

THE MOULTS AND SEQUENCE OF PLUMAGES OF THE BRITISH WADERS.

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PART VI.

CURLEW-SANDPIPER (*E. ferruginea*).

ADULTS.—Complete moult from July to December. From February to July there is a partial moult involving the body-feathers (not all the scapulars, nor all the feathers of the back and rump, nor all the upper tail-coverts), usually the tail-feathers and some innermost secondaries and coverts, some median coverts and sometimes one or two lesser coverts, but not the rest of the wings. In some individuals some winter body-feathers are retained on the upper and under-parts and the median and lesser coverts are not moulted. The sexes are alike in winter plumage, but in summer the female has the feathers of the upper-parts with more numerous ash-grey tips, not so plentifully and richly marked with orange-cinnamon as in the male; in some females the ear-coverts, cheeks and sides of neck are pale orange-cinnamon instead of russet as in the male; the feathers of throat and breast are usually paler and more broadly tipped white and usually more plentifully barred and spotted sepia, flanks more or less intermixed with white feathers barred sepia, belly and vent usually more or less intermixed with white feathers, in some the belly and vent more or less white.

N.B.—One specimen (February 3rd, New Zealand) in winter plumage had the 3rd primary of each wing in quill.

JUVENILE.—*Male and female.*—The upper-parts are distinct but the under-parts are much like the adult in winter plumage. Crown sepia, feathers edged and tipped buff, nape greyish or buffish-white streaked dusky; mantle, scapulars and innermost secondaries and coverts black-brown or sepia, the feathers edged cream or warm buff, scapulars and innermost secondaries and coverts darker subterminally (in the adult in winter the innermost secondaries and coverts are ash-brown, the shafts darker and the edges of the feathers lighter, in some narrowly edged white); back and rump ash-brown as in the adult, but the feathers with narrow buff, instead of white tips; upper tail-coverts white as in the adult, but with faint terminal dusky lines; lower throat and breast pale or pronounced buff, the feathers of the lower throat and sides of breast with dusky shafts, giving a streaked appearance (in the adult the breast is white faintly streaked brown, most pronounced at the sides of the breast, which are shaded fulvous); flanks and belly white as in the adult, but in some washed pale buff; the tail-feathers ash-brown as in the adult, but more broadