left behind, and it may even flow in the opposite direction to the normal flow of blood in the carotid arteries, which supply the brain. Blood flows from the head-end of the body towards the tail-end, and pools in the big veins in the abdomen and legs. This is what occurs in man, and at $+5G$ the body is beyond the control of the muscles and there may be complete loss of vision, commonly known as "blacking-out." Man suffers no ill effects from this. Although it is difficult to judge speed and acceleration in birds, we do not wish to suggest that birds are capable of accelerating at speeds sufficient to black-out. Nevertheless, it should be remembered that any very small effects might lead to sufficient incoordination which might be disastrous to a bird that has to catch flies for a living !

The effects of negative acceleration are however much more serious. To illustrate this, in man—

$+2G$ causes a fall in blood pressure of 20mm.Hg.

$-2G$ causes a rise in blood pressure of 65mm.Hg.

As an example, a bird illustrated in the slide, dives rapidly from A to B and then starts to climb to a point C, slowing all the time. The fluid blood tends to continue on at the same speed as the bird was travelling at when it reached the point B. The blood tries to overtake the body and flows to its head, where it causes a raised intercranial pressure. This is brought about by the hydrostatic forces acting in the same direction as the flow in the carotid artery, so that both forces combine. In addition, hydrostatic back pressure tends to prevent the blood returning from the head, and at the same time, there is an increased venous return from the lower part of the body to the heart, which reflexly causes an increased cardiac output (Starling's Law of the Heart) and so still more blood is sent to the head.

In man, with an inexpandible skull, the pressure in the blood vessels rapidly rises, causing marked distress. They easily burst, leading to permanent damage or death from intercranial haemorrhage. While it is improbable that positive acceleration can ever affect a bird, it is much more

likely that it could suffer from the effects of negative acceleration and increased intercranial pressure. This is the factor that we think may be the one that links all our quoted exceptions.

These birds fit into two groups, those that may be classed as fast flying and those that dive. The Swift is undoubtedly one of the fastest of British Birds ; Col. Meinertzhagen has estimated that it travels in excess of 100 m.p.h. at times, and it has been timed at well over 68 m.p.h. on an airspeed indicator. Some of the wading birds similarly are very fast, the Golden Plover having been timed on an air-speed indicator as travelling at 60 m.p.h. We do not know of any recorded speeds for the Sparrow Hawk or Merlin, but they are fast birds. All these examples are birds that are likely to experience considerable deceleration at times. Col. Meinertzhagen has estimated a small passerine's speed at 20-37 m.p.h.

The sudden effect of decelerating also occurs with birds that dive head first into water, the change occurring at the moment of meeting the water. This brings in the Kingfisher. The terns are of interest in this connection. Both the Arctic and Little Tern fit into this group, although we admit that two skulls are nothing to argue upon. The Black Tern collects its food by hawking over the surface of the water, and it is perhaps suggestive that the only skull examined was fully pneumatic.

The Gannet must be mentioned here. This species dives into the sea from a great height and being so large a bird it has a specially reinforced skull. It does not appear to correspond in any way to the smaller diving birds, but further investigation is wanted here.

The theory that we would like to advance is that in those birds which for various reasons are likely to suffer from the effects of increased intercranial pressure, there occurs an area in the skull, which is capable of movement or even expansion, which will allow for these changes to occur, without damage to the normal function of the brain. In fact, the bird will not "red-out." Our reasons for thinking this, is that the skull contains these single layered "windows," which do not consist of bone, and which may prove to be capable of expansion, while at the edge of this substance there are a layer of cells with a cartilaginous-like appearance. Cartilage is capable of movement, and these cells may provide for the movement of the windows which they surround. We may be proved to be quite wrong in our ideas, and then the findings will have to be accounted for in some other way. Much will depend on our microscopical findings. This must be followed by experiments with pressure chambers.

Another interesting observation that we would like to make concerns air-sacs, which are found in birds. At present very little is known for certain about their function, but we do know that as a result, aeration of the lungs is complete, as the only air flowing through the lungs is tidal air, going to the air-sacs. There is, therefore, no stagnation of air in the lungs, such as occurs in man, and the maximum absorption of oxygen can occur. They also serve to make the bird lighter, and are in communication with the air spaces in the bones.

In order to prevent pooling of blood in various parts of the body, such as occurs in "blacking-out," man wears an inflatable air-suit, by means of which pressure can be applied to the abdomen and the legs, and so prevent the pooling. If it were to be found that a bird could control the amount of air in its air-sacs, which are distributed in the abdomen, thorax and neck, then it would be able to prevent itself from "blacking-out" or "redding-out." The situation would be exactly similar to man, except that the bird would be wearing its air-suit internally! This is the theory put forward by my father, Dr. J. M. Harrison.

This has described some of our findings, which we have ventured with some trepidation to discuss. It occurred to us that it would be very interesting to know what type of skull occurred in bats, as these mammals must surely experience many of the same effects as birds. Accordingly, the branch of the family dealing in mammals was called into consultation, and for the next few minutes members of the British Ornithologists' Club will have to hear something about bats!

The Cranial Vault in Chiroptera.

Mr. D. L. HARRISON made the following remarks and showed slides:—

PART II.—To be speaking to this distinguished company of ornithologists about bats seems almost to revert to the beliefs of Pliny, who said that the bat is the only bird which brings forth young and suckles them!

There are however, physiological problems common to bats and birds. We have examined about 130 skulls belonging to 32 species of bats and we have found that similar differences in the rate of development of the cranial vault occur as in birds. In *Eptesicus capensis* the South African, relative of our Serotine bat, we found the state of development of the vault to be the same in an adult female and in its new born infant. This retarded development occurs in 23 out of 25 species of *Microchiroptera* examined. But in six species of *Megachiroptera* and in two *Microchiropterine* species the skull reaches a much more advanced condition, and apparently does so at quite an early age, judging by an example of *Eidolon sabaeus*, a Fruit bat from the Yemen, in which the permanent dentition is only just erupted, but the vault is fully developed.

It is necessary to give a brief description of the state of the vault as found in most *Microchiroptera*. That of the Great Bat (*Nyctalus noctula*) can be described, as it is quite typical.

The bones of the vault are for the most part thin and translucent, except for certain reddish areas, which, when viewed against a bright light are seen to consist of abundant ramifying blood vessels. The vascular pattern extends on each side along the mid-line of the vault, a process curving laterally on each side some 3 to 4mms. in front of the lambdoid crest and down to the posterior root of the zygoma, and a process extends back from this on each side to the lambdoid crest. In addition a transverse band extends laterally in the interorbital region, from which a process extends posteriorly on each side towards the centre of each half of the membranous vault, and a process extends anteriorly from it into the maxillæ.

When the skull of the Great Bat is cut across transversely to its long axis, it is seen that the vascular areas consist of much thicker, more porous bone than the non-vascular areas, showing that diploë formation is in progress. Now, while we have not yet fully examined the complex histological picture, we feel that the vascular areas in bats are analogous, if not strictly similar to the vascularisation preceding pneumatisation in birds.

In bats, as in birds, the differences in development can be explained by differences in flight habits. The effects of $-G$ are felt most in swiftly and erratically flying species, more than in slowly and ponderously flying ones.

Everyone is more or less familiar with the amazingly erratic flight of our native bats. As examples we may mention the furious dives of the Noctule as it pursues some large beetle; or the intricate twists and turns of the Horseshoe bats as they fly unfalteringly through the gloomy passages and crevices of subterranean caverns; or perhaps most familiar of all is the looping and twisting of the little Pipistrelle. The effects of deceleration are bound to be severe in such creatures. But why is it that a reflex nervous arc like the carotid sinus arc does not serve to protect them from these effects? Probably because the time taken for a nervous reflex to alter the blood pressure through its action on the cardiovascular system is too slow, fast although it is, to compete with sudden changes in $-G$, and hence the need for direct compensation by expansion of the cranial vault when intracranial pressure is raised.

The flight habits of the Fruit bats (*Megachiroptera*) are very different. Andersen [1] wrote that the flight of *Eidolon* is "owl-like and straight, with occasional rapid turns," and that the common Indian Flying Fox (*Pteropus giganteus*) flies with a "measured, rowing, direct and heavy flight," while Allen [2] calls them "steady fliers" and refers to the measured "swish, swish" of their wings. We think that it is for this reason that the skulls of the Flying Foxes we have examined are so fully developed that no membranous windows remain in their vaults. This is also true of the Epaulette bat (*Epomophorus crypturus*) and the Arabian Straw-colored bat (*Eidolon sabaeus*), and the flight of both these species is probably more or less ponderous. A skull of the small Indian Fruit bat (*Cynopterus sphinx*) is almost fully developed, but its flight is described by Andersen [1] as being "light, swift and buoyant" and "dodging about amongst bushes and low trees." This apparent anomaly might be resolved by the study of more skulls of this animal, and by more detailed knowledge of its flight habits.

One example of *Rousettus aegyptiacus*, the Egyptian Fruit Bat, has some well marked membranous windows in its vault, but lacking any direct information of its flight, the significance of this is doubtful.

Two of the species of *Microchiroptera* seen have unusually developed vaults. *Artibeus jamaicensis* has the most developed vault seen amongst these. The vascular pattern is almost entirely obscured. Its feeding habits are very sedentary, so that its flight is probably slow and direct. A skull of the large False Vampire Bat (*Phyllostomus hastatus*) has a few

small membranous areas in the vault. This is a very omnivorous species, feeding on birds, mice and small bats as well as fruit and insects. Much of this food must be picked off foliage or off the ground and it is not known whether the small bats are ever chased and caught on the wing.

Is there any other explanation to account for these differences? It cannot be just the different sizes of the animals concerned because the small Fruit Bat (*Cynopterus sphinx*) has a fully developed skull, while the Naked Bat (*Cheiromeles torquatus*), with a bigger braincase, has an undeveloped vault. (Condyllobasal lengths 29.5mms. and 29.9mms. respectfully). And then again, the Mouse-eared Bat (*Myotis myotis*) has an undeveloped vault, and it is only a little smaller, so far as the braincase is concerned (Condyllobasal length 22.6mms.), also the False Vampire (*Phyllostomus*) has a much bigger vault than *Cynopterus* and its vault is less developed, (Condyllobasal length 34 mms.) which is also true of *Rousettus*, (Condyllobasal length 42.5mms.).

Could not the development of the skull be influenced by diet? It seems unlikely that this accounts for the differences between the species for some of the fruit eating *Microchiroptera*, like *Artibeus* seem to be fully developed, while others like *Sturnira* and *Hemiderma* are undeveloped. This might, however, be accounted for by differences in flight habits.

To sum up, the bats which we have examined fall into two groups so far as the cranial vault is concerned, with a few species which exhibit an intermediate state.

Group 1. Skulls remain undeveloped into adult life.

Nyctalus noctula, *Nyctalus leisleri*, *Scotophilus nigrita*, *Plecotus auritus*, *Pipistrellus pipistrellus*, *Pipistrellus nathusii*, *Pipistrellus kuhlii*, *Rhinolophus ferrum-equinum*, *Rhinolophus hipposideros*, *Rhinolophus euryale*, *Myotis daubentonii*, *Myotis nattereri*, *Myotis mystacinus*, *Myotis lucifugus*, *Myotis myotis*, *Myotis nigricans*, *Eptesicus serotinus*, *Eptesicus capensis*, *Barbastella barbastellus*, *Nyctinomus brasiliensis*, *Hemiderma brevicauda*, *Sturnira ludoviciae*, *Desmodus rufus*, *Cheiromeles torquatus*.

Group 2. Skull develops fully by early adult life.

Pteropus giganteus, *Pteropus edulis*, *Epomophorus crypturus*, *Cynopterus sphinx*, *Eidolon sabaeus*.

Three species, namely *Artibeus jamaicensis*, *Phyllostomus hastatus* and *Rousettus aegyptiacus* are somewhat intermediate between the two groups, tending towards Group 2 in the case of the latter two species, while it is questionable whether the former should not even be included in it.

It is thought that these facts can be explained by the need for an expansible cranial vault in swiftly and erratically flying species.

It may be thought that the theory is somewhat fantastic, especially in view of the widely different origins and natures of the two groups of animals concerned. The amazing functional intricacies involved in supersonic audiolocation, which has been found to be the long disputed means employed by bats for their faultless flight in darkness, show that

evolution knows no bounds in strange adaptations to special modes of life. To draw an analogy from bird life; who can say how intricate the functional pattern involved in migration may eventually be found to be?

References.

1. 1912. ANDERSEN, K., Cat. of Chiroptera, pps. 6, 328, 594.
2. 1940. ALLEN, G. M., Bats. p. 130.

ACKNOWLEDGEMENTS.

PART I.—In the preparation of this paper, my father, Dr. J. M. Harrison has shared much of the work with me, and a large proportion of the skulls have been examined and worked out by him. Only the fact that he is the Chairman tonight has decided him not to be a part-author with us.—J.G.H.

PART II.—I have much pleasure in thanking all those who have helped me in obtaining specimens of Bats, namely, Miss G. M. Rhodes, Professor D. V. Davies, the late Dr. L. Hopper, Mr. P. A. Clancey and Mr. F. R. Parrington of the Cambridge University Museum of Zoology.—D.L.H.

We are also most grateful to Lieut.-Commander C. P. Staples who has prepared the slides for us. He did this at very short notice and after considerable difficulty has succeeded in making our indifferent diagrams quite presentable.

Dr. J. M. Harrison, Sir Philip Manson-Bahr and Mr. C. W. Mackworth-Praed took part in the discussion that followed.

A New Race of *Phyllastrephus xavieri* (Oustalet), from the British Cameroons.

Dr. JAMES P. CHAPIN sent the following :—

Phyllastrephus xavieri serlei new race.

Description.—Differs from *Phyllastrephus xavieri xavieri* (Oustalet) of the Upper Congo Forest by the paler yellowish color of its under-parts. The more whitish-yellow coloration is most noticeable on throat and fore-neck. The upper-parts are much alike in the two races, save that the upper tail-coverts of *P. x. serlei* are more rufous brown like the rectrices, less washed with green, and more clearly divided from the green of the rump than in nominate *P. x. xavieri*. There is no marked difference in size.

Type.—Male adult, Kumba, British Cameroons, altitude 1,000 feet, 4 April, 1947. Collector's No. C 37.

Distribution.—From the lowlands about Kumba, at levels of 600 to 1,200 feet, to Nkongsamba, 3,000 feet, on the eastern side of the Manenguba Mountains. Thus *P. x. serlei* is really not a montane form, and has not been reported from Mount Cameroon or the Bamenda highlands.

Measurement of type.—Wing 86, culmen from base 24, tarsus 21 m.m., tail 77.

Remarks.—When discussing the differences between *Phyllastrephus xavieri* and *Phyllastrephus icterinus* (Bonaparte) in the "Ibis," 1944, pp. 543-545, I stated that the larger species *P. xavieri*, occupied lowland forests in Uganda, the Congo, and the Cameroon. I did not attempt to divide it racially, although possibly the Uganda specimens are more yellowish than those of the Upper Congo. Neither did I consider *P. xavieri* to be a race of *P. fischeri* (Reichenow), because in Uganda and the eastern Congo, where *P. fischeri sucosus* (Reichenow) lives in mountain forests mostly above 5,000 feet, and *P. xavieri* at lower levels, there was no indication that they interbred. Likewise in the southern Congo and Angola there is no evidence that *P. fischeri cabanisi* (Sharpe) is conspecific with *P. xavieri*.

The western limits of *P. xavieri* appeared to be in the French Cameroon near Efulan and Nkongsamba. A single male with wing 86mm. and tail 76mm. long had been collected for the American Museum by R. H. Drinkwater near Nkongsamba in June, 1930. It seemed a little paler yellowish beneath than Congo specimens, but I did not consider that significant.

Recently Dr. William Serle has kindly lent me a series of twelve skins of *P. xavieri* collected in the region of Kumba, British Cameroons. Most of them are paler beneath, especially on the throat, than Congo specimens; and it will be recalled that the type locality of *P. xavieri* is Bangui, on the Ubangi River. Some of the males from Kumba agree closely with that from Nkongsamba. Thus it appears that this bulbul is represented at the north-western extremity of its range by a race with paler under-parts.

At Kumba, Dr. Serle collected four males and five females of this new race, at levels from 700 to 1,200 feet. He also obtained single males at Bai, 600 feet, 20 miles to the south-west, Masaka, 1,000 feet, 10 miles to the west, and Ndoi, 600 feet, 30 miles to the north of Kumba.

The males have wings 84-87mm., tails 74-79mm. The females have wings 71-77mm., tails 61-68mm. There is some variation in the color of the under-parts, the male from Bai and one of the females from Kumba being almost as bright yellow on throat and lower breast as *P. x. xavieri*. But the browner color of the upper tail-coverts is sufficient to separate them from Congo specimens.

Near the station of Kumba Dr. Serle collected also a series of fifteen males and two females of *Phyllastrephus icterinus*. All came from levels of 700 to 800 feet, and are very like specimens from the Cameroon, Gaboon and Congo. Three skins of this smaller species from Nigeria and Sierra Leone, also lent me by Dr. Serle, confirm the opinion I have already expressed as to the brighter yellow under-parts of *P. icterinus* in Upper Guinea.

Notices.

STOCK OF THE "BULLETIN."

It is proposed to reduce the stock of the "Bulletin", but before this is done members are given an opportunity to acquire parts at 2/6 each. Applications should be made to the Honorary Secretary. No reply will be sent if parts are not available. The following are out of print:— Volumes 1, 2, 3, 4 (except 1 copy each Pref. and part 28), 17, 18, 20, 22, 24, 26, 28, 30, 32 and 34. Part 113 and Pref. Vol. 64.

Please note the Hon. Secretary's address :

W. E. Glegg, Esq., Zoological Museum, Tring, Herts.

Publication of the "Bulletin."

As announced at the Annual General Meeting, the Editor is endeavouring, with the aid of the printers and publishers, Messrs. H. F. & G. Witherby, Ltd., to have the "Bulletin" with the Meeting Card, in the hands of the Members one week before the next Meeting, as was the custom before the late war.

The only way in which this can be done is for Members who make a contribution at a Meeting to hand the MS. to the Editor at that Meeting. As the proofs will be corrected by the Editor, it is essential that the MS. should be correct and either typed or written very clearly with scientific and place names in block letters. The first mention of a scientific name should be spelt out in full, i.e., genus, specific name, racial name (if any) and author. Any further mention of the same name need only have the initial letter of the genus and no further mention of the author.

If no MS. is handed to the Editor at the Meeting, a note will be inserted mentioning the contribution.

NEXT MEETING.

The next Meeting of the Club will take place on Wednesday, 18th May, 1949, at the Rembrandt Hotel, Thurloe Place, S.W.7. Dinner at 6.30 p.m.

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

Volume 69.

No. 8.

The four-hundred-and-eighty-sixth Meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, S.W.7, on Wednesday, 18th May, 1949, following a dinner at 6.30 P.M.

Chairman : DR. J. M. HARRISON.

*Members present :—*Miss P. BARCLAY-SMITH ; Mrs. R. G. BARNES ; C. W. BENSON ; Col. F. O. CAVE ; R. P. DONALDSON ; W. E. GLEGG (*Hon. Secretary*) ; Capt. C. H. B. GRANT (*Editor*) ; Mrs. B. P. HALL ; N. B. KINNEAR ; Miss E. P. LEACH (*Hon. Treasurer*) ; Miss C. LONGFIELD ; J. D. MACDONALD ; C. W. MACKWORTH-PRAED ; Sir PHILIP MANSON-BAHR ; Miss G. M. RHODES ; Lt.-Commrdr. C. P. STAPLES ; Dr. A. LANDSBOROUGH THOMSON ; N. J. WADLEY ; C. DE WORMS ; Col. O. E. WYNNE.

*Guests :—*Mrs. C. W. BENSON ; B. G. LYNN-ALLEN ; Commrdr. H. H. R. MOORE.

Members, 21 ; Guests, 3 ; Total, 24.

Bicentenary of Edward Jenner.

Dr. A. LANDSBOROUGH THOMSON said :—

Yesterday the bicentenary of the birth of Edward Jenner (1749-1823) was celebrated in medical circles. As you know, he was the originator of vaccination against smallpox, and thereby the father of the science of immunology : he also demonstrated the pathological cause of angina pectoris, and was the first to infer that tuberculosis was a disease transmitted by infection. I suggest that the occasion should not pass unnoticed here, because in our own field Jenner was likewise a pioneer. He was the first to describe the eviction from the nest by the young cuckoo of the eggs or chicks of its foster parents. This observation, which was subsequently confirmed by Montagu and other ornithologists, was published in the *Philosophical Transactions* of the Royal Society in 1788, and is quoted as authoritative in early works on British birds, such as those of Macgillivray and Yarrell. He made many other observations and experiments on birds, often at the instance of his friend and former master, John Hunter, another famous medical man interested in natural

history. He recorded, for instance, the order in which birds of different species begin to sing at daybreak. Jenner's observations on the migration of birds were communicated to the Royal Society a few months after his death in 1823. He quoted various records of his own and others showing that birds were in fact capable of travelling long distances, and he scouted the idea of hibernation which was then prevalent. He marked swifts by removing two claws from the foot, and by this means demonstrated that they returned to the same nesting place in the following year. For these reasons, it seems only fitting that we should tonight respectfully salute the memory of Edward Jenner, ornithologist.

New Races of a Warbler, a Flycatcher, and an Owl from West Africa.

Dr. W. SERLE sent the following descriptions and the types for exhibition :—

Poliolais lopesi manengubae, new race.

Description.—Female.—Differs from *Poliolais lopesi lopesi* (Alexander) in that the crown is olive-brown not chestnut, and shades into pale rufous on the forehead, lores, area about the eye, and ear coverts. The mantle, back, and rump are dull olive-green not olive-brown. The underparts differ in that the grey ground colour is paler in shade, the breast is washed with rusty-olive, and the olive-brown wash on the flanks and thighs is paler and greener in shade. From *Poliolais lopesi alexanderi* Bannerman it differs in that the crown is olive-brown not chestnut, and the mantle, back, and rump are greener and less brown. Male.—Differs from *P. l. lopesi* in that the upperparts are dark grey and in fresh plumage lack the brownish tinge. The grey of the underparts is paler and in the centre of the belly shades off into greyish-white. The thighs are dark grey washed with olive. From *P. l. alexanderi* Bannerman, it differs markedly in the absence of olive-green above and below.

Distribution.—Manenguba Mountain and Kupé Mountain, British Cameroons, at an altitude of 5,000 to 6,500 feet.

Type.—In the British Museum. Adult female, Manenguba Mountain, 5° 5'N, 9° 50'E, at altitude of 6,000 feet, Kumba Division, British Cameroons, 25 March, 1948. Collected by Dr. William Serle. Collector's No. C.1717. Brit. Mus. Reg. No. 1949.14.11.

Measurements of type.—Wing 51 ; culmen 11 ; tail 25 ; tarsus 22mm.
Soft parts.—Iris orange-brown ; feet grey ; bill dark grey.

Remarks.—Three of the eight adult males collected exhibit a faint olive-green wash on the mantle and back. In worn plumage the upperparts of the male turn slightly brownish but are still different in tone to *P. l. lopesi*. The immature male and female differ from the adult in the same way as do those of *P. l. lopesi* (see Bann. Bull. B.O.C. 35, 1915, p. 54). At a later stage the young male closely resembles in plumage the adult female, and a still older male is distinguished from the adult male only by the retention of a few reddish feathers on the crown and about the eye.

Measurements of ten males and five other females from Manenguba and Kupé Mountains. Adult males.—Wing 56, 56, 55, 55, 54, 54, 54, 53 ; tail, 35, ?, 35, 33, 28, 32, 25, 28 ; culmen 13, 14, 12, 13, 13, 12, 13 ; tarsus 23, 23, 24, 24, 23, 22, 23, 23mm. Immature males.—Wing 51, 48 ; tail 25, 24 ; culmen 12, 11 ; tarsus 25, 24mm. Adult females.—Wing 51, 49, 49 ; tail 24, 23, ? ; culmen 11, 12, 12 ; tarsus 22, 23, 21mm. Immature females.—Wing 52, 50 ; tail 28, 22 ; culmen 11, 12 ; tarsus 23, 21mm.

Habits.—Inside the mountain forests, near the ground, in the undershrubs and especially in the tangled thickets which appear in places where a fallen tree admits the light. The call is a plaintive "peeep," very similar to that of *Camaroptera brevicaudata* (Cretzschmar), and indeed, in life these two species are, apart from colouration, remarkably similar. In March and April small family parties were the rule.

Dyaphorophyia ansorgei kumbaensis, new race.

Description.—The female differs from the type (a female) of *Dyaphorophyia ansorgei harterti* Bates, to which it is nearest, as follows.—The upperparts are similar in shade but slightly greener and less grey on the crown, mantle and back, the chestnut of the underparts is much darker in shade, is restricted to the lower chin and the throat, and is sharply demarcated from the yellow of the breast and belly instead of merging gradually into it. The male resembles *D. a. harterti*.

Distribution.—The forests of the Kumba Division of the British Cameroons between 700 and 5,000 feet.

Type.—In the British Museum. Adult female, Kumba 4° 40'N, 9° 25'E, altitude 700 feet, British Cameroons. 24 November, 1947. Collected by Dr. William Serle. Collector's No. C.1158. Brit. Mus. Reg. No. 1949.14.9.

Measurements of type.—Wing 59 ; tail 26 ; culmen 12 ; tarsus 16mm. Soft parts.—Iris brown ; eye wattle green ; bill black ; feet blue-grey.

Remarks.—Four adult males from the Kumba Division have the following measurements.—Wing, 58, 58, 57, 57 ; tail, 27, 23, 25, 26 ; culmen, 12, 11, 12, 12 ; tarsus, 15, 16, 16, 17mm.

The shade of orange-yellow or yellow on the underparts of both male and female is an unreliable character as the colour fades on exposure to light. Thus in the series of four males, the last bird collected, which was not exposed, is much darker in shade than any *D. a. harterti* in the British Museum collection, whilst the other three and the female type are much lighter in shade than any *D. a. harterti*, though my recollection is that they were quite dark when freshly collected.

The new form was compared at the British Museum with the following races.—*D. a. harterti*, *Dyaphorophyia ansorgei graueri* Hartert, *Dyaphorophyia ansorgei kungwensis* Moreau and *Dyaphorophyia ansorgei lomaensis* Serle.

Habits.—*D. a. kumbaensis* was found only in the primary forest, usually in the undershrubs or the foliage of the lower branches, but occasionally in the tree tops. It occurred singly or in pairs, and was uncommon throughout its range.

Tyto capensis cameroonensis, new race.

Description.—Differs from *Tyto capensis capensis* (A. Smith) in having the spots of the undersurface much smaller and sparser, notably on the under wing-coverts and the thighs; and in having the lower border of the facial ruff pure white without dark tips.

Distribution.—The grasslands of the Manenguba Mountain at 6,500 feet, British Cameroons.

Type.—In the British Museum. Adult Male, Manenguba Mountain, 5° 5' N, 9° 50' E, 6,500 feet, British Cameroons, 22 March, 1948. Collected by Dr. William Serle. Collector's No. C.1652. Brit. Mus. Reg. No. 1949.14.200.

Measurements of type.—Wing 320; tail 124; bill 33; tarsus 81mm.

Soft parts.—Iris brown; bill dirty white; feet grey-brown.

Remarks.—This new race was compared with the series of twenty-two African *Tyto capensis* in the British Museum, of which sixteen are from South Africa and six from East Africa, the latter taken within the range of *T. capensis libratus* Peters and Liveridge, see Proc. Biol. Soc. Wash. 48, p. 77, 1935.

Its upperparts are darker and its underparts a purer white than any of these, but the depth of shade above and below varies greatly within the series and it seems better to wait till more West African specimens are collected before including these characters in the diagnosis of the new race.

Mr. Dean Amadon and Dr. J. P. Chapin compared the specimen with the material in the American Museum of Natural History, and they consider that it represents a new race. I am greatly indebted to them for their help.

Field Habits.—The type was flushed from the ground on a steep hillside thickly covered with grass, bracken, and low creepers, and not far from the forest. This was a regular roosting place as shown by the platform of matted grass, and the numerous feathers and droppings. In the bird's stomach was a rat.

A New Race of Bush Warbler from the Sudan.

Mr. B. P. HALL described the following race and exhibited the type:—

Eremomela badiceps latukae, new race.

Description.—Nearest to the nominate race from Fernando Po, Cameroons, Angola and Belgian Congo, but the red-brown cap is less rufous, less silky, and does not extend quite so far over the nape, being, on an average, 18mm. from front to back, against 20mm.

Type.—In the British Museum. Adult male.—Collected near Katire, in the foothills of the Imatong Mts., southern Sudan, on 22 May, 1939 by J. D. Macdonald. Collector's No. 811. British Museum Reg. No. 1939.10.1.88.

Distribution.—Foothill forests of Imatong Mts., southern Sudan.

Measurements of Type.—Wing 57 ; culmen 12.5 ; tail 40mm.

Soft parts of Type.—Bill black ; feet pinkish flesh : iris brown.

Remarks.—A series of four male specimens collected in the foothills of the Imatong Mts., by Col. F. O. Cave and J. D. Macdonald were studied in 1939 and the differences between them and the nominate birds were noted. Macdonald (*Ibis* 1940, p. 340) thought that they might be *Eremomela badiceps ituricus* (Gyldenstolpe) from the Ituri forest, eastern Belgian Congo, and were tentatively named by him as such, as the War prevented any comparison with the type of *E. b. ituricus*. When I was recently incorporating these specimens in the main collection, the differences, though slight, were sufficient to attract my attention. Two specimens were sent to Count Gyldenstolpe for comparison with the type *E. b. ituricus*. He was kind enough to do this and his letter makes it quite clear that they cannot be considered this race. He notes the same differences of the crown and back of the Sudan specimens in comparison with *E. b. ituricus* as had already been noted in comparison with the nominate race, and, in addition, a slight difference in size, and in the colour of the auricular region.

Another male specimen collected from the Imatong Mts. in 1946 by, Capt. G. T. Weekes, shows the same characteristics as the other four specimens.

The rufous cap of a specimen in the British Museum collected by Boyd Alexander from the Likandi river, north-east Belgian Congo, appears intermediate between the Sudan specimens and those from the Cameroons, thus suggesting that there is a gradual change in character from the nominate race in the Cameroons eastwards into the Sudan.

The race has been named after the Latuka tribe in whose country the specimens have been found.

I am indebted to Mr. J. D. Macdonald and Captain C. H. B. Grant for their help and advice and to Count Gyldenstolpe for making the comparison with *E. b. ituricus*.

The History of a Great Auk's Egg presented to the British Museum by Lord Lilford, of three Great Auk's Eggs bequeathed to the nation, and of the remains of a recently discovered Egg.

Mr. WILLIAM E. GLEeson made the following remarks :—

The national collections have been enriched by the recent gift of a Great Auk's egg from the present Lord Lilford. It is important that a record of the history of such eggs should be kept as they change hands. Lord Lilford's egg (B. M. Reg. No. 1949.7.1) bears no inscription and is not accompanied by information so that its history must be learned by process of elimination. Lord Lilford, Thomas Littleton, fourth Baron, at some time or other possessed five eggs of this species and he states [3] about 1893 that on the death of his brother-in-law, Mr. Arthur W. Crichton, he purchased an egg, which Mr. Crichton had bought from the College of Surgeons. Lord Lilford, fourth Baron, writes that four other

eggs, at the time of writing at Cambridge, had been owned by him, and he adds the amusing account that one of the many visitors to the aviaries at Lilford told the falconer that he had read in a newspaper that Lord Lilford had given a very stiff price for one of these eggs and added that he hoped Lord Lilford had "hatched it successfully." It would appear that the egg, which has just been given to the British Museum is the one which was the property of Mr. Arthur Crichton. This is confirmed by Thomas Parkin [5], who, writing in 1894, states that he had been informed by Prof. A. Newton that of the four eggs given by Lord Lilford to the Cambridge University Museum, two had been purchased by Mr. Small at an auction in Edinburgh ; while another was that found in a farm-house near Blandford in Dorset ; and the last was secured through Mr. Frank from the Museum at Lausanne. Parkin's statement was subsequently supported in detail by Prof. Newton [4] in 1907, when the third part of the "Ootheca Wolleyana" was published. In 1861, Prof. Newton made what was described as the greatest discovery of Great Auks' eggs that ever fell to the lot of a naturalist. Here in his own account [8] as written to his brother on Christmas 1861. "Only fancy a discovery I made the other day ; it quite took away my breath. Going to the Surgeons' Hall to inspect Owen's dissection of a Great Bustard, I found Huxley there, who asked me what I wanted. He told me I should most likely find it in such and such a place. Ascending to the topmost gallery of the innermost room, a glass case with birds' eggs met my eye. After looking at one or two grimy Ostrich's and deformed Turkey's which might have belonged to John Hunter, I saw, as I thought, a nice model of a Great Auk, next to it was a prickly hen's, and then, on, on, on, as far as the eye could reach, Great Auk's. To cut it short, there were ten, nearly all in excellent preservation, though one or two are a little broken. Of course, I hardly obtained credence from my friends ; but next day I took Tristram and Sclater and Simpson, and we all four had the case opened and handled the eggs which are neatly sealing-waxed on to boards. As soon as my first emotions by the way were over I called out over the railing to Huxley and told him what I had discovered ; whereupon to the astonishment of some grave-looking medical students in spectacles, he answered back that I was like Saul who went out to seek his father's asses and found a Kingdom ; to which I could only respond that I hoped I should, like my illustrious prototype, succeed in gaining possession of my discovery. How they came there I don't know, but expect to make out ; no doubt they are Iceland. I always was sure of more being in England than I could trace." The actual day of the discovery was 12 December, 1861 [5a]. On 11 July, 1865, four of these ten Great Auks' eggs were sold at Stevens' Sale Rooms [2]. One of them, Lot 143, was bought by Mr. Crichton for £29. This is the story of the egg presented by Lord Lilford.

The British Museum now possesses six eggs of the Garefowl. Two of these are very early accessions. They are Nos. 31 and 32 respectively in Symington Grieve's list. It is presumed [2] that they were bought by Leach at the sale of Bullock's collection in 1819 [5a] but there is another theory that they originally belonged to Sir Hans Sloane, whose collections became part of the British Museum.

The fourth egg (B.M. Reg. No. 1901, 11.15.814) is a perfect specimen with holes at each end. It is No. 19 in Symington Grieve's list, and came to the nation under the Crowley Bequest. The egg was in Tristam's collection, which was purchased by Mr. Philip Crowley. Tristam had got it from the late J. de Capel Wise [2]. The label accompanying the egg bears the following inscription "Purch. from Williams, Oxford St. 1853 for £35. Received by him from Copenhagen probably, and one of the last batch of eggs sent to Denmark from Iceland."

The other two eggs formed part of the Rothschild bequest and apart from an inscription were unaccompanied by information. Fortunately I blundered on to a letter, written to "The Field" of 29 March, 1928 by Walter, Lord Rothschild. He stated [7] that he had in Tring Museum two eggs, two birds and a complete mounted skeleton of the Great Auk. One egg was in Count Roedern's collection, which was bought by Lord Rothschild in 1889. The second egg was one of Mr. Champlay's nine eggs and was bought by Lord Rothschild in 1907. The two birds came out of the Riocourt collection. The skeleton was from Funk Island. Lord Rothschild added that the correct number of Great Auk's eggs was 82 or 83. The Roedern egg (B.M. Reg. No. 1941.1.1.1) bears no inscription.

It is No. 8 in Symington Grieve's list [2]. Prof. Newton [4] records that he saw this egg in 1861 in Leipzig when in the possession of Herr H. Hühnel and that he had a model of it made, which went to Cambridge University. About 1870 the egg was sold to Count Roedern at Breslau. Hühnel is said to have bought it from Schulz, a dealer at Leipzig, who received it from Hamburg. It is said to have been acquired from Herr J. G. W. Brandt in which case it would be of Icelandic origin. This egg is figured by Frohawk in Naumann's "Naturgeschichte der Vögel Mitteleuropas," Jubilee Ed. (W. Blasius) 1, 12, Taf. 17 b, fig. I.

The other Rothschild egg (B. M. Reg. No. 1941.1.1.2) bears the inscriptions "Champlay collection, bt. of Rutter, Nov. 1, 1901," "Number Three." It is one of the Nos. 57 to 65 inclusive in Grieve's list [2] and was one of the collection of nine formed by Mr. Robert Champlay about 1864. Mr. Champlay died in 1895. I understand that his collection was disposed of privately.

Further discoveries may yet be made regarding Great Auks' eggs. J. R. T. Pollard of The University, St. Andrews, writing on 9 April, 1949, states [6] that he had obtained lately from a dealer some of the fragments of a Great Auk's egg, which according to a note in the handwriting of the former owner, the late Mr. Simpson, was smashed in 1857.

The fragments were purchased by the dealer from one of Mr. Simpson's descendants. Nothing is known of the history of the egg. Mr. Pollard wants a reference to an official account of the report that a Great Auk had been seen off the Lofoten Islands in or about 1937.

During the course of the ensuing discussion Mr. N. B. Kinnear stated that three of the eggs, which had been found by Prof. Newton and retained by the Royal College of Surgeons, had been recently sold to Capt. Vivian Hewitt,

REFERENCES.

1. ALLINGHAM, E. G. (1924). "A Romance of the Rostrum," p. 159.
2. GRIEVE, S. (1885). "The Great Auk or Garefowl," p. 105, appendix pp. 15, 25, 27, 29, 33. (1897). Supplementary Note, pp. 260, 263.
3. LILFORD, LORD (1893). "Coloured Figures of the Birds of the British Islands," Vol. 6, p. 82.
4. NEWTON, A. (1905-7). "Ootheca Wolleyana," part 3, pp. 377, 382.
5. PARKIN, T. (1894). "The Great Auk, or Garefowl," pp. 16, 22, 23.
- 5a. PARKIN, T. (1911). "The Great Auk. A Record of Sales of Birds and Eggs by Public Auction in Great Britain, 1806-1910, pp. 8, 31.
6. POLLARD, J. R. T. (1929). "A Great Auk's Egg." "The Field." 5, 193, p. 413.
7. ROTHSCHILD, WALTER LORD (1928). "Eggs of the Great Auk." "The Field," 5, 151, p. 526.
8. WOLLASTON, A. F. R. (1921). "Life of Alfred Newton," p. 45.

STOCK OF THE "BULLETIN."

It is proposed to reduce the stock of the "Bulletin", but before this is done members are given an opportunity to acquire parts at 2/6 each. Applications should be made to the Honorary Secretary. No reply will be sent if parts are not available. The following are out of print:— Volumes 1, 2, 3, 4 (except 1 copy each Pref. and part 28), 17, 18, 20, 22, 24, 26, 28, 30, 32 and 34. Part 113 and Pref. Vol. 64.

Please note the Hon. Secretary's address :

W. E. Glegg, Esq., Zoological Museum, Tring, Herts.

Publication of the "Bulletin."

As announced at the Annual General Meeting, the Editor is endeavouring, with the aid of the printers and publishers, Messrs. H. F. & G. Witherby, Ltd., to have the "Bulletin" with the Meeting Card, in the hands of the Members one week before the next Meeting, as was the custom before the late war.

The only way in which this can be done is for Members who make a contribution at a Meeting to hand the M.S. to the Editor at that Meeting. As the proofs will be corrected by the Editor, it is essential that the M.S. should be correct and either typed or written very clearly with scientific and place names in block letters. The first mention of a scientific name should be spelt out in full, i.e., genus, specific name, racial name, (if any) and author. Any further mention of the same name need only have the initial letter of the genus and no further mention of the author.

If no M.S. is handed to the Editor at the Meeting, a note will be inserted mentioning the contribution.

NEXT MEETING.

The next Meeting of the Club will take place on Wednesday, 15th June, 1949, at the Rembrandt Hotel, Thurloe Place, S.W.7. Dinner at 6.30 p.m.

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

Volume 69.
No. 9.

The four-hundred-and-eighty-seventh Meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, S.W.7, on Wednesday, 15th June, 1949, following a dinner at 6.30 p.m.

Chairman : DR. J. M. HARRISON.

*Members present :—*Miss C. M. ACLAND ; Major N. A. BEAL; C. W. BENSON ; Dr. G. BEVEN ; Mrs. G. M. CHADWYCK-HEALEY ; R. S. R. FITTER ; W. E. GLEGG (*Hon. Secretary*) ; Capt. C. H. B. GRANT (*Editor*) ; Mrs. B. P. HALL ; Dr. J. G. HARRISON ; P. A. D. HOLLOM ; T. A. M. JACK ; Miss E. P. LEACH (*Hon. Treasurer*) ; Major G. K. McCULLOCH ; J. D. Macdonald ; Col. R. MEINERTZHAGEN (*Vice-Chairman*) ; Dr. W. A. RICHARDS ; Dr. A. LANDSBOROUGH THOMSON ; N. J. WADLEY ; R. WAGSTAFFE ; C. N. WALTER ; Col. O. E. WYNNE.

*Guests :—*Miss T. CLAY ; Mrs. H. W. CLEMENS ; Mrs. G. K. McCULLOCH ; Mrs. W. A. RICHARDS ; J. G. TATHAM ; Mrs. A. L. THOMSON ; A. TYNANS.

Members, 23 ; Guests, 7 ; Total, 30.

Fair Isle and the Pyrenees.

Mr. R. S. R. FITTER gave a talk on his recent visits to Fair Isle and the Pyrenees.

A Mounted Specimen of the Great Auk presented to the British Museum by Lord Lilford.

Mr. W. E. GLEGG read the following :—

The full history of the fine mounted specimen of the Great Auk (*Alca impennis* Linnæus), which has been recently presented to the British Museum by the present Lord Lilford, is not known. The earliest reference to it, which I have found, is that of Prof. A. Newton [3], who, writing in 1870, states that he had seen the bird when it was in the possession of Mr. A. W. Crichton of Broadward Hall, Salop, brother-in-law of Thomas, fourth Baron Lilford. After the death of Mr. Crichton, Lord Lilford, fourth Baron, purchased the bird. This happened not later than 1893. This specimen is No. 44 in Symington Grieve's [1] list. Lord Lilford, fourth Baron [2] writes that from the date of a ship's bill of lading, written in Danish and Icelandic, found inside the skin by the late H. Ward, of Vere St., to whom it was sent to be mounted, the bird was probably obtained on the coast of Iceland about 1833.

REFERENCES.

- [1] GRIEVE, S. (1885). "The Great Auk, or Garefowl," p. 15.
- [2] LILFORD, LORD (1893). "Coloured Figures of the Birds of the British Islands," vol. vi p. 82
- [3] NEWTON, A. (1870). "On existing Remains of the Gare-fowl (*Alca impennis*)" The Ibis, p. 258.

A New Race of *Melierax gabar* (Daudin).

Colonel MEINERTZHAGEN exhibited and described the following :—

Melierax gabar defensorum, new race.

Description.—Adults from Africa have a blue-grey crown and mantle varying slightly in degree without reference to locality. Birds from southwest Arabia have a dark slate-grey crown and mantle and are more heavily marked below. The throat and upper breast are also a darker and smokier grey than in African specimens. Immature birds from Arabia appear to be similar to African specimens. Size as in *M. g. gabar*.

Distribution.—Only known from extreme south-west Saudi Arabia, Yemen and the northern parts of the Aden Protectorate east to the western Hadramaut.

Type.—In the Meinertzhagen collection. Adult female. Lodar, 3,100 feet. Aden Protectorate. 13 December, 1948.

Soft Parts.—Iris orange-brown. Feet orange. Bill black, cere orange.

Remarks.—In addition to the type, I obtained two immature birds and have examined three adults in the British Museum collected by Philby in Tihama on the northern frontier of Yemen. I have also examined the large series of *M. g. gabar* from Africa in the British Museum. Named in honour of Sir Reginald and Lady Champion whose hospitality and help so largely contributed towards the success of our trip to the Aden Protectorate and Yemen.

A New Race of the Collared Sunbird from Lower Guinea.

Dr. JAMES P. CHAPIN sent the following :—

Anthreptes collaris somereni, new race.

Description.—Colors similar to those of *A. c. hypodilus* (Jardine), but flanks washed a little more heavily with greyish olive. Size markedly smaller, wings of both sexes in Cameroon and Gaboon 48-52mm., culmen from base 15-17.5mm.

Distribution.—From the coast of the Cameroon and Gaboon eastward to the Uelle, Ituri, and Manyema districts of the Belgian Congo, southward to Canhocca and Roca Congulu in Angala, and to Tshisika in the southern Kasai District.

Type.—In the American Museum of Natural History, No. 685,944. Adult Male. Anda, Lake Azingo, Gaboon. 20 December, 1907. Collected by Dr. W. J. Ansorge.

Measurements of Type.—Wing 50, culmen from base 17.5, tail 30, tarsus 15mm.

Remarks.—For many years *Anthreptes collaris hypodilus* (Jardine) has been said to range from the Island of Fernando Po eastward across the Cameroon to the Upper Congo and southward to Angola. The observation by Dr. V. G. L. van Someren (*Novitates Zoologicae*, vol. 29, 1922, p. 202) that *A. c. hypodilus* was a large, long-billed form, and that a different race occupied Angola, the Gaboon, and Cameroon, seems to have been disregarded.

In 1929 José G. Correia collected an excellent series of *A. c. hypodilus* on Fernando Po for the American Museum of Natural History, and these specimens furnish striking support for Dr. van Someren's statement. Wings of the island birds measure 52-59mm., both sexes combined; culmen from base 16.5-19mm. The smaller mainland form, extends over

most of the Lower Guinea forest area. This small race of Lower Guinea increases slightly in size to the eastward, so that males from the forested Ituri District in the north-eastern Congo have wings 51-55mm. long, and females 49-51mm. Specimens of both sexes from the Ituri have the culmen from base 15-18mm. Like the birds of the Kasai and north-western Angola, they agree in color with *A. c. somereni*, and not with the race *A. c. ugandæ*, which is distinctly brighter yellow beneath.

A New Race of Stonechat from Sicily.

Mr. P. A. CLANCEY sent the following :—

Saxicola torquata archimedes, new race.

Description.—From *Saxicola torquata rubicola* (Linnæus), 1766 : France, it differs in the male and female in fresh autumn plumage having the upper-parts tinged reddish sandy. On the under surfaces *S. t. archimedes* is noticeably more reddish sandy, less yellowish, than *S. t. rubicola*. Adults in breeding dress and juveniles not available.

Distribution.—Confined to the island of Sicily, where it abounds in a variety of habitats.

Type.—Female, adult. Near Siracusa (Syracuse), Sicily. 16 August, 1943. In the Clancey Collection.

Measurements of the type.—Wing 66.5, culmen from base 15, tarsus 21.5, tail 50mm.

Material examined.—*S. t. archimedes*, nine in fresh autumn plumage and known to be indigenous. *S. t. rubicola*, France (6), Germany, Italy, Spain, etc., long series. Also material from Corsica (*Saxicola torquata insularis* (Parrot), 1910 : Corsica), Greece (*Saxicola torquata græcorum* Laubmann, 1927 : Corfu) and N. Africa (*Saxicola torquata desfontainesi* Blanchet, 1925: Tunisia). Two indigenous British races also examined.

Remarks.—Von Jordans and Steinbacher, “Senckenbergiana” 26, 1943, p. 83, record four males taken by Schiebel in Sicily in December as of the race *S. t. rubicola*. This form undoubtedly winters in large numbers on the island.

The small size character of *S. t. græcorum* is not valid but the race seems worthy of recognition on account of the rather greyer tone of the upper-parts. I cannot see how *S. t. insularis* can be maintained on the basis of available autumn material from Corsica. *S. t. desfontainesi* is almost certainly valid but requires further detailed study.

Named in honour of the defender of Syracuse.

I acknowledge my indebtedness to Dr. J. M. Harrison, D.S.C., Lieut.-Col. W. A. Payn and Dr. Adolph von Jordans for the loan of material and apposite data.

The locality Katunga, recorded in Proc. Zool. Soc., London,
1900, p.p. 1—3, in error for Kasungu.

Mr. C. W. BENSON sent the following :—

P. L. Sclater, in the above reference, gives Katunga as a locality for a number of species collected by Sharpe during a "recent journey from Zomba to Fort Jameson." For the position of Katunga, at an altitude of about 200 feet, on the lower reaches of the River Shiré, see map "Ibis," 1894, p. 462 and also that in Belcher's "Birds of Nyasaland," (1930). One of the species recorded from Katunga is *Smilorhis sowerbyi* (Sharpe) (= *Buccanodon whytei sowerbyi*), a most surprising record, since I do not know of this form in Nyasaland except west of the Shiré Valley and Lake Nyasa, at altitudes not less than 3,000 feet. It also seemed peculiar that Sharpe should visit Katunga on a journey from Zomba to Fort Jameson, since it would be well out of his line of travel, and there are points on the River Shiré further north where he could cross without difficulty, even in a native dug-out canoe, and apparently did in fact cross at Liwonde, see below.

The localities as well as Katunga given in Sclater's paper are Buwa, Kota-Kota, Liwonde, Kasungu and Mkukula. This combination of localities does not occur in any other papers dealing with the collections made by Sharpe, Manning and Whyte, in Nyasaland, all of which were published in the "Ibis" between 1893 and 1901 inclusive. All of them, and no others, are recorded in the British Museum bird register, under the initial number 1900.1.20 with the exception that there is no mention at all of Katunga. Nine of the twelve species recorded by Sclater from Katunga are recorded in the register from Kasungu. I have traced actual specimens of all twelve with this registration number. I have not found a single such specimen labelled Katunga, but I have traced at least one specimen of nine out of the twelve species, labelled Kasungu. It may also be noted that Katunga could easily be mis-read for Kasungu, and that Sclater records none of these twelve species from Kasungu as well as Katunga. Sclater refers to a map in Geographical Journal, 10, 1897, p. 236. This is of Central Nyasaland, to no further south than about $14^{\circ} 15'S$. It seemed possible that there might be another place also named Katunga shown on this map, but such I have failed to trace it. Kasungu is shown. Incidentally, the little-known locality Mkukula is shown on this map, at $33^{\circ} 56'E$, $13^{\circ} 45'S$.

It follows from the above that Katunga must be regarded as an error for Kasungu throughout Sclater's paper.

SPECIAL GENERAL MEETING.

A special General Meeting of the Club was held at the Hotel Rembrandt at 5.30 p.m., on 18th May, 1949. Dr. J. M. Harrison was in the Chair and about eighteen members were present. It was decided to alter the Binding of the " Bulletin " so that there would be one volume for each calendar year, January to be the first number and December the ninth. The new form of binding to start in January 1950, with volume 70.

It was agreed to so alter the rules that one Vice-Chairman would be elected for three years ; one new member would be elected to the Committee and one retire each year ; contributors to the " Bulletin " would receive separates ; and the Annual General Meeting would be held in January.

NOTICE TO SUBSCRIBERS.

Volume 69 will be continued to the end of 1949 and will contain 12 parts, December being No. 12. The preface will follow after the issue of the last part.

STOCK OF THE " BULLETIN."

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Please note the Hon. Secretary's address :

W. E. Glegg, Esq., Zoological Museum, Tring, Herts.

Publication of the " Bulletin."

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If no M.S. is handed to the Editor at the Meeting, a note will be inserted mentioning the contribution.

NEXT MEETING.

The next Meeting of the Club will take place on Wednesday, 19th October, 1949, at the Rembrandt Hotel, Thurloe Place, S.W.7.
Dinner at 6.30 P.M.



18 JUL 1949
PURWABUDHO

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

15 OCT 1949

Volume 69.

No. 10.

PURCHASED

The four-hundred-and-eighty-eighth Meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, S.W.7, on Wednesday, 19th October, 1949, following a dinner at 6.30 p.m.

Chairman: Dr. J. M. HARRISON.

Members present:—Miss C. M. ACLAND; Miss P. BARCLAY-SMITH; F. J. F. BARRINGTON; Major N. A. G. H. BEAL; Miss S. V. BENSON; Dr. H. M. S. BLAIR; Col. F. O. CAVE; Dr. J. P. CHAPIN; Miss T. CLAY; J. FISHER; W. E. GLEGG (*Hon. Secretary*); Capt. C. H. B. GRANT (*Editor*); Mrs. B. P. HALL; R. E. HEATH; Miss E. P. LEACH (*Hon. Treasurer*); Miss C. LONGFIELD; J. D. MACDONALD; C. W. MACKWORTH-PRAED; J. H. MCNEILE; Col. R. MEINERTZHAGEN (*Vice-Chairman*); Dr. J. F. MONK; Lt.-Col. W. A. PAYN; Miss G. M. RHODES; Dr. W. A. RICHARDS; D. SETH-SMITH; Lt.-Commr. C. P. STAPLES; Lt.-Col. W. P. C. TENISON; Dr. A. LANDSBOROUGH THOMSON; N. J. WADLEY; A. WILLIAMS; C. DE WORMS; Col. O. E. WYNNE.

Guests:—Mrs. N. BEAL; Mrs. H. M. S. BLAIR; C. J. P. CAVE; Mrs. J. P. CHAPIN; H. F. I. ELLIOTT; Mrs. J. D. MACDONALD; Mrs. C. W. MACKWORTH-PRAED; Commr. H. H. R. MOORE; R. E. MOREAU; J. POOLE; Mrs. W. A. RICHARDS; A. G. B. RUSSELL; Mrs. L. L. STAPLES; Dr. E. STRESEMANN; Mrs. E. STRESEMANN; Mrs. W. P. C. TENISON.

Members, 33; Guests, 16; Total, 49.

Further as to Colour Change without a Moult— Subtractive Change—its Incidence and Implication.

Lieutenant-Commander C. P. STAPLES, R.N., and Surgeon Lieutenant J. G. HARRISON, R.N.V.R., made the following remarks and showed coloured and other slides:—

In January last in Bulletin B.O.C. Vol. 69 No. 4, we demonstrated that the male Snow Bunting (*Plectrophenax nivalis nivalis*) exhibits colour change without a moult and stated that we were

following this up with an examination of other species, particularly those where rapid abrasive moult discloses the secondary sexual characters at the breeding season. As the colour changes we had already discovered were closely linked with abrasive moult, it became necessary to study both forms of plumage change. This joint paper, therefore, is the result of investigations along these lines.

Reviewing the position to date, we would remind members that although the claim that colour changes can occur in definitive feathers has been put forward by many for very many years, such changes have never previously been factually proved. We have already shown that the Snow Bunting exhibits colour changes in the tail feathers, by progressive darkening, and in the tips and fringes of the mantle feathers, by progressive fading, from after the autumnal moult until full nuptial plumage is acquired in April or May. Changes also occur in the edges of the tail and secondary wing feathers where white replaces brown in both instances.

The first slide of two October and November birds and two March birds illustrates the extreme abrasive changes which occur on the heads and on the mantles between the autumn and the spring specimens. Such changes result from the wearing away of the chestnut tips to disclose the white bases of the head feathers and the black bases of the mantle feathers respectively. At the same time, the slide shows how the chestnut tips on the mantles have themselves changed to white in the March specimens.

For the benefit of those members who may not have appreciated the mechanics of abrasive moult, the next slide represents in diagrammatic form a mantle feather of a cock Snow Bunting. At "A" the October feather has chestnut tips and fringes on a black base; at "B" the same feather in June has lost all the chestnut leaving a smaller triangular shaped pure black feather only. Due to the manner in which feathers overlap one another, it is easy to see why the October bird appears chestnut and the June bird all black on the mantle. The figure at "C" shows how, halfway through the process of abrasive moult, the tips and fringes then remaining have colour-changed to white and here again one can appreciate why the mantle will appear black and white on the March birds in the previous slide. The change from "A" to "B" is purely textual; the change at "C" is both a textual and a colour change.

A closer view of five specimens in the Royal Scottish Museum in the next slide illustrates the changes well. At the same time the progressive darkening of the tail feathers is apparent, the change being from brownish-black in autumn to pure black in summer, while the brown in the edges is replaced with white.

The next slide of a series of males shows how white begins to replace chestnut in these tips and fringes from January onwards and becomes more prominent in March and April when they are pure white, and it can be seen that the tonal change is progressive.

The fifth slide shows a series of both male, and females arranged under corresponding months. It will be noticed that the females do

not show anything approaching the remarkable abrasive changes of the males, nor do they exhibit colour changes in existing feathers to the same degree.

These examples show that colour changes in definitive feathers do, in fact, occur. Are there any other species showing similar changes? Undoubtedly there are. Some are variable, but the tendency to show changes is indisputable.

The Brambling (*Fringilla montifringilla*) for instance, shows a gradual lightening in the colour of the mantle tips and a similar tendency for them progressively to become white just before they are lost altogether, in the process of abrasive moult.

As in the case of the Snow Bunting, no specimens have white tips before January, but there are many specimens with white tips in February, March and April. The colouring of the tail tends to deepen from the autumnal moult in September until March and April when it reaches its full intensity of black.

It will be observed that there is no appreciable change in the case of the females in the lower row, either on mantles or tails, and they seem to remain static and the degree of abrasion is also much less marked.

In the Stonechat (*Saxicola torquata hibernans*) the tips and fringes of the mantle are considerably lighter in tone in March and onwards compared with their shade in September and again there is also an appreciable increase in the depth of colouring in the tail, only apparent when skins are placed in chronological order. Again with the females the degree of abrasion is far less than that of the male.

The Lapland Bunting (*Calcarius lapponicus lapponicus*) also shows interesting changes comparable to those of the Snow Bunting. The long mantle fringes that obscure the nuptial colouring are chestnut just after the moult but are much lighter by April—the change ranging from chestnut-brown to a buffish brown and even buff. Similarly, the pale tips of the feathers on the crown and base of the throat become lighter before being cast altogether. The changes in the colouring of the lores, forehead, ear coverts and chin are said to be effected by a partial moult—and not abrasive moult—in April. While we need not for the moment concern ourselves with cases of partial moults of head and neck parts, it is interesting to note that no similar partial moult is claimed in respect of the females. The slide also illustrates quite clearly that there is little change by way of abrasion of the feather tips in her case.

The Redstart (*Phoenicurus p. phoenicurus*) undergoes its autumnal moult in late July, August or early September but there is no partial spring moult. Abrasion of the tips of the feathers gradually causes a marked change in the appearance of the male but no marked change in the female. The photo shows, however, that the hen acquires a reddish suffusion at the moult—this is particularly noticeable on the underparts which we shall see later—but this suffusion gradually vanishes before the breeding season. Her immediate post-moult plumage is, therefore, brighter than her breeding dress.

The Rock Thrush (*Monticola saxatilis*) is a species where there is extensive abrasive moult and where, in addition, the similarity between the sexes immediately after the moult is very marked. This similarity tends to disappear as abrasive moult takes its course. Here again there appears to be a fading in the shade of the light coloured tips of the feathers on the male and in some instances the tail colouring tends to become redder.

In the Starling (*Sturnus vulgaris vulgaris*) we have a similar convergence of plumage between the sexes—which are indistinguishable in the field from July until January. Even in the Starling the buffish tips to the head and neck become white from January onwards in the case of the male but not in the case of the female. This species is also frequently cited as one where there has been a modification of feather shape as between the sexes. According to the "Handbook" the females are like males but their body feathers are shorter and broader; buff and grey tips being thus larger and making females more spotted than adult males both in winter and in summer. The slide shows this, but the differences are also due to the varying amount of abrasion, the females being less worn than the males. If the "Handbook" description were strictly correct the tips of the females would have to be longer not shorter so that, if environmental wear is the only cause of tips becoming worn as is the general idea, the disparity between the sexes could be maintained. However, the Starling presents a special problem of its own in regard to the extent of subtractive change and pure and simple abrasion and final conclusions must be reserved. In selecting our series we have endeavoured to eliminate the question of a "physiological" race by choosing specimens with correct grading of the colour development in their beaks. This is important as the abrasive changes in the males correspond with the state of their beak colouring.

Our last example of colour change to-night is the Black Lark (*Melanocorypha yeltonensis*). Here is a perfect example of colour change in the tips and fringes of the mantle comparable in all respects with the extensive changes displayed by the Snow Bunting. The tips, after the moult, are brownish-buff but they get progressively lighter until they become pure white just before they finally drop off. In the "Handbook" the change is merely dismissed by the wording "Abrasion of pale coloured tips gradually makes plumage almost entirely jet black." It is strange that the wide divergence of colouring in these tips has been overlooked. With the female, the abrasion of the pale fringes causes dark brown to show on the upper parts and her underparts tend to appear darker due to the black bases of the feathers becoming disclosed through abrasion of the whitish distal halves. Nevertheless, the amount of so-called wear is considerably less in her case and the male, by May, has entirely lost its obscuring tips and is, like the Snow Bunting, left with triangular shaped feathers of pure black as a result.

We claim that we have shown that tonal colour changes in definitive feathers occur and that these changes are to be seen, *inter alia*, in the Snow Bunting, Black Lark, Brambling and Lapland Bunting and to

a lesser degree in the Stonechat, Redstart and Rock Thrush. There appears to be a constant tendency for the obscuring tips involved in abrasive moult to become paler and the degree of change seems to be more extensive in the species where melanin in its darkest form is the colouring matter of the area of plumage involved. This is well exemplified by the Black Lark and Snow Bunting. At the same time the colouring of tail feathers deepens so that brownish-black at the moult becomes dense black by the spring. There is also an overall improvement in the tonal quality of all body contour feathers in early spring and all these changes, as we have previously claimed and again repeat, are in our opinion due to a combination of the peculiar properties of melanin and the absorption by feathers attached to the fat parts and through their cortex of secretions from within the bird, such secretions being oil-borne. It is apparent that the obscuring tips tend to lose colour progressively and it may well be that this is universal among species that have them but such changes are not readily assessible by the human eye. That there are variations, intra species, is also a difficulty in assessing colour changes.

There seems no doubt that such changes as we have shown are part and parcel of the process heretofore known as "abrasive moult" which consists in the casting of the tips and fringes of feathers whose presence has served to obscure the colours that grace the nuptual plumage. The term "abrasive moult" signifies a wearing or rubbing away and one frequently meets descriptions of individual species that imply that this "wearing away" results from the effect of agencies quite outside the bird's control, in other words, wearing away through environmental factors. Expressions such as "abrasion of the tips and fringes causes a remarkable change . . .", or "these tips and fringes wear off" are definitely misleading as they suggest a fortuitous action due to outside agencies and moreover, they make no distinction between overall wear pure and simple as the result of normal wear and tear of plumage and because of which birds moult annually, and this peculiar form of partial shedding of the feathers which occurs for a specific purpose in the spring and is by no means universal. For this reason we prefer to call "abrasive moult" by the more descriptive name of "subtractive change." After all it is a moult or shedding of parts of feathers by subtraction and the parts involved are clearly distinguishable from the remainder of the feathers by differences of colour. This is the test that enables one to decide whether a body contour feather merely wears by abrasion or is changed in size and shape by subtractive change. Subtractive change only occurs in body contour feathers. Changes in the margins of wing and tail feathers takes place by actual abrasion often accompanied by chemical changes as we have already shown. If we are right in our view that subtractive change is something more than mere wearing away, something resulting from physiological factors from within the bird, then all descriptions which imply wearing away of tips and fringes of body contour feathers are confusing and even erroneous.

The subject of so-called "abrasive moult" has not received the attention it deserves. There is little literature on the subject and one

cannot avoid the conclusion that ornithologists have evaded the subject for fear they stirred up problems difficult to resolve.

Gätke, in his "Birds of Heligoland" seems to be the only person who has attempted to explain the process in any detail. At page 152 *et seq* he refers to the change from winter plumage to breeding dress without moult as being accomplished in three different ways. The simplest way consists in the shedding of the edges of the feathers of the winter plumage which are mostly of a rusty-grey colour. He then cites the Chats, Shore Lark, Finches, Buntings, and some others as examples. Then he says "a less simple manner in which the change from winter plumage to breeding garb is accomplished consists, so far as I have been able to determine without the help of a microscope, in the peeling off of the separate barbs of the feathers whereby they are stripped of a thin inconspicuously coloured envelope so that the purer and finer colour previously concealed beneath the latter becomes exposed. . . ." He then cites the carmine of the Linnet or Mealy Redpoll, and the azure-blue of the Bluethroat as examples. He further claimed that the feathers which by the end of the winter are worn irregularly and blunted at the tips, after this change of colour, again have their margins completed and their tips beautifully and evenly rounded off, so that they are in all respects like new feathers. But it is interesting to note that he did not attempt to test his claims with a microscope. The third method he claims was a pure colour change by the change in the amount of pigment in a feather as when black or blackish-brown replace grey with which we have already dealt in a previous paper and to some extent confirmed.

We (J. G. H. and C. P. S.) claim that subtractive change is just as much a definite process as the ordinary autumnal moult that all birds undergo. It follows clearly defined rules and has a very special purpose from a biological point of view. It is thus no haphazard affair and is as much subject to the control of a bird's physical state as any other of its physiological processes. The line of demarcation between ordinary abrasion of feathers through wear and tear and the shedding of parts of feathers by subtractive change is clearly discernible.

Skins show that there is no relationship between the degrees of wear as between sexes at any given period. The wear apparent in the female is never so extensive nor are her colour changes so great, where they occur at all, as compared with the male.

When one considers the incidence of subtractive change one finds that it appears to be limited to species of the passerine order. One also finds wide divergencies and seeming inconsistencies between closely allied species. Nevertheless three fundamental factors are common to all.

First, melanin is the only pigment present in the tips and fringes produced at the autumnal moult and subsequently discarded when full breeding dress is acquired. It does not matter whether the remainder of the feather is lipochrome or melanin pigmented or whether it carries prismatic or structural colours through surface modification—the tips are simple in form and without adhering barbules and are either grey, buff, or brown, or reddish-brown or blackish or other intermediate shades of melanin.

Secondly, there is no conformity in the rate at which the sexes lose these tips and fringes which both acquire at the moult. Some females never lose their tips entirely. This should, of itself, disprove any pretension that environmental wear is the primary cause of shedding of these appendages otherwise the sexes would respond equally and uniformly.

Thirdly, the tips and fringes acquired by the male invariably repeat the colour tone of the female plumage. If the female is mainly brown, the male has brown tips and fringes; if she is mainly grey, then his tips and fringes are grey. This fact is most important as it affords a strong and useful clue to the elucidation of the underlying reason for subtractive change.

In considering the first point—the exclusive use of melanin, we know that melanin results from a series of chemical changes, each being a separate and arrestible step in the ladder of production and the series or steps are as reversible as they are progressive. Biochemists have shown that there are seven distinct stages in the production of ultimate black melanin each involving a definite shade of colouring except the sixth stage which is colourless. The fifth is reddish-brown, the sixth colourless and the seventh black. The red step may account for the rosy suffusions that appear on Waders at the breeding season. With respect one must hesitate to agree that a proper moult is undergone having regard to the physical strain involved in migrating, moulting while migrating and then breeding within a very short time which surely must occur with Waders that breed in the far north.

Conversely, melanin also tends to reverse or "bleach" and we have already shown (*Ibid* at page 36) that the removal of natural oil from a feather destroys its protection against chemical or light action and enables it to be readily dyed or bleached. Hence, if oil becomes deficient in the tips and fringes they are less resistant to chemical reversion or the effect of sunlight and being pigmented with melanin can become lighter or even bleach to white. This appearance of white is not that due to the absence of pigment but to the pigment in the feather having assumed its colourless form. One might term it latent pigment. Such being the case, it is possible for markings to be brought to visibility which were invisible before in the form of latent melanin. Melanin can also continue its stages under oxidation and thus tail feathers can darken without moulting, as occurs with Snow Buntings and Bramblings. Thus we can postulate that the peculiar properties of melanin have a very decided concern in the process of subtractive change.

While on the subject of bleaching, this slide illustrates this as well as ordinary abrasion. The Turnstones shown are a May and an August bird. The latter has lost practically all the chestnut colouring from its back due to true abrasion and where any is left it has bleached considerably by comparison with the May bird. The next slide of Wood Sandpipers shows a remarkable example of bleaching. The normal specimen is a June bird from Britain and the bleached specimen is a July bird from Putna in India. Possibly the effect was due

to sunlight bleaching and a deficiency of oil in the feathers. There is no question of post-mortem fading as the bird was like this when shot in 1938 and was also much abraded.

In previous papers we have claimed that the tips and fringes tend to become dry and friable due to lack or loss of oil and have suggested that this may have resulted from a break in the flow of natural oil or secretion to these parts. We have not, however, been able to find any structural modification in feathers having these special tips and fringes which would account for this but a more powerful microscope might disclose such constriction at the point where the tips break away. Nevertheless, some photomicrographs of feathers of Snow Buntings and Bramblings do show some points of interest.

The first of a feather of a May taken cock Brambling shows that the structure of the barbules is constant throughout but that the tips are worn and broken off. The next, of a feather of a cock Snow Bunting, shows a similar state of affairs. On comparing this feather with one from a female at a comparable period, the wear in her case is clearly not so extensive and the barbules tend to be set at a wider angle from the shaft than in the case of the male. Comparing feathers from both a cock and a hen Brambling side by side on the same photo, we confirm the same differentiation between the sexes. In both cases also the drying of the tips of the cock feathers seems to cause the barbules to turn inwards and lie closer to the shaft of the barb. The general formation of cock feathers is also shown to be thicker than the corresponding female feathers. There seems no doubt that there is a difference between the subtractive tips of the sexes in these two species at least.

Photos taken by reflected light show how clear-cut is the transition between the pigmentation of the main feather and that of the tip. This slide of the feather of a cock Brambling—with yellowish-white tips—and one of a feather from a cock Snow Bunting—when the tips were pure white—show clearly that there is a clear-cut and sudden rather than a gradual transition from one colour to another. The sudden deficiency of colouring in the shaft of the barb is particularly noticeable. It may well be that this sudden transformation supplies the clue to the inhibition in the absorption of oil or oily secretion for such a flow can only occur through capillary action by and through the cortex or structural casing of the feather and must first proceed up the shaft. If there is a sudden change in the texture of that shaft by a break in the pigmentation that change in texture would probably break the capillary flow and thus deprive the tips of natural oil.

So much for the pigmentation of the tips and fringes.

In dealing with the second point—the disparity in the rate of wear as between the sexes—this slide shows a close-up of male and female feathers of Bramblings taken in December and April, the male feathers forming the upper line. The amount of wear is patently different, those of the males being considerably shortened and more worn by April although in December the sexes were comparable in the length of their tips. Environmental wear, being equal, obviously could not account for the distinction.

The third common factor is that the colour of the tips and fringes of the male reproduce the colour of the female plumage on the corresponding parts of her plumage. This will already have been observed in the cases of the Snow Buntings and Black Larks, the latter being a particularly striking case due to the contrasting colours of the male.

The next slide shows two cases where male and female plumages are contrasting—the Virginian Cardinal or Red Bird, where the male is red and the female brown, and one of the American Orioles (*Icterus bullocki*) where the male is orange-yellow and black and the female a greenish-grey. The Red Cardinal has brown tips and the cock Oriole greyish tips of the same shade as the female colouring. There is another of these Orioles (*Icterus spurius*) where the male has a glossy blue-black back while the female is greenish-grey. Here again the male acquires at the moult long contrasting tips of greenish-grey.

Among the Buntings there are many instances of this conformity between the sexes and wide nuptial plumage differences. This slide shows two examples. The Black-headed Bunting (*Emberiza melanocephala*) and the Chestnut Bunting (*Emberiza rutila*). Both males have chestnut mantles but the females are of quite different shades of brown. Those shades are, however, reproduced by their respective males in their mantle tips.

An even more interesting development is shown in the next slides. The first is of the underparts of the Redstarts already shown earlier, and, looking at the colouring of the breasts and underparts of the hens in the lower row, it will be noticed that just after the moult and for some time thereafter they have acquired a reddish suffusion which, while present, tends to converge, as it were, their colouring to that of the males. Similarly, in the next slide of the underparts of the Rock Thrush, a comparable convergence is apparent and this too gradually disappears. The Starling is another case where there is a similarity between the sexes through an improvement in the female plumage.

This tendency for the plumage colouring of the sexes to converge at the moult and diverge later is common but its implication has not, it appears, been considered previously in the light of there being a temporary improvement in the colouring or markings of the female.

So much for the three constants in subtractive change, namely, melanin as the sole pigment involved, unequal shedding of tips and fringes as between the sexes, and the reproduction by the male of the female colouring in its tips and fringes. As to this last point it is noteworthy that male tips of the female colouring are, as a general rule, carried from and after the moult for a period upwards of four months, thereafter they tend to change colour, shorten, and finally drop off when the male attains full breeding condition.

What of the incidence of subtractive change?

Here one is faced with so many variations and forms, so many inconsistencies that the whole process seems indeterminate and incapable of exact analysis. Some species have tips to head and neck feathers only, others are only affected on the upperparts, others have

the underparts tipped in addition, while other species, closely associated with those that have tips and fringes, are themselves devoid of such appendages and not subject to subtractive change at all. The Finches are a mixture. The Linnet, Redpolls, Twite and Siskin undergo subtractive change of different parts of the body, while the Goldfinch and Hawfinch and Bullfinch are not affected. Among our Warblers, the Blackcap alone acquires brownish tips at the moult. The Buntings vary enormously in the extent and parts of the body on which tips are acquired. The Wagtails, too, are variable. Each family and even each genus discloses wide divergencies not only in the incidence but also in the basic colouring of the tips and fringes—there seems no uniformity anywhere.

As these additions are acquired at the autumn moult, one's first reaction is that they may be adopted as an insurance against winter cold and their loss in the warmer months is an advantage. It is true that some instances can be adduced where the tips are longer in northern than in southern species of associated types and conversely there are others quite the reverse. Thrushes feed in flocks in winter under conditions of little cover but they are less protected by the growth of fringes than Buntings whose habit is to resort to open country at all seasons. The Dartford Warbler, that winters here, has no better protection than the other Warblers that leave us for warmer climes. Why should the Blackcap acquire tips? Accordingly one must discard this solution.

Then one might argue that the obscuring tips have a protective function. Some species, such as Lapland and Snow Buntings, would be very conspicuous in winter were they to retain their summer breeding dress. Yet again there are so many exceptions especially among birds that tend to become nomadic and therefore more conspicuous in winter, especially when in flocks, that one has to discard this line of approach also. Nevertheless the fact that the majority of subtractive moulters acquire obscuring tips on the upperparts is, of itself, a protective feature when ground feeding but there is another reason to be adduced for this later.

If a list of British or even all birds is consulted and those species that do and those that do not moult subtractively are extracted therefrom, the result is as enlightening as the first appearance of the pieces of a jigsaw puzzle tipped out in a heap. There seems no main theme, no apparent direction, running through the process.

And yet there is one aspect, one approach, which has the merit of supplying a solution to the many wide divergencies and which appears to fit the facts together into a logical picture. It may or may not be the true principle underlying subtractive change but it does have the advantage of coherence and is, therefore, offered for consideration at the risk of being accused of oversimplification.

The puzzle can be solved by treating subtractive change purely as a physiological and sexual process. All the numerous variations and contradictions then fall into line and are explicable.

Within that broad basis, we find that where the sexes are outwardly similar there is no subtractive change. Where they are outwardly dissimilar, there is subtractive change unless the species fall within an exception which will emerge later. The Snow and Lapland Buntings have a dissimilar sexual colouring and moult subtractively; the Bullfinch and the Blackbird also have the sexes different in appearance but they do not moult subtractively. Why the distinction? It should be obvious that if subtractive change is purely physiological and sexual, that is to say, operates within the concept of sexual selection, it will have no value to those species that habitually pair for life, or immediately after the moult, or whose pairs keep together throughout the non-breeding season. Sexual competition in such cases is reduced to a minimum since it is the tendency of formed pairs to become non-social and sedentary rather than nomadic and thus encounter little sexual interference. Hence, with the Blackbird that pairs up in the autumn and holds a winter territory for a time, and the Bullfinch, whose pairs keep together throughout the winter, subtractive change is of no merit or advantage.

On the other hand, where individuals of a species become nomadic, whether singly or in flocks, outside the breeding season, it must be a racial benefit for sexual characteristics to be masked during the non-breeding seasons. Imagine the strain on Buntings as a race were all the males to retain full summer plumage throughout the year. The very essence of the acquisition of obscuring tips and fringes and of the process of subtractive change is to ensure sexual indifference outside the breeding season and sexual attraction when that season starts.

On these premises, we can arrive at a formula which appears to fit all the cases of subtractive change among passerine birds. Shortly it is:—

1. Where the sexes are similar—there is no subtractive change.
 2. Where the sexes are dissimilar
and :—
 - (A) the species is sedentary or non-social during the winter, with pairs keeping together—there is no subtractive change.
or,
 - (B) the species is nomadic, either singly or in flocks, during the winter, and pairs up in the spring —there is subtractive change.

Actually 2 (A) can be expressed in many ways such as including the words "pairs for life, or in the autumn" but the fact that the pairs keep together through the winter sufficiently covers these cases. The simple position is that species having dissimilar sexual plumage and who pair up annually in the spring undergo subtractive change, all other species do not. Admittedly the use of the words "similar" and "dissimilar" is a stumbling block to an exact differentiation. We cannot say how far, if at all, slight differences are noticed by birds and to arrive at our evaluation we have used an arbitrary assessment in

that the word "dissimilar" implies "displaying pronounced differences of colouration or markings as to be readily distinguished by other birds when feeding together." When feeding together is the operative provision. A more exact definition is impossible. What we have to deal with is the variations in head and neck markings as well as broad distinctions on mantle and rump. There is no doubt that head and neck markings are distinguished by other birds but how extensive they must be to ensure recognition one cannot say.

Looking at this formula in relation to particular species it will be found that inconsistencies between closely allied birds fall quite readily into their proper groups. The Goldfinch and Hawfinch have no subtractive change because their sexes are similar. They are in Group 1. The Bullfinch having dissimilar sexes but with its pairs keeping together through the winter falls into Group 2(A) with no subtractive change but the Greenfinch which is nomadic during winter in flocks falls into Group 2(B) and moults substractively. The Stonechat and other Chats are nomadic in winter, more singly than in flocks, and also fall in Group 2(B). The Corn and Little Buntings have hardly any sexual differences and do not undergo subtractive change and fall into Group 1 while the Yellow, Snow and Lapland Buntings with dissimilar sexes and nomadic winter flocks undergo subtractive change and fit into Group 2(B). The Blackcap among the Warblers, has the exception of dissimilar sexes and produces obscuring tips at the moult thus falling into Group 2(B). The other Warblers fall into Group 1. The Chaffinch is an instance where, although the sexes are different, there is only a small degree of abrasive moult. Strangely enough this fits the rule for the reason that the sexes tend to segregate into separate flocks in the winter. One can of course also point to the difference in head colouring to place the species in Group 2(B) without resorting to the other habit as an exception that proves the rule. Then again if one compares the habits of the Blackbird with those of the Ring Ousel, one can see quite readily why the Blackbird has no subtractive tips while the Ring Ousel has. And so one can go on through all the species and fitting them quite readily into their proper groups and conversely, having a knowledge of their individual habits, can forecast whether there will be tips and fringes after the moult or not.

If the rules are right, then one should occasionally come across some instances of reversion. In this connection cock Bullfinches of the British race sometimes occur with brownish fringes to the mantle feathers—a fact which seems to suggest that this species at some time did undergo subtractive change and, if so, must have been nomadic and unpaired during the winter.

If our conjectures are correct then, biologically, substractive change has a survival value of great importance. How it originated, however, is a matter of surmise, where your guess is as good as ours.

For our part, we postulate that a bird's way of life is dictated by two instinctive urges—survival and procreation—and that everything else is complementary to these two. For both requirements, adequate food is essential. For survival, food is necessary at all times and in

all places: for procreation it is required at the right time and in the right place. So, for its own survival, a bird can afford to become nomadic, but for breeding, it must be sedentary. For its better protection while nomadic, it can also become gregarious. Gregarity is an advantage during seasons of little-cover and little food. Birds in flocks find their food collectively and are mutually protective.

Anything that tends to detract a bird from diligently seeking food and protection during periods of scarcity would also tend to depreciate its chances of survival. Quarrels between sexes and between males; sexual stimulation, whether by displays, aggressive or otherwise, by colour patterns, song, the adoption of exposed perches and even of territory, would all lead to a diminution in the survival rate if indulged in at the wrong time or the wrong season. On the other hand, anything that tends to act as a brake on unseasonal sexual and breeding activity, must increase the survival rate. The acquisition of obscuring feather tips by those species that are nomadic and unpaired during the non-breeding season when there is scant cover and scant food, would, we submit, have such an inhibiting effect and far more efficiently than any other method short of the complete segregation of the sexes. To a lesser degree, too, these obscuring tips on the upperparts have the advantage of protectively disguising ground feeding flocks while the temporary similarity between the plumages of the sexes particularly in regard to the underparts already alluded to, would also discourage sexual precocity. A bird that joins a flock from behind sees only the backs of the feeding birds, once alighted among them its attention is now directed to the underparts and thus both features of similarity between the sexes act as brakes on unseasonal activity.

There is another aspect of the mechanics of subtractive change worth considering. One accepts the proposition that lengthening daylight is the trigger or lever, that sets the physiological machine in motion towards the ultimate goal of procreation. Food is the motive power. Food increases in quantity and vitamin quality as light increases. The machine, energised by adequate food, produces power in the form of secretions which in turn bring about sexual maturity of the organs. Once sexual maturity is organically attained, the machine does not stop automatically. It goes on producing secretions. In our submission, these secretions, surplus to the main function and subsequent to its attainment, permeate the fatty parts and through them the feathers attached to those parts and such secretions, being oil-borne, deepen colour tone by absorption, and hasten the casting of the drying tips just as dead skin is forced off by fresh skin. Viewed in this light, subtractive change is the culminating act in the physiological sequence which produces breeding condition. Viewed in any other light, subtractive change is an unrelated, indeterminate, process entirely at the mercy of external agencies of varying nature and extent and would thus have no merit at all. Nature, they say, never does anything in vain.

Corroboration of this view can be found in the partial moult of head and neck parts in some species and the changes in soft part colourings, such as beaks and legs, through secretions.

If the shedding of tips is a simple unexhausting method of effecting sexual colour change, why should some species resort to the debilitating method of actual moult of certain parts of the head and neck? Surely when attaining breeding condition the less weakening method would be adopted. That it is not applied to parts of the head and neck seems simply to arise from the fact that it cannot because some of the feathers there are not, like other body contour feathers, attached to fat parts and therefore cannot be dealt with by secretions, oil-borne and physiological in action.

As to the other point, we referred earlier to the specimens of Starlings having been chosen to illustrate one physiological race by having the beak colours to correspond with the extent of abrasion. Beak colouring, is brought about by secretions, and the fact that that keeps step with subtractive change seems to confirm that subtractive change is also physiological and controlled from within and not at the mercy of something without the bird.

Without wishing to be controversial, we consider that if our conceptions are correct, some aspects of territory acquisition require revision but we cannot deal with that aspect now. Nor can we deal with the question as to whether subtractive change is a primitive feature or of more modern development except to point to two factors—one, that the main pigmentation is in the centre rather than at the tip of the formed feather, and the male tips having female rather than juvenile colouring, which is the primitive type, both point to adaptation rather than a persistence of a primitive feature. We suggest that male sexual characteristics and the specialised use of tips are both adaptations. The tips themselves, being of female colouring, may be survivals of the time when both sexes were of similar colouring which would approximate to the present female colouring, but we cannot conceive that it is a mere accident that in those passerine birds having strong sexual differences and that flock or are nomadic and do not pair up until the spring, we should find subtractive change of these tips, whereas in others and in other groups of birds we find no such appendages.

It is our submission that subtractive change has been evolved as a simple and effective means of securing in those species having pronounced plumage distinctions between the sexes and which only pair up in the spring that the survival rate shall not be impaired through precocious or unseasonal sexual activities. It is also an efficient yet inexhausting method of plumage change and of timing that change by physiological means to the physical state of the male bird thus ensuring that the more virile and suitable individuals shall survive to procreate the race at the best time and under the best conditions.

Our thanks are due to the authorities of the British Museum (Natural History) and the Royal Scottish Museum and to Dr. J. M. HARRISON for making skins available, and particularly for allowing one of us (CPS) to photograph them and exhibit the results to-night. Some of the specimens shown on the coloured and other slides are here to-night which members may wish to inspect to check our claims.

Finally we feel that we have now transformed the "old wives' tale" of colour change without a moult from fiction into fact and that in this and in our previous papers have been able to deal with the twin subjects of colour change without a moult and subtractive change itself without inconsistencies or contradictions as one coherent and logical whole. This will, we trust, lead to a fruitful discussion and new approach on the subject of plumage characteristics and their effect.

Col: F.O. Cave on —

Some Notes on the Banded Francolin, *Francolinus schlegelii* Heuglin.

In "Bulletin" B.O.C. 68, p. 3, 1947, I recorded a note on Heuglin's Banded Francolin. Briefly, I noted that it had been first found near Wau, in the Bahr-el-Ghazal Province of the Sudan in 1863, and had also been found in 1914 and 1934 at Bozum, 800 miles to the west in French Equitorial Africa. I then went on to relate how I re-discovered it in the Sudan, near the type locality, in 1946 and 1947.

As most of my information had been obtained at second hand, and as the specimens had been procured for me by others, I was determined to visit the area myself as soon as possible. This opportunity came to me last November when I was able to visit Mboro, about 25 miles south-west of Wau. I started walking in a south-westerly direction, and after forty-five minutes I was informed that I was in the Francolin country; after another half hour's walking they proposed that I should camp. I could see nothing special in the country to account for the species being so localised: it is thickly wooded country with a proponderence of *Isoberlinia doka*, known to the natives as "Ka". There are also open stretches or glades with short grass and flat ironstone outcrops. The natives have a few scattered habitations, and various crops such as durra, simsim, and telebun. The native name for this Francolin is Mbakpa.

The sub-chief who accompanied me thought that the grass was still too long to find the birds, but he sent men out to look for them. As I recorded in 1947, the method is to listen for them calling at sunset, and to mark down the trees under which they will spend the night. During the middle of the night a man goes out with a lighted faggot and a sort of small basket fixed to the end of a long pole. As he approaches the bird he hides the flaming faggot behind his body and only brings it forward as he is about to bring his basket down on to the bird. It is interesting to note that the birds usually sleep in pairs, each bird of a pair facing in opposite directions.

I spent four days in the "Mbakpa" country and regret to say that I never saw the bird alive except when brought in to me by the natives. One was heard calling in the woods the first evening after I arrived there, and in all the natives succeeded in obtaining five specimens, two males and three females.

I cross-examined the sub-chief very thoroughly in order to try and get as much information as possible. He insisted that they were very localised, though he did not know why; he based this information on

the fact that in 1946-47 he had had men hunting them for me far and wide, and that they were only found in this one small area. He said that the bird is closely associated with the "Ka" tree on which is found a certain caterpillar which appears in April; the Mbakpa is said to eat these caterpillars as they fall to the ground. Of other food, it appears to be very fond of simsim, and will be found in these crops when they are ripe. It possibly eats telebun, but not durra.

I asked the sub-chief about the breeding season, and he stated that this is about September or October, and that only two eggs are laid. I told him that I had been informed that eggs were laid in April or May, and sometimes as many as ten. He scoffed at these suggestions, insisted that September—October was the correct breeding season and that never more than two eggs are laid; he would not even admit three eggs.

I was lucky enough to obtain two pairs of freshly laid eggs; the natives who brought them to me each followed the method of burning the grass, watching for the Francolins to fly away, and then running in to collect the eggs. I am the first to admit that this is not conclusive evidence, but I have no reason to believe that they have foisted the eggs of some other species on to me; they played fair with the bird itself, and I am prepared to believe that they have played fair over the eggs. I must leave it to the experts to say what they think.

Finally. I showed my specimens of this Francolin to the mission schoolboys at Mboro in the hopes of discovering whether it exists in other places, for the boys came from many localities other than Mboro. There was much disagreement, but as the boys were about to go home for their holidays, I asked them to try and find specimens and to send them through the Mission to the Governor of the Province. Just before I left the Southern Sudan in April, a specimen reached me in an advanced state of decomposition; I was unable to make anything of it as a skin, but it was undoubtedly a female Banded Francolin, and I have since learned that it came from Raga which is nearly 200 miles west of Mboro, that is to say in the general direction of Bozum.

Professor E. STRESEMANN mentioned that there is one of Heuglin's specimens, an adult-female, in the Berlin Museum.

New Races of a Courser, Woodpecker, Swift, Lark, Wheatear, and Serin from Africa.

Colonel R. MEINERTZHAGEN described the following six new races and exhibited specimens:—

CURSORIUS CURSOR THERESAE, new race.

Description.—Differs from *Cursorius cursor rufus* Gould, in having the mantle, paler, less rufous and more isabelline, the blue of the nape usually paler and purer blue and the forehead always a paler chestnut. Breast a more isabelline colour and not so brown; black belly-band less well defined.

Description.—So far only known from Little Namaqualand south of the Orange River around Pofadder and Springbok.

Type.—Adult male, near Springbok, Little Namaqualand. 7 May, 1949. In the Meinertzhangen collection.

Measurement of the type.—Wing 138mm.

Material examined.—A large series of *Cursorius cursor rufus* in the British Museum from the High Veldt of South Africa and four specimens of *Cursorius cursor theresae* recently obtained from Little Namaqualand. The differences ascribed to this new race are perfectly normal, Little Namaqualand having a sub-desert climate with a minimum rainfall.

GEOCOLAPTES OLIVACEUS THERESÆ, new race.

Description.—Top of head dull blue-grey, not olive green as in *Geocolaptes olivaceus* (Gmelin). Mantle browner, not so yellow or olive. Throat whiter and not buff. Size as in *G. o. olivaceus*.

Distribution.—The mountainous country around Springbok, Little Namaqualand, where it is not uncommon.

Type.—Adult male. Ten miles north of Springbok, north-west Cape Province. 8 May, 1949. In the Meinertzhangen collection.

Measurements of the type.—Wing 128mm.

Material examined.—A large series of *G. o. olivaceus* from Cape Colony, Transvaal and Natal, in the British Museum and a single pair of *G. o. theresae* from the type locality. I can trace no previous record of this species from Little Namaqualand. The series of *G. o. olivaceus* shows that specimens from drier areas (Kalahari, etc.), tend to be paler than others from near Cape Town and Natal, though none of them approach *G. o. theresae* in the blue-greyness of the head.

APUS AFFINIS THERESÆ, new race.

Description.—Differs from *A. a. affinis* (Gray) in being a much paler bird in all respects and more nearly resembles *A. a. galilejensis* (Antinori) from which its differs in having the crown and forehead not a mouse-brown or even pale mouse-brown, but a grey-brown, almost blue-grey.

Distribution.—Only so far known from the type locality, Brandvlei, north-west Cape Province, South Africa.

Type.—Adult male, Brandvlei, Cape Province, 3 May, 1949. In the Meinertzhangen collection.

Measurements of type.—Wing 127 and of co-type, a female on same date and at same place 136mm.

Remarks.—I have examined the large series of *A. a. affinis* and *A. a. galilejensis* in the British Museum and my own extensive series including topotypical specimens from northern India and the Sea of Galilee. I consider *A. a. abyssinicus* Streubel, 1848; Massawah, Eritrea, to be indistinguishable from *A. a. affinis* of India, West African specimens being sometimes slightly darker than East African specimens. (See also Bannerman, Ibis 1932, p. 686; Bannerman, Ibis 1924, p. 224; and Grant and Praed Bull, B.O.C. 1937, p. 21).

The two specimens of this new race were obtained from a small colony of some dozen birds apparently nesting in huts; though no nests were seen, birds were passing in and out of eaves.

Though Roberts ("Birds of South Africa," p. 157) states this bird is a common resident species, I personally, after four years residence in that country have never come across it. Niethammer and Hoesch ("Vog. Deutsch-Sud-West-Afr.," p. 204) did not obtain or observe it in Namaqualand though Bradfield obtained a specimen at Quickborn in Damaraland.

The development of a pale race of this swift from the arid region of south-west Africa is not unexpected and that it should approach the arid-region race of the Mediterranean-Palestine-Sind area (*A. a. galilejensis*) rather than the more humid region race of the Indian Peninsula and tropical Africa (*A. a. affinis*) is quite normal and further demonstrates desert influence on plumage whether the animal benefits or not; whatever camouflage a bird like a swift adopts, it can have no selection value, for movement cancels out camouflage. There can be no question of selection acting on variation. Some other agency is at work and about that we are ignorant; in any case this is not the place to embark on lengthy discussion about a subject which incites curiosity and about which I have a great deal to say.

CALANDRELLA SCLATERI THERESÆ, new race.

Description.—Paler and greyer above than *C. s. sclateri* (Shelley) and considerably paler below.

Distribution.—So far only known from near Pofadder.

Type.—Adult female. Twenty-five miles east of Pofadder, 6 May, 1949. In the Meinertzhangen collection.

Measurements of the type.—Wing 80, culmen from skull 13mm.

Material examined.—Three specimens of *C. s. theresæ* from the type locality and eleven specimens of *C. s. sclateri* from the western part of Cape Province and Damaraland.

CALANDRELLA (SPIZOCORYS) SCLATERI. (Shelley).

Calandrella sclateri (Shelley), Birds Afr., 3, 136. 1902: Hountop or Stormtop R. Great Namaqualand. Type in British Museum; collected by Anderson who clearly refers to this specimen under *Alauda conirostris* (Bds. Damaraland, p. 193). Collected in June, 1862, when Anderson was at Objimbinque between Windhuk and Walvis Bay. The type is in worn plumage and very dirty.

Calandrella sclateri capensis, O-Grant. 1913: Philipstown, Cape Province. Type in British Museum; a badly prepared specimen but in fresh plumage and differing in no respect from the type of *C. sclateri*.

Seven specimens of this small lark were collected near Prieska and Upington in Cape Province and near Pofadder in Little Namaqualand.

ENANTHE LUGENS VAURIEI, new race.

Description.—Differs in the male from *O. l. lugentoides* (Seeböhm) in having the basal half of the outer tail feathers pale orange and not white and the crown slightly tinged brown, not so pure grey. Differs from *O. l. lugubris* (Ruppell) in having basal half of tail and rump a paler orange and the crown whiter. The female differs from *O. l. lugentoides* in having a slight orange wash on basal half of tail and rump, and from *O. l. lugubris* in being altogether a browner and paler bird. Mantle of female as in *O. l. lugentoides*.

Distribution.—Only so far known from Erigavo between 6,000 and 7,000 feet in eastern Somaliland and the Warsangli country.

Type.—Adult male, Erigavo, British Somaliland, 6,000 feet, 20 January, 1949. In the Meinertzhagen collection.

Measurements of type.—Wing 84, culmen from base 17mm.

Remarks.—Inhabits the rocky ravines near Erigavo, Medishe, and on Daloh Mountain up to 7,000 feet. *O. l. boscaueni* Bates from the Hadramaut has a completely white crown and is a perfectly valid race, blending with *O. l. lugentoides* in the western Hadramaut, southern Arabia.

Based on three males and three females from Erigavo and a female in the British Museum from the "Warsangli country" obtained by Archer.

This race is of great interest as it confirms the close relationship between the *Œ. lugubris* and *Œ. picata* groups.

I am naming this race after Mr. Charles Vaurie who has recently reviewed the eastern races of this species, though I differ in my treatment in regarding *Œ. lugens*, *Œ. picata* and *Œ. lugubris* as conspecific.

SERINUS ALBOGULARIS THERESÆ, new race.

Description.—Differs from *S. a. albogularis* (Smith), in having a much paler mantle, grey-brown instead of brown or sometimes reddish-brown and the underparts a paler tone. Differs from *S. a. crocopygia* Sharpe, in having the rump and upper tail coverts greenish-yellow instead of bright lemon yellow. Eyebrow apparent but not well marked. It is also a shade paler on the mantle than *S. a. crocopygia*.

Distribution.—Only so far known from 50 miles east of Springbok in Little Namaqualand, Western Cape Province; and from Aus in the extreme south-west of South West Africa. Abundant on a rocky ridge east of Springbok and a few seen among rocks at Aus.

Type.—Adult male, 50 miles east of Springbok, Little Namaqualand. 7 May, 1949. In the Meinertzhagen collection.

Measurements of type.—Wing in quill. Wing of cotype 80mm. The type is in very fresh plumage and has only just completed body moult.

Remarks.—I have examined a considerable series of *S. a. albogularis* and *S. a. crocopygia* from the Cape Province and South West Africa

respectively in the British Museum. Another race to be considered is *S. a. sordahlæ* Friedmann, Proc. Biol. Soc., Wash. 45, p. 65, 1932; Brukkaros Mt., S.W. Africa, between Mariental and Keetmanshoop, which is said to be as dark as *S. a. albogularis* but with a longer and relatively less swollen bill, and can therefore have nothing to do with this new race.

On *Eremopterix leucopareia cavei* Grant & Mackworth-Praed.

Colonel F. O. CAVE sent the following:—

In Bull, B.O.C. 61, p. 62, 1941, C. Grant and Mackworth-Praed described this new race on a single female specimen obtained by me in the south-eastern Sudan. I have now obtained four males and one female from the same area and find that they are referable to *Eremopterix signata* (Oustalet). The females of these two species are almost identical, and accurate identification can only be assured by a comparison of the males, which has now become possible from the above specimens. I have compared my female with the type of *Eremopterix leucopareia cavei*, and find they are identical; I have compared them both with the females of *E. leucopareia* and *E. signata* and find that the large bills belong to the latter species. Moreover, my female was shot in company with a male which is clearly referable to *E. signata*.

I have also compared my four males with the series in the National Collection and consider that they can be separated from typical *E. signata*. Therefore *Eremopterix leucopareia cavei* now becomes *Eremopterix signata cavei*.

Description of male.—Similar to *E. signata signata* but clear grey brown, not sandy brown; the white of the underparts a purer white with no creamy wash.

Measurements of four males.—Wing 77-79·5, exposed part of culmen 9·11, depth of bill at base 7·5, tail 44-46, tarsus 17-18mm.

Distribution.—Extreme south-eastern Sudan from Atoporopos Hills to Lake Rudolf. Two birds in the National Collection from Turkana District of Kenya agree sufficiently with this race to be included in its distribution.

On the Little Grebe, *Podiceps ruficollis* (Pallas) from the Thames Valley.

Colonel R. MEINERTZHAGEN sent the following note:—

Four adult breeding birds taken in April and July from the Thames around Pangbourne are considerably blacker above and below than others taken in many parts of the British Islands and more closely resemble specimens from Holland which are topotypical of *P. r. ruficollis*. Breeding birds from elsewhere in the British Islands,

especially from Ireland are whiter below, but I hesitate to go further into the matter until I have seen more material in breeding dress from all over the British Islands.

Previous to 1939 the Little Grebe was common near Pangbourne, twelve breeding pairs being counted between Goring and Reading. Between 1940 and 1945 not a single pair bred on that stretch of the river which was then being used as a practise camp for bridge building and light landing craft. Army launches at high speed were constantly on the move. The resultant wash swamped the grebes' nests and they left the area but the moorhen had more sense by building in the bushes and trees overhanging the river. In 1943 I counted eight moorhens' nests built well above the water line, one of which was four feet from the ground. But in 1945, under more peaceful conditions, the moorhen had reverted to water-level nests.

On the status of *Parisoma leucomelaena* (Hemprich and Ehrenberg).

Colonel R. MEINERTZHAGEN sent the following note:—

Currucula leucomelæna Hemprich and Ehrenberg, was described from Arabia in 1833. It is a mystery how this bird has now found its way into the genus *Parisoma* Swainson, where it finds itself grouped with four or five other species which it resembles neither in colour pattern, bill, nor habit. In all these respects it agrees with and fits well into the genus *Sylvia* Scopoli.

Sylvia blanfordi Seeböhm was described from Eritrea, the correct reference being, Proc. Zool. Soc. p. 979, 1878, and not that given in Syst. Av. Æthiop., p. 404. This bird can scarcely be separated from *Currucula leucomelæna*, being on the whole, in fresh plumage, slightly browner and not so grey.

Parisoma blanfordi somaliensis Sclater and Praed 1918: Somaliland, differs from *Currucula leucomelæna* only in having slightly more white in the tail, a character which is not too constant.

I have examined a good series of these three races and know them well in the field. Without question they are all conspecific and should be placed in the genus *Sylvia*. The species comes very near to *Sylvia hortensis* (Gmelin) from which it cannot be distinguished in the field. I have had them both before me in the same bush in Arabia. In fact, if it were not for the longer forwardly-directed rictal bristles, I should treat *S. leucomelæna* as a race of *S. hortensis*.

We therefore have;

Sylvia l. leucomelæna. South West Arabia. Paler head and mantle. Tips of outer tail feathers with small white spot.

Sylvia l. blanfordi.

From Port Sudan to Eritrea. Darker head and mantle. Tail similar.

Sylvia l. somaliensis.

British Somaliland. Head not so dark as *S. l. blanfordi* but mantle similar. Much more white (usually) on the two outer tail feathers. In all three races the crown of the male is darker than that of the female which conforms to the *Sylvia*-pattern.

NOTE:—*Sylvia norrisæ* Nicoll from the Fayoum is a race of *Sylvia melanocephala* (Gmelin), having nothing to do with *S. leucomelæna*. See Syst. Av. Æthiop., p. 404, footnote.

I have examined the type and three specimens of *Parisoma buryi* Ogilvie-Grant. They should not be in *Parisoma* and should probably also be in *Sylvia*, though they have a shorter rounder wing than ever occurs in that genus. I have not seen the species in the field nor is there any record of their habits. But for the moment they are better left in *Parisoma* until better prepared material is available and more is known of their habits and juvenile plumage.

On the genera *Erythropygia* A. Smith 1836, and *Agrobates* Swainson 1836 ; and the status of *Erythropygia hamertoni* Ogilvie-Grant.

Colonel R. MEINERTZHAGEN sent the following note:—

I have on more than one occasion pointed out the lack of characters alleged to separate *Erythropygia* and *Agrobates* but authors continue to keep these two genera distinct and widely separated, the former being placed in the *Turdidae* and the latter in the *Sylviidae*. I have sought in vain for generic differences and can only confirm that these genera should be fused, *Erythropygia* having priority.

In 1906 Ogilvie-Grant described *Erythropygia hamertoni* on specimens from the interior of Somaliland. I have examined the type in the British Museum. It is not in good condition and has a wing measurement of 72mm. In every respect it resembles *Erythropygia galactotes minor* (Cabanis) except that it is considerably smaller and slightly darker, browner not so red; I consider it a race of *Erythropygia galactotes*. Sclater, Syst. Av. Æth. 484, keeps it a separate species.

On the whole *Erythropygia* is better placed with the *Sylviidae*. The young are unspotted. The general pattern of the tail conforms to that of *Scotocerca* and *Prinia*, the nest is a large untidy structure, off the ground, and the eggs are more heavily spotted than is usual in the *Turdidae*. The habit of raising the tail over the back is similar to that of *Prinia* and *Scotocerca* and the song closely resembles that of the garden warbler. Both *Agrobates* and *Erythropygia* have a graduated tail, a feature unusual in the *Turdidae*.

On the occurrence of certain species in Nyasaland.

Mr. C. W. BENSON sent the following six notes:—

(1) *Anas capensis* Gmelin. (*Querquedula capensis*, Mbara, "Ibis," pp. 167, 174, 1901. See also Phillips, "Nat. Hist. of Ducks," 2 p. 268, 1923.) *Turdus stormsi* Hartlaub is recorded in the same "Ibis" paper from Mbara, and it has been shown that in that particular instance, at any rate, Mbara is the same place as Abercorn, in Northern Rhodesia, see Bull. B.O.C., 67, p. 36, 1946. Therefore the occurrence of *Anas capensis* in Nyasaland cannot be accepted without further evidence, not so far forthcoming.

(2) *Galachrysa nuchalis* (Gray). (*Glareola nuchalis*, Lake Mweru and Karungwisi, "Ibis," pp. 167, 174, 1901. These localities are in Northern Rhodesia, see "Ibis," pp. 163, 164, 1901. There is no subsequent record from Nyasaland.

(3) *Eremialector gutturalis* (Smith). (*Pterocles gutturalis*, Chisila River Plains, near Lake Mweru, "Ibis," p. 24, 1894. Also in Northern Rhodesia. There is no Lake Mweru in Nyasaland. Specimens from "N. Lake Niasa" or "N. Niasa" are also extra-limital, see Ann. Trans. Mus., 21, p. 157, 1949. Incorrectly recorded from Nyasaland by Sclater, "Syst. Av. Ethiop.," 1, p. 157, 1924.

(4) *Apus apus toulsoni* (Bocage). (*Cypselus toulsoni*, coll. Whyte, Zomba, Oct., "Ibis," p. 4, 1894. See also Reichenow, "Vög. Afr.," 2, p. 380, 1903, and Belcher, "Birds of Nyasaland," p. 153, 1930, who misquotes locality as Mlosa and collector as Sharpe.) From a perusal of the British Museum register of specimens, and the accounts of Whyte's Nyasaland collections, in the "Ibis" between 1893 and 1898, the only specimen on which this record can be based is one bearing Brit. Mus. Reg. No. 93.6.1.277, collected by Whyte at Zomba in Oct., 1892, attributable to *A. a. barbatus* (Sclater), not *A. a. toulsoni*, and in fact also referred to by Belcher under *A. a. apus* (Linnæus).

Two further points may incidentally be mentioned:—

(a) Belcher quotes a record of *A. a. apus*, obtained by Sharpe at Mlosa. See also "Ibis," p. 380, 1898, and Reichenow, p. 378. This specimen, also in the Brit. Mus., Reg. No. 97.11.4.14, was correctly identified. It was collected by Whyte, not by Sharpe.

(b) The type of *Cypselus alfredi* Shelley, "Birds of Africa," 2, p. 345, 1900, (see also "Ibis," pp. 166, 172, 1901), which is in the British Museum, and must be attributed to *A. æquatorialis æquatorialis* (Müller), is from Mbara. This locality must be regarded as indeterminate, as in the case of *Anas capensis*, see above.

(5) *Cossypha bocagei* Finsch and Hartlaub. (*Cichladusa bocagei*, "Tanganyika Plateau," nor more detailed locality, "Ibis," pp. 365, 374, 1899). Nor is there any further information as to locality on

the label of the specimen, Brit. Mus. Reg. No. 99.3.1.111, or in the Museum register. It may have been collected anywhere in the area covered by the Anglo-German Boundary Commission, see "Ibis," p. 365, 1899. There is no subsequent record from Nyasaland.

(6) *Euplectes afra*, race *E. a. taha* Smith. (*Pyromelana taha*, female, Fort Lister, July, coll. Whyte, "Ibis," p. 471, 1894, and Palombe, coll. Sharpe, "Ibis," p. 554, 1898. See also Shelley, "Birds of Africa," Vol. 4, pt. 1, p. 85, 1905, and Belcher, "Birds of Nyasaland," p. 320, 1930). An examination of the register of specimens in the British Museum and from the references to Whyte's and Sharpe's collections in "History of the Collections," 2, 1906, pp. 404, 476, 511, has revealed only the following references to specimens of *E. a. taha*:—Brit. Mus. Reg. No. 94.5.5.88, coll. Whyte, particulars as above; Brit. Mus. Reg. Nos. 98.5.1.8 and 9, coll. Sharpe, locality as above. These three specimens are females, or males in immature or non-breeding dress, of *Quelea erythrops* (Hartlaub), not *E. a. taha*, though originally identified on the labels as the latter, of which I know of no other Nyasaland record. *Quelea erythrops* is widely distributed, see "Ibis," p. 330, 1942; p. 475, 1944; p. 564, 1947; p. 394, 1948; Ann. Trans. Mus., 21, p. 175, 1949.

As regards the occurrence of *E. a. taha* in Portuguese East Africa, the female recorded "Ibis," 1911, p. 236, from Tete, in the British Museum, is of *E. orix sundevalli* Bonaparte. The only other record I can trace is that given "Ibis," p. 110, 1900, repeated by Shelley, *op. cit.*, of two males collected by H. S. H. Cavendish, at Mapicuti, Cheringoma district, Mozambique, 20 Sept., in the British Museum. In the register there are five specimens recorded as "*Pyromelana*," Brit. Mus. Reg. Nos. 98.11.18.43-47. Three of these I have traced, and are not *E. a. taha*. The other two, nos. 43 and 45, the only other possible specimens which could have been so identified, I have failed to trace, owing to the re-arrangement of the collections following the war, which is still in progress. From the dates given in the register, 17 and 20 Sept., they would not have been in breeding dress, and it is likely that they also were misidentified.

I thank Captain C. H. B. Grant for checking the identifications of these specimens originally recorded as *E. a. taha*.

Systematic Notes on African Birds.

Mr. C. M. N. WHITE sent the following four notes:—

(1) On *Nycticorax leuconotus natalensis* (Roberts).

Roberts, Ann. Trans. Mus. 14, p. 239, 1931, introduced this race wing in the type from Karkloof, Natal, measures 274mm. Six from the Transvaal measure 262-267mm. The type locality of the nominate race is Senegambia and five from West Africa have wings 248-262mm. One from Northern Rhodesia has a wing 273mm. From this it looks as if the southern birds are larger but there may well be a size cline

which would render it inadvisable to separate the species into races designated by name and the present note will perhaps induce others to provide further measurements from intermediate localities.

(2) On *Ægypius monachus chincou* (Daudin).

Meinertzhagen (Bull. B.O.C. 58, p. 94, 1938) showed that eastern examples of this vulture are larger than western ones and named them *A. m. danieli*. Hachisuka (1 c. 59, p. 16, 1938) showed that Daudin's *Vultur chincou* was an earlier name for the eastern race. The measurements show a complete size cline across the range from west to east and it is submitted that whilst there is a gradual change in size, it would not be desirable to use trinomials in such a case.

(3) On *Melierax poliopterus coombsi* Roberts.

Roberts, Ann. Transl. Mus. 14, p. 239, 1931, introduced this race with the type from Zoutpansberg, Northern Transvaal. I have examined the type and believe it is merely a melanistic variant of *M. musicus* (Daudin). Roberts believed that *M. poliopterus* Cabanis was specifically distinct from *M. musicus* whereas I regard them as conspecific and I cannot see that this specimen is any evidence for introducing *M. poliopterus* as a species to be added to the fauna of South Africa.

(4) On *Circætus gallicus heptneri* Dementiew.

This race was described in O.M. 1932, p. 173, from Pischpek, Russian Turkestan as larger than western birds, and as *C. gallicus* occurs as a migrant to Africa it is necessary to consider whether or not trinomials must be used. However, this appears to be another instance of a size cline and whilst the Short-toed Eagles of Turkestan average larger, the measurements overlap and there seems nothing to be gained by bestowing trinomial designation upon the eastern birds for an inconstant average larger size.

Bird Calls.

Colonel F. O. CAVE and Dr. JAMES P. CHAPIN gave excellent imitations of the calls of various birds, which was most vastly entertaining and much appreciated by those present.

Notices.

STOCK OF THE "BULLETIN."

It is proposed to reduce the stock of the "Bulletin", but before this is done members are given an opportunity to acquire parts at 2/6 each. Applications should be made to the Honorary Secretary. No reply will be sent if parts are not available.

Please note the Hon. Secretary's address:

W. E. Glegg, Esq., Zoological Museum, Tring, Herts.

PUBLICATION OF THE "BULLETIN."

Members who make a contribution at a Meeting should hand the M.S. to the Editor at that Meeting. As the proofs will be corrected by the Editor, it is essential that the M.S. should be correct and either typed or written very clearly with scientific and place names in block letters. The first mention of a scientific name should be spelt out in full, i.e., genus, specific name, racial name, (if any) and author. Any further mention of the same name need only have the initial letter of the genus and no further mention of the author.

If no M.S. is handed to the Editor at the Meeting, a note will be inserted mentioning the contribution.

NEXT MEETING.

The next Meeting of the Club will take place on Wednesday, 16th November, 1949, at the Rembrandt Hotel, Thurloe Place, S.W.7, preceded by a Dinner at 6.30 p.m.

15 OCT 1949

PURCHASED

BULLETIN OF THE BRITISH ORNITHOLOGISTS' CLUB.

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No. II.

The four-hundred-and-eighty-ninth Meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, S.W.7, on Wednesday, 16th November, 1949, following a dinner at 6.30 P.M.

Chairman : Dr. J. M. HARRISON.

Members present :—Miss C. M. ACLAND ; Miss P. BARCLAY-SMITH ; Mrs. R. G. BARNES ; F. J. F. BARRINGTON ; MAJOR N. A. G. BEAL ; COL. F. W. DEWHURST ; W. E. GLEGG (*Hon. Secretary*) ; Miss C. E. GODMAN ; Miss E. M. GODMAN ; Capt. C. H. B. GRANT (*Editor*) ; Miss E. P. LEACH (*Hon. Treasurer*) ; Miss C. LONGFIELD ; C. W. MACKWORTH-PRAED ; Sir PHILIP MANSON-BAHR ; Lt.-Col. W. A. PAYN ; Miss G. M. RHODES ; Lt.-Commdr. C. P. STAPLES ; B. W. TUCKER ; A. WILLIAMS ; C. DE WORMS ; Col. O. E. WYNNE.

Guests :—Mrs. N. A. G. BEAL ; G. S. HARRIS ; Mrs. B. W. TUCKER.

Members, 22 ; Guests, 3 ; Total, 25.

Exhibition of a Variety of the Rook.

Dr. J. M. HARRISON remarked :—

I am showing you tonight a variety of the Rook, *Corvus frugilegus frugilegus* Linnaeus, which was sent to me by Mr. W. H. Fordham. This specimen was shot at Ashwell, near Baldock, Hertfordshire, on May 7th, 1949. It is a young female. Mr. Fordham tells me that this variety has been known at Odsey and Ashwell for many years, and that he has personal knowledge of such birds for some 45 years. The peculiarity would seem to be confined to the immature birds, and in this respect it would appear to be a recessive different from some such cases, e.g. albinism which is frequently found in adults as well. The Odsey and Ashwell rookeries are each of about 350 nests, and in a four year period seven examples of the "mottled" mutant have been recorded, so that, very roughly indeed, the incidence of this aberration would seem to be less than $\frac{1}{2}\%$, while it is claimed that during this period more than half of the young Rooks had been examined.

In 1946 one nest had three "mottled" birds and probably no normals, the other four of the seven were odd birds. The incidence of the variety might well be higher for it has to be remembered that the birds are drastically thinned out, and that in all probability only one bird per nest reaches maturity.

The occurrences of the mutant have been as follows :—in 1946, four ; 1947, two ; 1948, none, and in 1949 one, the specimen now exhibited.

In 1949 Mr. Fordham tells me that from the two rookeries 500 young birds were examined.

It is of interest to note that Mr. Guy Mannering has a specimen (now in the Maidstone Museum), which was obtained on July 14th, 1946, at Preston, in Kent, and he tells me that similar specimens occur at long intervals at Penshurst, also in Kent.

The presence of this very distinctive variety in two different counties is of much interest, and one can but conclude that there must be some interchange of birds during the breeding season, over considerable distances, to account for a recessive becoming manifest in localities widely separated from one another. Upon this aspect of the Rook's behaviour there would seem to be no information, and the subject might well repay for study.

This matter was the subject of a short note by Mr. W. H. Fordham, in *Country Life*, for June 27th, 1947, with a photograph of one of these birds.

A New Race of Chaffinch from south-west Ireland.

Mr. J. G. VAN MARLE communicated the following :—

FRINGILLA COLEBS HIBERNICA, new race.

Description.—Colour of ear coverts, cheeks, chin, throat and breast more warmly orange brown than *F.c. gengleri* Kleinschmidt, lacking the cinnamon red of many Scottish males ; brown on the back variable but tinged with orange.

Type.—Male adult, Glengariff, south-west Ireland, 5 June, 1948. In collection Sillem-van Marle, No. 5622.

Measurements of type.—Wing 85, culmen 14, tarsus 18, tail 64 mm.

Remarks.—When on a holiday in the south-west and west of Ireland in 1948, I was struck by the colour of the chin, throat and breast of the chaffinches feeding on the lawn of the hotel where I was staying.

This colour being more orange than that of English and Continental finches, gave me the idea to collect a series for comparison. I succeeded in getting a series of five males from Glenariff, Killarney, and Adare, west of Limerick. These birds are different from English, Scottish and Continental birds to such a degree, that, although nomenclature is already burdened with too many racial names for chaffinches, in this instance I feel that the south-western Irish bird should be described as a new race.

As the British Museum nor the Dublin Museum have any breeding birds, the material collected could not be compared with breeding birds of other parts of Ireland and the limits of the distribution of this race could not be ascertained.

In a series of twelve males from Ireland in the British Museum collection from outside the breeding season, two males from Campile, south Wexford 13 January 1911 and Belturbet, Cavan 26 January, 1911 are of the same orange brown colour as the series of birds in summer plumage from south-

west and western Ireland. Of the remaining ten birds four are definitely migrants. The rest being indeterminable because of their winter plumage.

Measurements of the series collected : wing, 82-82-85-86-87, culmen : 13.2-14.3 ; tarsus, 18.2-19.3 ; tail, 58-59-60-64-66 mm.

Dr. J. M. HARRISON, who exhibited the series, remarked :—

I have been able to compare Mr. van Marle's series with material in my collection from England and from Northern Ireland, as well as with birds from Scandinavia and other Continental countries, and can affirm that the series of *Fringilla cœlebs* Linnæus from south-west Ireland, which I have tonight exhibited on behalf of Mr. van Marle, present marked differences from breeding birds from England and Northern Ireland. From the latter region breeding males match *F.C. gengleri*, while the series on which Mr. van Marle has based his new name are clearly separable, on account of the much darker and richer orange-brown of the under-parts. Similarly they are also quite distinct from Scandinavian *F. c. cœlebs* and the central European race *F. c. hortensis* Brehen.

Number of Genera, Species and Races of Birds.

Colonel O. E. WYNNE made the following remarks :—

I have just completed, as far as I can, a list of the Birds of the World to date. The resulting count may be of interest.

The non-passerine birds are now all given in Peter's six volumes. The passerine Birds of the Americas, the Ethiopian and Australasian Regions are given in Hellmayr's Catalogue and Sclater's and Mathew's Systema. All these have been corrected and the necessary additions made.

No similar check list exists for the complete Palæartic or Oriental Regions and most books and local lists are made out in the reverse order i.e. *Corvidæ* first. Also many genera overlap and so I have compiled, in manuscript, a complete list of Palæartic and Oriental passerine Birds.

To obtain the numbers I have compiled a table showing all genera in their systematic order. Against each genus is shown, in pencil, the number of species and races. Totals for each family and order are abstracted.

As regards genera, there is a general tendency to group into larger genera. This was done by Hartert in his Palæartic Birds, and more recently, by Mayr and Delacour in their Birds of the Philippines and Malaysia. Vaurie, in his review of the Dicruridæ 1949, reduces the number of genera from twelve to two. Mayr estimated the total number of genera as about 2,600. My present figure is about 200 less.

As regards species, Mayr's figure in the Auk, 1946, is 8,616. This is based on a larger grouping than is usually used and on unpublished views. My figure is about 500 more.

As regards races a considerable amount of weeding out of non-valid races has recently been done. Mackworth-Praed and Grant's numerous articles are an example.

Fisher, in "Watching Birds 1942" quotes a figure of 28,000

Mayr estimates about 28,500 valid races described up to the end of 1945, but this would not appear to be an actual count. My present figure is about 2,600 less than Mayr's.

My detailed figures for non-passerine and passerine birds are as follows :—

					<i>Genera</i>	<i>Species</i>	<i>Races</i>
Non-passerine	...	...	...	...	1,065	3,702	9,779
Passerine	...	...	...	...	1,325	5,424	16,118
					2,390	9,126	25,897
					=====	=====	=====

In conclusion, I would like to pay a tribute to the many excellent revisions of genera and families which have appeared recently, and books such as Mayr's and Delacour's on the "Birds of the Philippines and Malaysia."

I would also like to express my thanks to Col. Payn, who has most kindly presented me with the "Ibis" from 1931-1945 and to the Alexander Library of the Edward Grey Institute at Oxford, which has kept me continuously supplied with books. As a result I have been able to do nearly all the work at home.

Great Auks reported from Lofoten Islands.

Explanation :—Introduction of King Penguins.

MR. WILLIAM E. GLEGG remarked as follows :—

During the course of my remarks on the eggs of the Great Auk, *Alca impennis*, Linnæus, *antea* p. 79, I mentioned that Mr. J. R. T. Pollard of the University, St. Andrews was searching for a reference to an official account of a report that a Great Auk had been seen off the Lofoten Islands in or about 1937. My statement drew the attention of our member Dr. H. M. S. Blair, who kindly offered to make enquiries among his Norwegian friends in the hope that they might be able to elucidate the mystery. I gladly availed myself of Dr. Blair's kind offer although I was not very optimistic as to the result. In a letter, dated 9 August, 1949, to me, Dr. Blair stated that he had completed his enquiries into the origin of the rumours that Great Auks had been seen about the Lofoten Islands within recent times, and that he was able to do so was due to the assistance he had received from Konservator Johnsen of Bergen Museum. That Dr. Blair's efforts should have produced a positive result was in itself a great surprise to me but the nature of the result achieved was still more startling. In August, 1936, nine King Penguins were set free in Northern Norway, four of them at Rist, Lofoten Islands and the remainder at Gjesover, Finmark. The birds scattered and some were killed or captured, but two at least survived until 1944. These reached an island called Sandholm, near Breistrand in Vesterålen that year. One was caught on a line set for fish and the other disappeared about May, 1944. I share Dr. Blair's view that this information provides an explanation for the rumours which had arisen. People unaware of the liberation had seen the Penguins and concluded they were Great Auks. In 1938 a further attempt was made to introduce penguins into the Lofoten Islands. This time Macaroni and Jackass Penguins were liberated, but, like the King Penguins they scattered and nothing is

known of their ultimate fate. The information, which Dr. Blair has discovered, demonstrates that reports, which may seem to be impossible, should not be merely sceptically rejected. I record my indebtedness to Dr. Blair and Konservator Johnsen for clearing up the mystery.

Since the above was written I have heard from Dr. Blair that Konservator Johnsen has recently died. We express our deep regret and pay tribute to his memory.

A New Race of Shrike from the Philippines.

Mr. S. DILLON RIPLEY sent the following :—

LANIUS VALIDIROSTRIS HACHISUKA, new race.

Description.—From *L. validirostris* this race differs in the color of the underparts which are suffused with cinnamon-rufous from below the throat over the whole under surface. This color is richer and slightly darker than the flank color of true *L. validirostris*.

Distribution.—Mindanao Island, Philippine Islands.

Type.—Male adult. Apo Lake, Mindanao, 12 February, 1929. Collected by the Marquess M. Hachisuka. In collection S. Dillon Ripley, deposited in the Peabody Museum of Nat. History.

Remarks.—The Marquess Masauji Hachisuka in correspondence to me has pointed out that two specimens of *Lanius validirostris*, Grant, collected by him on Mindanao Island constitute a new and considerable extension of range for that species. I have compared these birds, which are now housed at Yale, with examples from Luzon and Mindoro Islands from which they differ strikingly.

I am much indebted to the authorities of the American Museum of Natural History for permission to examine specimens of *Lanius validirostris*.

In the two specimens of *Lanius v. hachisuka* the labels note that the testes of the male were slightly enlarged and the ovaries of the female granular indicating that the birds were coming into breeding condition. The female was collected on February 11th.

Recently Biswas (in MSS.) has made an interesting study of *Lanius tephronotus* Vigors based on newly collected specimens from India, and comments on the position of *L. validirostris* suggesting that it should be considered a race of *L. tephronotus*. Certainly *L. validirostris* resembles *L. tephronotus* closely in coloration and proportions, but I am inclined to think that to merge this endemic Philippine form with a congener found breeding in the Himalayas would be a mistake. The distribution of *L. validirostris*, an uncommon hill forest bird of three of the main Philippine Islands which also happen to be three of the oldest islands geologically speaking and the home of the most well-marked endemisms, indicates that this species is a very early resident in the Islands. I would be inclined to consider it from the speciation point of view as a precourser, an early wave compared to which *Lanius schach*, Linnaeus, has been a second and later invasion. To carry the assumption further I would presume that *L. schach*, *L. tephronotus* and *L. validirostris* all represent the same basic shrike stock and that on continental Asia

the present *L. tephronotus* is also an early form which for some ethological or other reason is prevented from hybridizing with *L. schach* in the zones in which both species occur as breeding populations.

Specimens from Mindoro seem to approach this tint of color, and are more heavily washed on the flanks and vent than Luzon birds, but they fit in with the population of that Island.

Measurements are as follows :—

			wing	tail	culmen	
<i>L. v. validirostris</i>						
Luzon	♂	...	87.5-90	92-95	17-19.5	m.m.
	♀	...	87.5	85	17.5	„
Mindoro						
	♂	...	83	89	17	„
	♀	...	81	92	18	„
<i>L. v. hachisuka</i>						
Mindanao	♂	...	87.5 (type)	94	18	„
	♀	...	87.5	89	17	„

It gives me great pleasure to name this form in honour of Marquess Hachisuka who has been such an indefatigable student of Philippine birds.

Notes on Eastern African Birds.

Captain C. H. B. GRANT and Mr. C. W. MACKWORTH-PRAED sent the following three notes :—

(1) On the name of the northern Indian Sparrow and its occurrence in Eastern Africa.

There appears to be little doubt there is only one race of *Passer domesticus* Linnæus from Iran to northern India and east to Turkestan. This race has been given two names : *Passer domesticus bactrianus* Zarudny and Kudaschew and *Passer domesticus parkini* Whistler. The latter was published in the Bull. B.O.C., 41, p. 13, 1920 and the type locality is Srinagar, Kashmir. The former is given in Nascha Ochota, No. 20, p. 37, 1916, and in Journ. Turk. Br. Russ. Geog. Soc., 16, p. 55, 1923 and the type locality is Turkestan.

The Nascha Ochota is a rare paper, and Hartert, Vog. päl. Fauna, Erganz., p. 80, footnote (2), 1932, states the author had no separates for distribution. We are unable to trace a copy of this paper in this country and therefore have not seen it, nor apparently was Hartert able to consult it. The other reference in the J.T. Br. R.G. Soc., is in a number of that Journal devoted to a memoriam to N. A. Zarudny and in which his papers are reprinted verbatim including "subsp. n." after his new names, and on p. 33 we find this name given in a list of Zarudny's papers under the year 1916.

It would appear that we must accept that No. 20 of the Nascha Ochota was published and issued in 1916, but we cannot trace a reference to it in the Zoological Record.

In the British Museum collection is an adult male Sparrow collected by Baron von Müller at Berber, Sudan, in 1848 : B.M. Reg. No. 1895. 9-9.256. Wing 82 mm., which agrees with the series of *Passer domesticus bactrianus*.

It would appear to show that this race was introduced into the Sudan and has apparently since died out.

(2) On the status of *Ploceus jacksoni jucundus* Friedmann, Proc. Biol. Soc. Wash., 44, p. 117, 1931; Nyanza, south-western Urundi, Belgian Congo.

Through the kindness of Dr. Friedmann, we have had the loan of two adult males of this race and compared them with the good series of *Ploceus jacksoni* Shelley, in the British Museum collection. Some Uganda specimens have an indication of chestnut below the black nape and we consider this character to be merely individual and not racial. We therefore place *Ploceus jacksoni jucundus* Friedmann, as a synonym of *Ploceus jacksoni* Shelley.

(3) On the status of *Symplectes eremobius* Hartlaub.

In Bull. B.O.C. 64, p. 67, 1944, we placed this name as a synonym of *Othyphantes emini* (Hartlaub). We have re-examined this question and further specimens in the British Museum and are now satisfied that Hartlaub's *S. eremobius* is not a synonym of *O. emini*, but a valid race of *Ploceus baglafecht* (Daudin).

A CORRECTION.

On p. 103 of No. 10 of this Volume 69, the words "Colonel F. O. Cave gave the following talk and showed slides" should be inserted after the heading "Some Notes on the Banded Francolin, *Francolinus schlegelii* Heuglin."

Notices.

STOCK OF THE "BULLETIN."

It is proposed to reduce the stock of the "Bulletin", but before this is done members are given an opportunity to acquire parts at 2/6 each. Applications should be made to the Honorary Secretary. No reply will be sent if parts are not available.

Please note the Hon. Secretary's address :

W. E. Glegg, Esq., Zoological Museum, Tring, Herts.

PUBLICATION OF THE "BULLETIN."

Members who make a contribution at a Meeting should hand the M.S. to the Editor at that Meeting. As the proofs will be corrected by the Editor, it is essential that the M.S. should be correct and either typed or written very clearly with scientific and place names in block letters. The first mention of a scientific name should be spelt out in full, i.e., genus, specific name, racial name, (if any) and author. Any further mention of the same name need only have the initial letter of the genus and no further mention of the author.

If no M.S. is handed to the Editor at the Meeting, a note will be inserted mentioning the contribution.

NEXT MEETING.

The next Meeting of the Club will take place on Wednesday, 21st December, 1949, at the Rembrandt Hotel, Thurloe Place, S.W.7, preceded by a Dinner at 6.30 P.M.

BULLETIN OF THE BRITISH ORNITHOLOGISTS' CLUB.

Volume 69.

No. 12.

The four-hundred and ninetieth Meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, S.W.7, on Wednesday, 21st December, 1949, following a dinner at 6.30 P.M.

Chairman : Dr. J. M. HARRISON.

Members present :—Miss C. M. ACLAND ; Miss P. BARCLAY-SMITH ; F. J. F. BARRINGTON ; Dr. G. BEVEN ; Miss T. CLAY ; J. FERGUSON-LEES ; W. E. GLEGG (*Hon. Secretary*) ; Capt. C. H. B. GRANT (*Editor*) ; Surgeon Lieutenant J. G. HARRISON ; Miss E. P. LEACH (*Hon. Treasurer*) ; Miss C. LONGFIELD ; J. H. MCNEILE ; C. W. MACKWORTH-PRAED ; Col. R. MEINERTZHAGEN (*Vice-Chairman*) ; Miss G. M. RHODES ; Major A. G. L. SLADEN ; Lt.-Commrdr. C. P. STAPLES ; Dr. A. LANDSBOROUGH THOMSON ; C. N. WALTER ; A. WILLIAMS ; C. DE WORMS ; Col. O. E. WYNNE.

Guests :—R. N. CRASKE ; Mrs. L. L. STAPLES ; J. G. TATHAM ; Mrs. A. L. THOMSON ; V. WALTER.

Members, 23 ; Guests, 5 ; Total, 28.

Eastern Greylag Goose in Germany.

Surgeon Lieutenant JEFFERY HARRISON made the following remarks and exhibited specimens :—

On October 8th 1949 I shot what I believe to be the first definite example of the Eastern Greylag Goose, *Anser anser rubrirostris* Swinhoe, in Western Europe. The bird was shot at the very end of evening flight, from a skein of about fifteen Greylags as they were coming out to roost on the southern end of Pagensand Island in the Elbe Estuary, about twenty miles down river from Hamburg.

At the time I noticed that it had a flesh-pink bill, exactly the same colour as its legs. It was preserved and sent home and my father Dr. J. M. Harrison and I have since been able to compare it with other Greylags of the typical orangened billed form. It stands out at once from these as being a much paler bird, and the edges of all the feathers of the back and flanks are broader and very much whiter. Although the colour of the bill has faded, it has dried a different colour from the other geese, and it is still easy to see that it was originally a pink billed bird. It was an adult female and weighed 6 lbs. 10 ozs.

About five or six hundred Greylags are living on the Elbe in the vicinity of Pagensand and Bishorst Islands this winter; they began to arrive in late September, and when I shot my bird about four hundred were already present. I have since examined three others, all of which were the typical orange billed geese.

There seems to be very little known about the distribution of the Eastern Greylag in winter, and this record seems to be a long way to the west of its normal haunts.

I have brought the goose for your inspection tonight, together with another typical bird from the same place. The first has been relaxed and mounted by my father, the second only arrived from Germany yesterday and is only as roughly stuffed as the one I first sent home. Neither of them are finished yet, and the point in bringing them up like this is to demonstrate the two different colours of their bills before they are painted, and also the other general characters.

NOTE BY C. H. B. GRANT.

At the request of Surgeon Lieutenant Harrison I have examined the specimen of *A. a. rubrirostris* he exhibited and I agree that the bill was pink in life.

Overland Migration of Wading Birds and Terns across Schleswig-Holstein, Germany.

BY SURGEON LIEUTENANT JEFFERY HARRISON, R.N.V.R.

The problem of migration is one of the most interesting in the whole of ornithology and the small branch that I find particularly so is the subject of overland migration of wading birds. I can still remember vividly the first time that I heard Curlews calling out of the night as they migrated across Kent, and it is a sound that thrills me just as much today as it did that night when I was still very small.

In May 1945 I gave a talk to the Club on "Overland Migration of Wading Birds in the Southern Half of England in the spring of 1944" in which I compared day to day observations made at Cambridge and at Guildford, in which there was a remarkable similarity. As a result of this talk, R. A. Hinde and I tried to organise an enquiry to cover the whole of the British Isles, with the help of a number of observers. So many people were involved that I am afraid our results were not as satisfactory as we had hoped, but even so, they were of considerable interest and have recently been published in "British Birds."

In July 1949, by a monumental piece of good fortune I was appointed to Royal Naval Headquarters, Germany, and found myself at Blankenese, a small town on the north bank of the Elbe, a few miles down river from Hamburg. The whole area of north-west Germany is a most interesting one for an ornithologist and as it lies in the path of migrants travelling from the Baltic countries south-westwards in autumn, I was able to make some interesting observations. Before I go any further I must explain that it was not possible for me to go out every day and so my observations

do not represent the whole story, but I do think that I was able to be out sufficiently often to get a very fair idea of the type of migration that occurs. Also, as I am still stationed in Germany and have every prospect of being there for some time to come, I have decided to say nothing about the many other very interesting birds that I have been able to see; I would rather save it up for a much fuller talk, after I have finally left Germany. Tonight therefore, is going to be brief.

I will begin by giving you a general account of the autumn migration as I saw it, in the correct chronological order, and when I have done that I will continue by discussing some of the more interesting features. I have prepared a large map so that I can be followed more easily, and will demonstrate from it as I go along.

The first big migration I saw was between Wedel and Lühe, on July 27th, when for several hours I watched large numbers of Black Terns and a few Little Terns flying steadily westwards along the course of the Elbe, fishing as they went. I do not know where they were coming from, because there was no sign of any further east in Hamburg, but it is more than likely that they would fly high over such a big industrial port, and I believe they must have been coming from eastern Germany. The wind on that day was north-west.

On July 30th I went up for two days to Lake Westensee, which is some 16 kilometres south-west from Kiel. The weather was not good at the time as there was a fresh south-south-west wind, much low cloud and frequent rain storms. I was not very hopeful at seeing much, but as we neared Bad Bramstedt on the journey up, I was considerably surprised to see a small party of Whimbrel fly over a fir plantation and swoop low across the road going south-west.

The next day we had the same weather, and there was a marked migration passing by. They were easy to observe for they were flying slowly into the wind and each party behaved in exactly the same way; they were flying about thirty yards high over the land until they came to within sight of the lake at the north-east shore. At this point they would drop down until they were within a few feet of the surface, where they would remain, making use of the uplift from the waves, until they came to the south shore, some two miles away, when they climbed up to their original height. In this way I was able to identify them and saw the following few species—Ruff, Dunlin, Redshank, Black Tern, Common Tern, Black-headed and Common Gull. The same migration was continuing next morning in the face of stronger wind from the same quarter, and continued until it was blowing a half gale by lunchtime. At this, all migration stopped. That morning I identified Knot, Dunlin, Bar-tailed Godwit, Whimbrel, while there was an almost continuous stream of Common Terns, among which I saw two adult Arctic Terns, three Little Terns and a few Common Gulls. By early afternoon the gale was at its worst and parties of Terns were crouching under the reeds for shelter, while all the waders had disappeared.

My next few records are isolated ones. On August 3rd I noticed a small party of Whimbrel flying south-west over Blankenese into a fresh

south-west wind, and four days later there was a considerable migration of Green Plovers going over Pagensand Island. These were flying steadily south-west into the wind in parties of up to sixty birds. They made no alteration in course when they came to the Elbe, but continued straight on across the water. The next morning a party of Curlew flew over Blankenese in the same direction, the wind still being south-west.

On August 17th the wind changed to a fresh northerly one and the only migrating wader I saw was a single Bar-tailed Godwit flying south-west, a few kilometres inland from the Elbe near Wedel. This was followed on the next day by a most interesting migration, which I watched from the north shore of the Elbe near Hetlingen. I only arrived at five p.m., so I have no idea when the flight started, but from the time of my arrival until darkness began to fall at about nine p.m., parties of migrants were passing by all the time. They were small, the biggest being about thirty birds, and often they were single. They were arriving overland from the north-east, flying about fifty yards up, helped by a fresh north-west wind. As soon as they saw the waters of the Elbe, they dropped down low and turned north-west to follow it. This was the only time that I saw the Elbe exert any appreciable effect on migrants, in making them change course. Only three species of wading bird were concerned in the movement, Bar-tailed Godwit, Knot and Grey Plover. In all I saw about 200 Godwits, 100 Grey Plover and 30 Knots. All the Godwits and Knots that I had good views of were young, but half the Grey Plovers were adults. Frequently all three were together in one flock and I saw Godwits accompanied by Knots and by Grey Plover, but never Grey Plover and Knots together.

I only saw two other waders actually migrating—on August 22nd I watched a single Green Sandpiper high over Schenefeld flying south, and on August 27th a single Golden Plover went south-west over Pagensand. In the first the wind was north and in the second it was north-west.

A second big movement of Black Terns took place on August 28th. On the previous day I had sailed from Hamburg to Pagensand and had seen only three, but on the return journey a large movement was going past, following the course of the river in an east to west direction, against a north-west wind. They were travelling in small parties of up to a dozen, and in all over 100 birds passed the boat on the journey home in three-quarters of an hour. This time only two were adults. On September 1st, three Sandwich Terns flew down the river in the same direction.

This account has covered the main migrations of waders and Terns that I actually observed taking place. This has not covered all the others that I saw from time to time resting and feeding along the river, which I shall refer to again later. Briefly, the following species were seen:—Black-tailed Godwit, Curlew, Wood Sandpiper, Common Sandpiper, Turnstone, Little Stint, Temminck's Stint, Ringed Plover, Little Ringed Plover, Dusky Redshank, Greenshank and Avocet.

So far I have given a general account of the autumn migration, and I would like to continue by bringing out some special points which strike me as being interesting. I do not think that very much has been written

about associations on migration : by association I mean which species travel together and which keep separate. From my observations I find that there are two different types of association, one actually during flight on migration and the other resting on the ground. The first is dependent on the original breeding distribution of the species involved and the second on the type of country in which each species likes to rest and feed. Thus early on in the migration southwards the number of species in a flock is strictly limited, but as halts occur other species may join up.

Thus, the migration of Bar-tailed Godwits, Grey Plovers and Knots over Hetlingen, which I described, consisted only of three species, each of which nests in the furthest north among the Arctic tundra. I would say that these birds were making their first halt since they left the Arctic, because there were no species travelling with them that nest further south and also because they altered course when they came to the Elbe, obviously tired and in need of a suitable feeding and resting ground.

Other mixed flocks that I have seen have all been made up of waders that nest further south, and in all cases their breeding ranges overlap. There was a flock of Ruff, Redshank and Dunlin at Westensee, one of Ruff and Avocet and several of Dunlin and Ringed Plover at Pagensand, and Greenshank and Wood Sandpiper near Wedel. Only once did I see a far northern species travelling with a less northerly one and this was at Westensee when a Bar-tailed Godwit came past with a Whimbrel. Presumably these met somewhere in the Baltic as there were strong southerly winds blowing at the time to hold them up.

My second type of association is that formed at rest by those types of waders that prefer the same kind of marshland. A typical example that I have in mind is due to a small stagnant fresh-water marsh on Pagensand Island. Here the same species would form up into a flock consisting of Green Sandpiper, Wood Sandpiper, Greenshank, Temminck's Stint and Little Ringed Plover, a strange flock, dependent on the marsh for its origin. Little Ringed Plovers are more often associated with Common Sandpipers along the sandier banks and streams flowing into the Elbe. I would especially like to bring this association to your notice as the Little Ringed Plover has developed a habit of flicking its tail up and down exactly in the same manner as the Common Sandpiper, just after it has pitched. The Ringed Plover does not do it and it is a peculiar coincidence to say the least. As a final example of this association I will quote the obvious one of Green and Golden Plover, which were commonly seen together along the Elbe during autumn migration.

I think that most people are agreed that the adults are the first to migrate southwards in autumn, these being the barren and unsuccessful birds. This is borne out by my observations although I missed much of the early part in July. At Westensee in July all the waders were adults still in their full summer plumage and I did not see the first youngsters until August 18th at Hetlingen, but even then, half the Grey Plovers were adults. One lone pair that came over me were quite definitely a male and female by their plumage and probably an actual pair travelling

south together. The two big movements of Black Terns were the same ; on July 27th all were adults, but on August 28th there were only two adults.

I do not want to say much about the effects of the weather—a much debated subject. I did however come to the conclusion that the direction of the wind had very little effect on the migrants while they were travelling, unless it was gale force against them, in which case they had to stop. This is not to say that the wind has no effect when they originally started off ; that I do not know. However, one big movement was helped by a north wind, while a second equally large one took place into a fresh south-westerly wind. The height of migration was never very great and almost all the species were identified from the ground. Over the lake at Westensee they were only a few yards up, and they continued on over the land at about 30 yards high, much lower than one usually associates with migration.

Remembering the arguments that have raged in the past as to whether migration takes place on a broad front or on definite tracts depending on natural features, I was interested to watch the effect of so large a river as the Elbe, which from Hamburg flows almost at right angles to the usual south-west autumn migration. As I have already mentioned only one lot of migrants paid any attention to it at all, and in this case they did completely alter course. In the case of Terns, there was no doubt that they did follow the river very accurately. This is necessary for a slow flying bird such as a Tern, because it depends on the river for food.

This is all I have to say tonight and to sum up, I think I have shown that there is a very marked migration of wading birds and terns across Schleswig-Holstein, and that the waders travel on a broad front, whereas the terns are more restricted because they depend on the rivers for their food supply. I have also suggested that the various associations of migrating waders would well repay further study. I do not wish to suggest that these were the only types of migrants seen during the autumn, for there were many others, but these I think must be dealt with some other time.

A New Species and a new Race of Yellow Wagtail from the Sudan and Turkestan.

Capt. C. H. B. GRANT and Mr. C. W. MACKWORTH-PRAED exhibited and described the following :—

BUDYTES PERCONFUSUS, new species.

Description.—Adult male ; forehead to forecrown grey, crown olive green, a clear grey collar on hind neck, a broad pale yellow streak from base of bill to over and behind the eye ; lores and ear-coverts darker grey with white flecks. Differs from *Budytes flava* (Linnæus) in the yellow streak over the eye, and the paler grey head, and from *Budytes luteus* (Gmelin) in having the mantle rather darker and below rather paler yellow.

Distribution.—Known only from scattered specimens from Frederikshavn, Denmark; Pomerania, Germany; Wassenaar, Holland; Abyssinia, the Sudan and western Arabia. *Type.*—In the British Museum. Adult Male. Khartoum, Sudan. 9th April, 1908. Collected by A. L. Butler. Brit. Mus. Reg. No. 1915. 12.24.1429.

Measurements of type.—Wing 80, culmen from base of skull 16, tarsus 23, hind claw 11, tail 70 mm.

Remarks.—Ten specimens examined. We should not have described this bird as new on the yellow eyebrow alone, but its general colour is so distinct from all other species or races that we have felt compelled to do so.

BUDYTES THUNBERGI ALAKULENSIS, new race.

Description.—Adult male, similar to *Budytes thunbergi thunbergi* (Billberg), but head rather darker, more coal black.

Distribution.—Lake Ala Kul, Turkestan-Mongolian border.

Type.—In the British Museum. Adult Male. Lake Ala Kul, west of Dzungaria, Turkestan-Mongolian border. 9th May, 1876. Collected by Dr. O. Finsch. Brit. Mus. Reg. No. 1878. 12.31.43.

Measurements of type.—Wing 80, culmen from base of skull 17, tarsus 22, hind claw 8, tail 68 mm.

Remarks.—Two specimens examined.

An early New Zealand Ornithologist : Thomas Henry Potts, 1824-1888.

Mr. WILLIAM E. GLEGG read the following:—

Thomas Henry Potts was born on 23 November 1824 and was christened at Brandon Church, Suffolk; he emigrated to New Zealand in 1854. He was a man of considerable means and during the fifties and sixties he was obliged to return to England to attend to his estates, when he was made a Freeman of the City of London in 1862. In New Zealand he developed remarkable powers of observation and ability to record both in print and with the brush. He was often referred to as "The Gilbert White of New Zealand." His diary has partially survived. Potts was not a specialist but the items in his diary were chiefly ornithological. It would seem that he played a part in the introduction of birds from Britain. He records on 10 January, 1865 "Trounce brought up a pair of blackbirds I had ordered from Melbourne. No cock Chaffinch was to be procured," and 11 days later he writes "Turned out the hen chaffinch." "On 29 January, Cock Blackbird killed by hen. Geoff found the greenfinch's nest with young ones." From this we may infer that some of the common British Birds were becoming firmly established. He was clearly determined to persevere with the introduction of Blackbirds for under the date 28 August, 1865, we read "Put the two Blackbirds together" and he "turned out the blackbirds on Monday (9 Oct.)." This species soon settled down for Potts chronicles that there was a "Blackbird's nest with four eggs in it on Sunday (29 Oct.)," and an entry in the diary on 2 Dec.

reveals that "T.H.P. found the hen Blackbird had made another nest and was again sitting on five eggs." Stocking the land with birds of the homeland would seem to have been an expensive hobby for the settlers for on Nov. 27 he "gave Trounce £5 5s. Od. to buy the cock thrush from that fellow Fitton and after much talk he got it."

Potts died suddenly while shopping in Christchurch on 27 July, 1888. His collection of natural history specimens was of considerable extent and included a very fine collection of native quail, both eggs and birds being represented. At one time he had two eggs of the Great Auk. The history of one of them is recorded in the *Canterbury Times* of 24 April, 1912 and I quote it in full: "An egg of the great auk has had a curious history. After being in the collection of the Vicomte de Barde for 30 years, in 1825 it passed with two others of his collection to the Boulogne Museum. The curator exchanged them to an Englishman for an Ostrich skin. The new comer sold them in London to Mr. Potts, who took this particular one to New Zealand. Mr. Potts died there, and in 1891 the curator of the Christchurch Museum bought it for a friend in England. It was bought, with a specimen of the great auk, from Mr. Leopold Field for 600 guineas by Mr. Rowland Ward. Mr. Ward subsequently repurchased the egg from Mr. Middlebrook, and disposed of it to Colonel John E. Thayer, for the Thayer Museum, Lancaster, United States, where the collection numbers 7—an American 'corner' in fact."

After Potts' death his collection was sold for £150, presumably to the Curator of Canterbury Museum. It is stated that it contained two Great Auks' eggs. There is a contradictory statement to this from a member of the Potts family, who declared that the eggs of the Great Auk never came to New Zealand and that Potts packed them most carefully and stored them in England or perhaps they were "lost" in transit.

In "The Life and Times of Sir Julius von Haast" it is stated that Potts wrote on other subjects but chiefly about the birds of New Zealand, their habits, nests and eggs. A great part of his information was used by Sir Walter Buller in his *History of the Birds of New Zealand*, to a greater extent than was welcome to Potts, who refused to subscribe to the work. The family tradition is that Buller offered to present a copy of the book to each of the Potts family, which reached the figure of 13, but this must have been a wrench for Buller, who was close-fisted. Specialists in ornithology, who have closely studied Potts' observations, are in agreement that Potts was a careful observer. Tributes were paid to his work by Dr. W. R. B. Oliver in his *New Zealand Birds* and by E. F. Stead in his *Life Histories of New Zealand Birds*. Potts was a fellow of the Linnean Society and contributed to the Journal of that Society and also to other periodicals. His observations on oology were published as a series of articles in the *New Zealand Journal of Science*, vol. 2, 1884-5. From 1855 to 1882 he kept a record of nests discovered, which is now in private ownership in Christchurch. He was the author of a book *Out in the Open*, published in 1882.

This outline of his services to ornithology is based on a Memoir in *History and Biography*, No. 2, August 1948, pp. 160-172, which was sent

with an invitation from the Editor to make the story of Potts known to Members of the Club.

An examination of literature without making an exhaustive search has brought to my notice ornithological contributions by Potts, which suggest that the details of the Memoir do not do full justice to Potts' ornithological powers and as examples of his work I mention that he described a new species of Rail, *Rallus pictus*, a new species of Gull, *Larus bulleri*, and a new species of Aptyryx, *Apteryx haastii* (Trans. and Proceed. of the New Zealand Institute, vol. 4, pp. 202-5). The statements regarding the Great Auks' eggs, owned by Potts, do not appear to be too accurate and call for comment. Writing on 16 July, 1870, Potts states that for several years he had three eggs of the Great Auk, and that they were inspected by Dr. Meyer, the author of *British Birds and their Eggs*. When Potts parted with some of his collection in 1853, one of these eggs was sold by public auction for £30. He gives a description and the measurements of this egg (T. & P. of the N.Z. Institute, 5, 3, p. 110). Further light is shed on this in *The Great Auk or Garefowl by Symington Grieve* (1885), appendix, p. 31, where it is stated that Potts formerly owned three eggs, which he had bought from Mr. Gardiner, senior, and that in May, 1853, he sold two of them at auction to Lord Garvagh and took the remaining one to New Zealand.

Notes on Eastern African Birds.

Captain C. H. B. GRANT and Mr. C. W. MACKWORTH-PRAED sent the following four notes :—

(1) On the name of the Northern Indian Sparrow and its occurrence in Eastern Africa.

In *Bull. B.O.C.* 69, p. 122, 1949, under the above heading we mentioned that we had been unable to consult the Nasha Okhota. Mr. H. G. K. Molineux has kindly informed us in a letter dated 12th December, 1949, that he has copies of this Journal and can confirm that the original description of *Passer domesticus bactrianus* Zarudny and Kudachev, was published in Nasha Okhota, 10, No. 20, p. 37, 1916, Petrograd.

Mr. Molineux gives this reference in his Cat. Bds. p. 101, 1930-31.

(2) On the Status of *Colius striatus chyulu* Van Someren, J.E.A.U. Nat. Hist. Soc. 14, p. 53, 1939 : Chyulu Range, south-eastern Kenya Colony.

Through the kindness of the Trustees of the Coryndon Museum, Nairobi, the British Museum has received the type and two other specimens of this race. We have carefully compared these with the British Museum series and are quite unable to see that they differ in any way from *Colius striatus kikuyuensis* Van Someren, and of which we place *Colius striatus chyulu* as a synonym.

(3) On the status of *Viridibucco leucomystax chyulu* Van Someren, J.E.A.U. Nat. Hist. Soc. 14, p. 43, 1939 : Chyulu Mts., south-eastern Kenya Colony.

Through the kindness of the Trustees of the Coryndon Memorial Museum, Nairobi, the British Museum has received the type and we have had the loan of a specimen of this race and have compared it with the series in the British Museum. We are unable to see that it differs in any way from *Viridibucco leucomystax* Sharpe, and therefore place *Viridibucco leucomystax chyulu* Van Someren as a synonym of *Viridibucco leucomystax* Sharpe.

(4) On the status of *Dendropicos fuscescens chyulu* Van Someren, J.E.A. & U. Nat. Hist. Soc. 14, p. 48, 1939 : Chyulu Range, south-eastern Kenya Colony.

Through the kindness of the Trustees of the Coryndon Memorial Museum, Nairobi, the British Museum has received the type and a male and a female. We have compared them to the good series in the British Museum collection and we are quite unable to see that they differ from several specimens of *Dendropicos fuscescens hartlaubi* Malherbe, especially as there is considerable individual variation in this race. We therefore place *Dendropicos fuscescens chyulu* Van Someren as a synonym of *Dendropicos fuscescens hartlaubi* Malherbe.

Notices.

STOCK OF THE "BULLETIN."

It is proposed to reduce the stock of the "Bulletin", but before this is done members are given an opportunity to acquire parts at 2/6 each. Applications should be made to the Honorary Secretary. No reply will be sent if parts are not available.

Please note the Hon. Secretary's address :

W. E. Glegg, Esq., Zoological Museum, Tring, Herts.

PUBLICATION OF THE "BULLETIN."

Members who make a contribution at a Meeting should hand the M.S. to the Editor at that Meeting. As the proofs will be corrected by the Editor, it is essential that the M.S. should be correct and either typed or written very clearly with scientific and place names in block letters. The first mention of a scientific name should be spelt out in full, i.e., genus, specific name, racial name, (if any) and author. Any further mention of the same name need only have the initial letter of the genus and no further mention of the author.

If no M.S. is handed to the Editor at the Meeting, a note will be inserted mentioning the contribution.

DINNERS AND MEETINGS FOR 1950.

18 January ; 15 February ; 22 March* ; 19 April ; 17 May ; 21 June ; 18 October ; 15 November ; 20 December.

* The March meeting is on the fourth Wednesday of the month, not the third Wednesday, and will be held at the Zoological Society of London. The Dinner preceding this Meeting is in conjunction with the British Ornithologists Union.

NEXT MEETING.

The next Meeting of the Club will take place on Wednesday, 18th January, 1950, at the Rembrandt Hotel, Thurloe Place, S.W.7, preceded by a Dinner at 6.30 P.M.

CORRIGENDA.

VOL. 68.

Page 160, line 23, for *S. grallaria* read *P. grallaria*.

„ 160, „ 24, for *E. tropica* read *F. tropica*.

„ 174, „ 6, for *Tringa canutus* read *Calidris canutus*.

VOL. 69.

Page 5, line 41, for *Daption capense* read *Daption capensis*.

„ 10, „ 41, for *P. pamelæ* read *O. pamelæ*.

„ 20, „ 19, for Capt. Pitman read Colonel Pitman.

„ 25, „ for *Thelassoica* read *Thalassoica*.

„ 28, „ 46, for (*antarcticus*) Smith read *Fulmarus (antarcticus)* Stephens.

„ 38, „ 13, for General read Generic.

„ 40, „ 40, for Birds read birds.

„ 41, „ 13, for *D. g. balcanicus* read *D. s. balcanicus*.

„ 41, „ 22, for *phæomelamine* read *phæomelanine*.

„ 42, „ 19, for Eina, read Einar.

„ 42, „ 20, for *Tetraourogallus* read *Tetrao urogallus*.

„ 42, „ 23, for *Phasianus colchicns* read *Phasianus colchicus*.

„ 49, „ 23, for Teal, *Anas crecca* Linnæus Shoveler, *Spatula clypeata* (Linnæus) read Teal, *Anas crecca* Linnæus × Shoveler, *Spatula clypeata* (Linnæus).

„ 65, „ 44, for intercranial read intracranial.

„ 66, „ 2 & 27, for intercranial read intracranial.

„ 74, „ 15-16-22 & 41, for *Poliolais lopesi* read *Poliolais lopezi*.

„ 76, „ 34, for Mr. B. P. Hall read Mrs. B. P. Hall.

„ 92, „ 32, for *Melanocorypha yeltonensis* read *Melanocorypha yeltoniensis*.

„ 103, „ 10, under heading add, Colonel F. O. Cave gave the following talk and showed slides.

„ 120, „ 9, for "The Birds of the Philippines" by Delacour and Mayr read "The Birds of Malaysia" by Delacour.

INDEX

Names of new genera, species and races are indicated by clarendon type under the generic entry only.

- abyssinicus*, *Apus a.*, 105.
- Accipiter nisus*, 63.
- Adamastor*, 26.
- Ægyptius chincou*, 113.
- *danieli*, 113.
- æquatorialis*, *Apus æ.*, 52, 111.
- æquinoctialis*, *Procellaria*, 29.
- æsalon*, *Falco c.*, 63.
- afer*, *Cinnyris*, 20.
- affinis*, *Apus a.*, 105, 106.
- afræ*, *Euplectes*, 112.
- afratus*, *Eudyptes*, p., 5.
- Agrobates*, 110.
- akahige*, *Luscinia*, 39.
- alakulensis*, *Budytæ t.*, 131.
- Alauda conirostris*, 106.
- *fringillaris*, 30.
- alba*, *Bulweria*, 29.
- , *Macronectes*, 28.
- albifrons*, *Sterna a.*, 63.
- albigularis*, *Procellaria*, 26.
- albogularis*, *Serinus a.*, 107, 108.
- albonotatus*, *Trochocercus a.*, 59.
- Alca impennis*, 82, 120.
- Alcedo ispida*, 63.
- alexanderi*, *Diomedea*, 28.
- , *Poliolais l.*, 74, 135.
- alfredi*, *Cypselus*, 111.
- amaurocephalus*, *Symplectes b.*, 59.
- amphitrite*, *Procellaria*, 26.
- Anas capensis*, 111.
- *conboschas*, 39.
- *crecca*, 39, 49, 135.
- *formosa*, 39.
- *platyrhynchos*, 39.
- *querquedula*, 58.
- *strepera*, 39.
- anglicus*, *Dendrocopos m.*, 41.
- angusta*, *Neocichla g.*, 58.
- Anser rubrirostris*, 125.
- antarcticus*, *Fulmarus*, 25, 28, 135.
- Anthochæra*, 26.
- Anthreptes hypodilus*, 26.
- *somereni*, 83, 84.
- *ugandæ*, 84.
- Anthus katangaæ*, 17.
- *lichenya*, 17.
- *raltenii*, 18.
- Anthus rufuloides*, 18.
- *transkeiensis*, 17.
- Apalis bambuluensis*, 55.
- Apalis bamendæ*, 60.
- *brunneiceps*, 59, 60.
- *jacksoni*, 55, 56.
- *minor*, 55, 56.
- *muhuluensis*, 46.
- *mubuluensis*, 46.
- *songaeensis*, 46.
- Aplonis*, 26.
- Aplopelia jacksoni*, 20, 21.
- *larvata*, 21.
- *samalyæ*, 25.
- *simplex*, 21.
- Apteryx haastii*, 133.
- Apus abyssinicus*, 105.
- *æquatorialis*, 52, 111.
- *affinis*, 105, 106.
- *apus*, 63, 111.
- *bamendæ*, 52.
- *barbatus*, 111.
- *furensis*, 52.
- *galilejensis*, 105, 106.
- *lowei*, 52.
- *theresæ*, 105.
- *toulsoni*, 111.
- archimedes*, *Saxicola t.*, 84.
- Arizelocichla fusciceps*, 60.
- arturi*, *Nectarinia k.*, 60.
- Astrapia mayeri*, 15.
- atlantica*, *Diomedea*, 28.
- atrata*, *Chenopsis*, 24.
- atricapillus*, *Garrulus*, 40.
- atripennis*, *Phyllanthus*, 51.
- auduboni*, *Diomedea*, 28.
- australis*, *Bulweria*, 29.
- , *Daption*, 28.
- Aviceda megala*, 12.
- *stenozona*, 12.
- Babax lumsdeni*, 4, 5.
- *waddelli*, 4, 5.
- bactrianus*, *Passer d.*, 122, 133.
- baglafecht*, *Ploceus*, 123.
- balæna*, *Pachyptila*, 25.

balcanicus, *Dendrocopos* *s.*, 41, 135.
bambuluensis, *Apalis* *j.*, 55.
bamenda, *Apalis*, 60.
 —, *Apalis æ.*, 52.
bannermani, *Buccanodon* *d.*, 52.
barbatus, *Apus*, 111.
barratti, *Bradypterus* *b.*, 18, 19.
Batis dimorpha, 60.
belcheri, *Pachyptila*, 23, 24, 25, 29.
blanfordi, *Sylvia*, 109, 110.
blonbergi, *Catharacta* *s..*, 5.
bocagei, *Cichladusa*, 111.
 —, *Cossypha*, 111.
bollei, *Phæniculus* *b.*, 51.
bonelli, *Phylloscopus*, 46.
borealis, *Procellaria*, 30.
boscaweni, *Oenanthe* *l.*, 107.
botelensis, *Otus* *s.*, 11.
Botha fringillaris, 31.
boultoni, *Bradypterus* *m.*, 54, 55.
Bowdleria caudata, 6.
Bradypterus barratti, 18, 19.
 —, *boultoni*, 54, 55.
 —, *camerunensis*, 55.
 —, *cathkinensis*, 18, 19.
 —, *godfreyi*, 19.
 —, *granti*, 54, 55.
 —, *major*, 18, 19.
 —, *manengubæ*, 55.
 —, *mariæ*, 54, 55.
 —, *usambaræ*, 54, 55, 57.
 —, *wilsoni*, 18, 19.
 —, *youngi*, 54, 55.
brandti, *Garrulus* *g.*, 39.
brevicaudata, *Camaroptera*, 75.
brevipes, *Bulweria*, 29.
brevirostris, *Bulweria*, 29.
brookei, *Falco* *p.*, 30.
brucei, *Otus* *s.*, 8, 9, 10, 11.
brunneiceps, *Apalis* *a.*, 59, 60.
Buccanodon bannermani, 52.
 —, *duchaillui*, 52, 53.
 —, *sowerbyi*, 60, 85.
 —, *stresemanni*, 60.
Budytess alakulensis, 131.
 —, *flava*, 130.
 —, *luteus*, 130.
 —, *perconfusus*, 130.
 —, *thunbergi*, 131.
bulleri, *Diomedea*, 28.
 —, *Larus*, 133.
bullocki, *Icterus*, 97.
Bulweria alba, 29.
 —, *australis*, 29.
 —, *brevipes*, 29.
 —, *brevirostris*, 29.
 —, *bulwerii*, 26.
 —, *cærulea*, 29.
 —, *deceptornis*, 29.
 —, *gouldi*, 29.

Bulweria hasitata, 29.
 —, *incerta*, 29.
 —, *inexpectata*, 29.
 —, *lessoni*, 29.
 —, *lugens*, 29.
 —, *macroptera*, 29.
 —, *magenta*, 29.
 —, *melanopus*, 29.
 —, *mollis*, 29.
 —, *rostrata*, 29.
bulwerii, *Bulweria*, 26.
buryi, *Parisoma*, 110.
byroni, *Procellaria*, 30.

cabanisi, *Phyllastrephus* *f.*, 71.
cærulea, *Bulweria*, 29.
cæsia, *Coracina*, 31, 32.
Calandrella capensis, 106.
 —, *sclateri*, 106.
 —, *theresæ*, 106.
Calcarius lapponicus, 91.
Calidris, 26.
 —, *canutus*, 135.
Calyptorhynchus, 26.
Camaroptera brevicaudata, 75.
camelus, *Struthio*, 7.
cameroonensis, *Tyto* *c.*, 76.
camerunensis, *Bradypterus*, 55.
campbelli, *Diomedea*, 28.
Campephaga flava, 31, 32.
 —, *sulphurata*, 31, 32.
canutus, *Calidris*, 135.
Capella, 26.
 —, *gallinago*, 58.
capensis, *Anas*, 111.
 —, *Calandrella s.*, 106.
 —, *Daption*, 5, 28, 135.
 —, *Otus*, 10.
 —, *Querquedula*, 111.
 —, *Tyto c.*, 76.
carteri, *Diomedea*, 28.
Catharacta blonbergi, 5.
cathkinensis, *Bradypterus b.*, 18, 19.
caudata, *Bowdleria p.*, 6.
cauta, *Diomedea*, 28.
cavei, *Eremopterix* *l.*, 108.
cervicalis, *Garrulus* *g.*, 40.
chalybeus, *Cinnyris* *c.*, 20.
Chenopsis atrata, 24.
chincou, *Ægyptius m.*, 113.
 —, *Vultur*, 113.
Chlidonias niger, 63.
chloropus, *Gallinula*, 40.
chlororhynchos, *Diomedea*, 28.
chrysostoma, *Diomedea*, 28.
chyulu, *Colius* *s.*, 133.
 —, *Dendropicos* *f.*, 134.
 —, *Viridibucco* *l.*, 133, 134.
cicelæ, *Hierococcyx* *v.*, 56.

- Cichladusa bocagei*, 111.
cinerea, *Procellaria*, 29.
Cinnyris afer, 20.
 — *chalybeus*, 20.
 — *graueri*, 19.
 — *intermedius*, 20.
 — *ludovicensis*, 19.
 — *manoensis*, 20.
 — *whytei*, 19, 20.
Circaetus gallicus, 113.
 — *heptneri*, 113.
clypeata, *Spatula*, 49, 58, 135.
Coccycygia kilimensis, 60.
cælebs, *Fringilla c.*, 119.
Cœnocorypha huegeli, 6.
colchicus, *Phasianus*, 42, 135.
Colius chyulu, 133.
 — *kikuyuensis*, 133.
conboschas, *Anas p.*, 39.
confirmata, *Hemiprocne m.*, 12.
conirostris, *Alauda*, 106.
conspicillata, *Procellaria*, 29.
coombsi, *Melierax p.*, 113.
Coracina cæsia, 31, 32.
 — *striata*, 32.
Corvus frugilegus, 117.
Cossypha bocagei, 111.
 — *granti*, 53.
 — *insulana*, 53, 54.
 — *isabellæ*, 53.
crassirostris, *Pachyptila*, 24.
creatopus, *Procellaria*, 30.
crecca, *Anas c.*, 39, 49, 135.
crocopygia, *Serinus a.*, 107.
Cuculus murinus, 31, 32.
 — *sulphuratus*, 31, 32.
culminata, *Diomedea*, 28.
Cursorius rufus, 104, 105.
 — *theresæ*, 104, 105.
Cyanomitra viridisplendens, 59.
cyanurus, *Tarsiger c.*, 46.
cycladum, *Otus s.*, 11.
Cygnus, 24.
Cymodroma, 27.
 — *grallaria*, 30.
cyprius, *Otus s.*, 10, 11.
Cypselus alfredi, 111.
 — *toulsoni*, 111.
- Dendrocopos leucopterus*, 41.
 — *major*, 40, 41, 42, 43.
 — *mauritanus*, 41.
 — *medius*, 43.
 — *numidus*, 40, 41, 42, 43.
 — *pinetorum*, 40.
 — *syriacus*, 41, 42, 43.
 — *chyulu*, 134.
 — *hartlaubi*, 134.
desfontainesi, *Saxicola t.*, 84.
desolata, *Pachyptila*, 23, 24, 25.
dimorpha, *Batis c.*, 60.
Diomedea, 26.
 — *alexanderi*, 28.
 — *atlantica*, 28.
 — *auduboni*, 28.
 — *bulleri*, 28.
 — *campbelli*, 28.
 — *carteri*, 28.
 — *cauta*, 28.
 — *chlororhynchus*, 28.
 — *chrysostoma*, 28.
 — *culminata*, 28.
 — *epomophora*, 27.
 — *fusca*, 28.
 — *gilliana*, 27.
 — *huttoni*, 28.
 — *impavida*, 28.
 — *longirostris*, 27.
 — *melanophrys*, 27.
 — *palpebrata*, 28.
 — *richmondi*, 27.
 — *rohui*, 27.
 — *rothschildi*, 27.
 — *salvini*, 5, 28.
 — *sanfordi*, 27.
 — *westralis*, 27.
dioneeda, *Procellaria*, 30.
disputans, *Procellaria*, 30.
distans, *Otus s.*, 8, 9, 10, 11.
domesticus, *Passer d.*, 122.
dovei, *Macronectes*, 28.
duchaillui, *Buccanodon d.*, 52, 53.
Dyaphorophyia graneri, 75.
 — *harterti*, 75.
 — *kumbaensis*, 75.
 — *kungwensis*, 75.
 — *lomaensis*, 75.
- danieli*, *Ægyptius m.*, 113.
dannefærdi, *Petrocia m.*, 6.
Daption, 25.
 — *australis*, 28.
 — *capensis*, 5, 28, 135.
deceptornis, *Bulweria*, 29.
defensorum, *Melierax g.*, 82.
Dendrocopos anglicus, 41.
 — *balcanicus*, 41, 135.
 — *hispanus*, 41.
- Edolisoma minus*, 12.
 — *montanum*, 12.
Egretta, 26.
elegans, *Otus s.*, 11.
 — *Procellaria*, 30.
Emberiza melanocephala, 97.
 — *rutila*, 97.
emini, *Othyphantes*, 123.
epomophora, *Diomedea*, 27.
Eremialector gutturalis, 111.

- Eremialector usheri*, 59.
eremobius, *Symplectes*, 123.
Eremomela ituricus, 77.
 — *latukæ*, 76.
Eremopterix cavei, 108.
 — *leucopareia*, 108.
 — *signata*, 108.
Eritacus rubecula, 39.
erythrops, *Quelea*, 112.
Erythropygia galactotes, 110.
 — *hamertoni*, 110.
 — *minor*, 110.
Eudyptes, 26.
 — *afratus*, 5.
Euplectes afra, 112.
 — *sundevalli*, 112.
 — *taha*, 112.
- Falco æsalon*, 63.
 — *brookei*, 30.
 — *peregrinus*, 30.
feeæ, *Otus s.*, 10, 11.
fischeri, *Phyllastrephus*, 71.
flammeolus, *Otus s.*, 10, 11.
flava, *Budytæ*, 130.
 —, *Campephaga*, 31, 32.
formosa, *Anas*, 39.
Francolinus hildebrandti, 59.
 — *schlegelii*, 103, 123.
Fregetta, 27.
 — *moestissima*, 26.
 — *tropica*, 26, 135.
Fringilla cælebs, 119.
 — *gengleri*, 118, 119.
 — *hibernica*, 118.
 — *hortensis*, 119.
 — *montifringilla*, 91.
fringillaris, *Alauda*, 30.
 —, *Botha*, 31.
 —, *Mirafra*, 30, 31.
frugilegus, *Corvus f.*, 117.
Fulmarus antarcticus, 25, 28, 135.
 — *glacialoides*, 28.
furensis, *Apus a.*, 52.
fusca, *Diomedea*, 28.
fusciceps, *Arizelocichla n.*, 60.
- gabar*, *Melierax g.*, 82, 83.
Galachrysia nuchalis, 111.
galactotes, *Erythropygia*, 110.
galatea, *Tanysiptera*, 12.
galilejensis, *Apus a.*, 105, 106.
gallicus, *Circaetus*, 113.
gallinago, *Capella g.*, 58.
Gallinula chloropus, 40.
Garrulax lumsdeni, 4.
 — *waddelli*, 4.
Garrulus atricapillus, 40.
 — *brandti*, 39.
- Garrulus cervicalis*, 39.
 — *glandarius*, 39.
 — *rufitergum*, 40.
gengleri, *Fringilla c.*, 118, 119.
Geocolaptes olivaceus, 105.
 — *theresæ*, 105.
Geokichla oberlanderi, 16.
 — *piaggiae*, 16.
 — *williamsi*, 16.
gilberti, *Kupeornis*, 50, 51.
gilliana, *Diomedea*, 27.
glacialoides, *Fulmarus*, 28.
glandarius, *Garrulus g.*, 39.
Glareola nuchalis, 111.
Gliciphila, 26.
godfreyi, *Bradypterus b.*, 19.
gouldi, *Bulweria*, 29.
 —, *Pachyptila*, 24, 25.
gracilis, *Oceanites*, 26.
græcorum, *Saxicola t.*, 84.
grallaria, *Cymodroma*, 30.
 —, *Procellaria*, 135.
granti, *Bradypterus m.*, 54, 55.
 —, *Cossypha i.*, 53.
graueri, *Cinnyris a.*, 19.
 —, *Dyaphorophyia a.*, 75.
gravis, *Procellaria*, 29.
gutturalis, *Eremialector*, 111.
 —, *Pterocles*, 111.
- haastii*, *Apteryx*, 133.
hachisuka, *Lanius v.*, 121, 122.
hamertoni, *Erythropygia*, 110.
harterti, *Dyaphorophyia a.*, 75.
hartlaubi, *Dendropicus f.*, 134.
hasitata, *Bulweria*, 29.
Hemiprocne confirmata, 12.
 — *mystacea*, 12.
heptneri, *Circaetus g.*, 113.
Heterotrogon vittatum, 59.
hibernans, *Saxicola t.*, 91.
hibernica, *Fringilla c.*, 118.
Hierococcyx ciceliæ, 56.
 — *varius*, 56.
hildebrandti, *Francolinus h.*, 59.
Hippolais elæica, 17.
 — *pallida*, 17.
hispanus, *Dendrocopos m.*, 41.
hornbyi, *Hydrobates*, 30.
 —, *Thalassidroma*, 26.
hortensis, *Fringilla c.*, 119.
huegeli, *Cœnocorypha a.*, 6.
huttoni, *Diomedea*, 28.
Hydrobates hornbyi, 30.
 — *melania*, 26.
 — *owstoni*, 30.
hypodilus, *Anthreptes c.*, 83.
- icterinus*, *Phyllastrephus*, 71.
Icterus bullocki, 97.

- Icterus spurius*, 97.
impavida, *Diomedea*, 28.
impennis, *Alca*, 82, 120.
incerta, *Bulweria*, 29.
inexpecta, *Bulweria*, 29.
insulana, *Cossypha* i., 53, 54.
insularis, *Saxicola* t., 84.
intermedius, *Cinnyris* c., 20.
interpositus, *Otus* s., 11.
isabellae, *Cossypha*, 53.
ispida, *Alcedo* a., 63.
ituricus, *Eremomela* b., 77.

jacksoni, *Apalis* j., 55, 56.
 —, *Aploelia* s., 20, 21.
 —, *Phæniculus* b., 51.
 —, *Ploceus* j., 123.
jacundus, *Ploceus* j., 123.
japonicus, *Otus* s., 10, 11.

katangæ, *Anthus* r., 17.
kikuyuensis, *Colius* s., 133.
kilimensis, *Coccycygia* m., 60.
kumbænensis, *Dyaphorophyia* a., 75.
kungwensis, *Dyaphorophyia* a., 75.
Kupeornis, 50, 51.
 — *gilberti*, 50.

Lanius hachisuka, 121, 122.
 — *schach*, 121, 122.
 — *tephronotus*, 121, 122.
 — *validirostris*, 121, 122.
lapponicus, *Calcarius* l., 91.
Larus bulleri, 133.
 — *novæhollandiae*, 5.
larvata, *Aploelia*, 21.
latukae, *Eremomela* b., 76.
leggei, *Otus* s., 11.
lessoni, *Bulweria*, 29.
leucomelæna, *Curruca*, 109.
 —, *Parisoma*, 109.
 —, *Sylvia* l., 109, 110.
leucomelas, *Procellaria*, 30.
leucomystax, *Viridibucco*, 134.
leucopareia, *Eremopterix*, 108.
leucopterus, *Dendrocopos* m., 41.
libratus, *Tyto* c., 76.
lichenya, *Anthus* r., 17.
Lioptilornis nigricapillus, 51.
 — *rufocinctus*, 51.
lomaensis, *Dyaphorophyia* a., 75.
longirostris, *Diomedea*, 27.
lopezi, *Poliolais* l., 74, 135.
lowei, *Apus* a., 52.
ludovicensis, *Cinnyris* a., 19.
lugens, *Bulweria*, 29.
 —, *Ænanthe*, 107.
 —, *Tetrao* u., 42, 135.
lugentoides, *Ænanthe* l., 107.
lugubris, *Ænanthe* l., 107.
 —, *Garrulax* l., 4.

lumsdeni, *Babax* l., 4.
 —, *Garrulax* l., 4.
Luscinia akahige, 39.
luteus, *Budytes*, 130.

macgillivrayi, *Pachyptila*, 24, 25.
 —, *Thalassidroma*, 26.
Macronectes, 25.
 — *alba*, 28.
 — *dovei*, 28.
macrophala, *Petroica*, 6.
macroptera, *Bulweria*, 29.
macrura, *Sterna*, 63.
magentae, *Bulweria*, 29.
major, *Bradypterus* b., 18, 19.
 —, *Dendrocopos* m., 40, 41, 42, 43.
Mandingoa nitidula, 60.
manengubaæ, *Bradypterus* m., 55.
 —, *Poliolais* l., 74, 135.
manoensis, *Cinnyris* c., 20.
mariae, *Bradypterus* m., 54, 55.
maui, *Pachyptila*, 25.
mauritanus, *Dendrocopos* m., 41.
mayeri, *Astrapia*, 15.
medius, *Dendrocopos*, 43.
megala, *Avicedea* s., 12.
melania, *Hydrobates*, 26.
 —, *Procellaria*, 26.
melanocephala, *Emberiza*, 97.
 —, *Sylvia*, 110.
Melanocorypha yeltoniensis, 92, 136.
melanophrys, *Diomedea*, 27.
melanopus, *Bulweria*, 29.
Melierax coombsi, 113.
 — *defensorum*, 82.
 — *gabar*, 82, 83.
 — *musicus*, 113.
 — *poliopterus*, 113.
Menura, 26.
Mesopicos ruwenzori, 59.
meyeri, *Tanysiptera* g., 12.
minor, *Apalis* j., 55, 56.
 —, *Erythropygia* g., 110.
 —, *Tanysiptera* p., 12.
minus, *Edolisoma* m., 12.
Mirafra fringillaris, 30, 31.
 — *passerina*, 30, 31.
Miro traversi, 6.
missus, *Pachyptila*, 24.
modestus, *Otus* s., 11.
moestissima, *Fregetta*, 26.
mollis, *Bulweria*, 29.
montanum, *Edolisoma*, 12.
Monticola saxatilis, 92.
montifringilla, *Fringilla*, 91.
mufuluensis, *Apalis* m., 46.
multicolor, *Petroica*, 6.
murinus, *Cuculus*, 31, 32.
musicus, *Melierax*, 113.
mystacea, *Hemiprocne*, 12.

- natalensis, *Nycticorax*, 112.
Nectarinia arturi, 60.
Neocichla angusta, 58.
nereis, *Oceanites*, 26.
niger, *Chlidonias n.*, 63.
nigricapillus, *Lioptilornis*, 51.
Ninox, 26.
ninus, *Accipiter n.*, 63.
nitidula, *Mandingoa n.*, 60.
nivalis, *Plectrophenax n.*, 33, 89.
nivea, *Pagodroma*, 29.
norrisae, *Sylvia*, 110.
novae-hollandiae, *Larus*, 5.
nuchalis, *Galachrysa*, 111.
 —, *Glaeola*, 111.
numidus, *Dendrocopos m.*, 40, 41, 42, 43.
Nyctiorax natalensis, 112.
- oberlanderi*, *Geokichla p.*, 16.
obsoleta, *Scops*, 10.
Oceanites gracilis, 26.
 —, *nereis*, 26.
Oceanodroma, 26.
Ænanthe boscaueni, 107.
 —, *lugens*, 107.
 —, *lugentoides*, 107.
 —, *lugubris*, 107.
 —, *picata*, 107.
 —, *vauriei*, 107.
okuensis, *Phœniculus b.*, 51.
olivaceus, *Geocolaptes*, 105.
Onychognathus raymondi, 58.
orientalis, *Pogonocichla s.*, 60.
Othypophantes emini, 123.
Otus botelensis, 11.
 —, *brucei*, 8, 9, 10, 11.
 —, *capensis*, 10.
 —, *cycladum*, 11.
 —, *cyprius*, 10, 11.
 —, *distans*, 8, 9, 10, 11.
 —, *elegans*, 11.
 —, *feæ*, 10, 11.
 —, *flammeolus*, 10, 11.
 —, *interpositus*, 11.
 —, *japonicus*, 10, 11.
 —, *leggei*, 11.
 —, *modestus*, 11.
 —, *pamelæ*, 9, 10, 11, 135.
 —, *pulchellus*, 11.
 —, *rarus*, 11.
 —, *rufipennis*, 11.
 —, *scops*, 8, 9, 10, 11.
 —, *senegalensis*, 8, 11.
 —, *socotranus*, 11.
 —, *stictonotus*, 11.
 —, *sunia*, 10, 11.
 —, *turanicus*, 11.
owstoni, *Hydrobates*, 30.
Oxyura, 26.
- Pachyptila*, 5, 27.
 —, *balæna*, 25.
 —, *belcheri*, 23, 24, 25, 29.
 —, *crassirostris*, 24.
 —, *desolata*, 23, 24, 25.
 —, *gouldi*, 24, 25.
 —, *macgillivrayi*, 24, 25.
 —, *maui*, 25.
 —, *missus*, 24.
 —, *salvini*, 23, 24, 25.
 —, *turtur*, 23, 24.
 —, *vittata*, 23, 24, 25.
pacifica, *Procellaria*, 27.
Pagodroma nivea, 29.
pallida, *Hippolais l.*, 17.
palpebrata, *Diomedea*, 28.
pamelæ, *Otus s.*, 9, 10, 11, 135.
Parisoma buryi, 110.
 —, *lencomelaena*, 109.
 —, *somaliensis*, 109.
parkini, *Passer d.*, 122.
Passer bactrianus, 122, 123.
 —, *domesticus*, 122.
 —, *parkini*, 122.
passerina, *Mirafra*, 30, 31.
Pelecanoides, 5, 27.
perconfusus, *Budytès*, 130.
peregrinus, *Falco p.*, 30.
Petroica dannefærdi, 6.
 —, *macrophala*, 6.
 —, *multicolor*, 6.
Phalacrocorax, 26.
Phasianus colchicus, 42, 135.
 —, *satscheuensis*, 42.
 —, *tenebrosus*, 42.
 —, *versicolor*, 42.
Phœniculus bollei, 51.
 —, *jacksoni*, 51.
 —, *okuensis*, 51.
Phœnicurus phœnicurus, 91.
Phyllanthus, 50.
 —, *atripennis*, 51.
Phyllastrephus alfredi, 59.
 —, *cabanisi*, 71.
 —, *fischeri*, 71.
 —, *icterinus*, 71.
 —, *serlei*, 70.
 —, *sucosus*, 71.
 —, *xavieri*, 70, 71.
Phæbetria, 27.
Phylloscopus bonelli, 46.
piaggiæ, *Geokichla p.*, 16.
Pica, 40.
picata, *Ænanthe*, 107.
pinetorum, *Dendrocopos m.*, 40.
Pirenistes, 59.
Platalea, 26.
platyrhynchos, *Anas*, 39.
Plectrophenax nivalis, 33, 89.
Ploceus baglafecht, 123.

- Ploceus jacksoni*, 123.
 — *jacundus*, 123.
 — *spekeoides*, 20.
Podiceps ruficollis, 108.
Pogonocichla orientalis, 60.
Poliolais alexanderi, 74, 135.
 — *lopezi*, 74, 135.
 — *manengubae*, 74, 135.
poliopterus, *Melierax*, 113.
Prinia, 110.
Procellaria, 26.
 — *aequinoctialis*, 29.
 — *albigularis*, 26.
 — *amphitrite*, 26.
 — *borealis*, 30.
 — *byroni*, 30.
 — *cinerea*, 29.
 — *conspicillata*, 29.
 — *creatopus*, 30.
 — *diomedea*, 30.
 — *disputans*, 30.
 — *elegans*, 30.
 — *grallaria*, 135.
 — *gravis*, 29.
 — *leucomelas*, 30.
 — *melia*, 26.
 — *pacifica*, 27.
 — *reinholdi*, 30.
Prodotiscus regulus, 59.
Pterocles gutturalis, 111.
Pterodroma, 5.
 — *aterrima*, 25.
 — *brevirostris*, 25, 26.
 — *macroptera*, 25, 26.
Puffinus, 5, 26.
 — *reinholdi*, 27.
pulchellus, *Otus s.*, 11.
Pyromelana, 112.

Quelea erythrops, 112.
Querquedula capensis, 111.
querquedula, *Anas*, 58.

raaltenii, *Anthus r.*, 18.
rarus, *Otus s.*, 11.
raymondi, *Onychognathus t.*, 58.
regulus, *Prodotiscus r.*, 59.
reinholdi, *Procellaria*, 30.
 —, *Puffinus*, 27.
richmondi, *Diomedea*, 27.
rohui, *Diomedea*, 27.
rostrata, *Bulweria*, 29.
rothschildi, *Diomedea*, 27.
rubecula, *Eriihacus*, 39.
rubicola, *Saxicola t.*, 84.
rubrirostris, *Anser a.*, 125.
ruficollis, *Podiceps r.*, 108.
rufipennis, *Otus s.*, 11.

rufitergum, *Garrulus*, 40.
rufocinctus, *Lioptilornis*, 51.
rufuloides, *Anthus r.*, 18.
rufus, *Cursorius c.*, 104, 105.
rutila, *Emberiza*, 97.
ruwenzori, *Mesopicos g.*, 59.

salvini, *Diomedea b.*, 5, 28.
 —, *Pachyptila*, 23, 24, 25.
samaligae, *Aplopelia s.*, 20.
sanfordi, *Diomedea*, 27.
satscheuensis, *Phasianus c.*, 42.
saxitalis, *Monticola*, 92.
Saxicola archimedes, 84.
 — *desfontainesi*, 84.
 — *græcorum*, 84.
 — *hibernans*, 91.
 — *insularis*, 84.
 — *rubicola*, 84.
schach, *Lanius*, 121, 122.
schlegelii, *Francolinus*, 103, 123.
sclateri, *Calandrella s.*, 106.
 —, *Spizocorys*, 106.
Scops oboleta, 10.
scops, *Otus s.*, 8, 9, 10, 11.
Scotocerca, 110.
senegalensis, *Otus s.*, 8, 11.
Serinus albogularis, 107, 108.
 — *crocropygia*, 107.
 — *sordahlæ*, 108.
 — *theresæ*, 107.
serlei, *Phyllastrephus x.*, 70.
signata, *Eremopterix*, 108.
simplex, *Aplopelia*, 21.
smilarhis sowerbyi, 85.
socotranus, *Otus s.*, 11.
somaliensis, *Parisoma b.*, 109.
 —, *Sylvia*, 110.
somereni, *Anthreptes c.*, 83, 84.
songaeensis, *Apalis m.*, 46.
sordahlæ, *Serinus a.*, 108.
sowerbyi, *Buccanodon w.*, 60, 85.
 —, *Smilarhis*, 85.
Spatula clypeata, 49, 58, 135.
spekeoides, *Ploceus*, 20.
Spizocorys sclateri, 106.
spurius, *Icterus*, 97.
stenozona, *Aviceda s.*, 12.
Sterna, 26.
 — *albifrons*, 63.
 — *macrura*, 63.
 — *vittata*, 5.
Stercorarius, 26.
stictonotus, *Otus*, 11.
stormsi, *Turdus o.*, 57, 58, 111.
strepera, *Anas*, 39.
stresemanni, *Buccanodon w.*, 60.
striata, *Coracina*, 32.
Struthio camelus, 7.
 — *syriacus*, 6, 8.

Sturnus vulgaris, 92.
sucusus, *Phyllastrephus f.*, 71.
sulphurata, *Campephaga*, 31, 32.
sulphuratus, *Cuculus*, 31, 32.
sundevallii, *Euplectes o.*, 112.
sunia, *Otus s.*, 10, 11.
Sylvia blanfordi, 109, 110.
 — *hortensis*, 109.
 — *leucomelaena*, 109, 110.
 — *melanocephala*, 110.
 — *norrisae*, 110.
 — *somaliensis*, 110.
Symplectes amaurocephalus, 59.
 — *eremobius*, 123.
syriacus, *Dendrocopos s.*, 41, 42, 43.
 — *Struthio c.*, 6, 8.

Tæniaparadisea, 16.
taha, *Euplectes a.*, 112.
Tanyiptera galatea, 12.
 — *meyeri*, 12.
 — *minor*, 12.
 — *vulcani*, 12.
Tarsiger cyanurus, 46.
tenebrosus, *Phasianus c.*, 42.
tephronotus, *Lanius*, 121, 122.
tethys, *Thalassidroma*, 26.
Tetrao lugens, 42, 135.
Thalassidroma hornbyi, 26.
 — *macgillivrayi*, 26.
 — *tethys*, 26.
Thalassoica, 25, 135.
theresae, *Apus a.*, 105.
 —, *Calandrella s.*, 106.
 —, *Cursorius c.*, 104, 105.
 —, *Geocolaptes o.*, 105.
 —, *Serinus a.*, 107.
thunbergi, *Budytus t.*, 131.
Thyellodroma, 27.
toulsoni, *Apus a.*, 111.
 —, *Cypselus*, 111.
transkeiensis, *Anthus r.*, 17.
traversi, *Miro*, 6.

Trochocercus albonotatus, 59.
tropica, *Fregetta*, 26, 135.
turanicus, *Otus s.*, 11.
Turdooides, 50.
Turdus stormsi, 57, 58, 111.
 — *williami*, 57.
turtur, *Pachyptila*, 23, 24.
Tyto camerooneensis, 76.
 — *capensis*, 76.
 — *libratus*, 76.
ugandæ, *Anthreptes c.*, 84.
usambaræ, *Bradypterus m.*, 54, 55, 57.
usheri, *Eremialector b.*, 59.
validirostris, *Lanius v.*, 121, 122.
varius, *Hierococcyx v.*, 56.
vauriei, *Ænanthe*, 107.
versicolor, *Phasianus*, 42.
Viridibucco chyulu, 133, 134.
 — *leucomystax*, 134.
viridisplendens, *Cyanomitra v.*, 59.
vittata, *Pachyptila*, 23, 24, 25.
 —, *Sterna*, 5.
vittatum, *Heterotrogon v.*, 59.
vulcani, *Tanysiptera g.*, 12.
vulgaris, *Sturnus v.*, 92.
Vultur chincou, 113.
waddelli, *Babax*, 4, 5.
 —, *Garrulax l.*, 4, 5.
westralis, *Diomedea*, 27.
whytei, *Cinnyris a.*, 19, 20.
williami, *Turdus o.*, 57.
williamsi, *Geokichla p.*, 16.
wilsoni, *Bradypterus b.*, 18, 19.
xavieri, *Phyllastrephus x.*, 70, 71.
yeltoniensis, *Melanocorypha*, 92, 135.
youngi, *Bradypterus m.*, 54, 55.

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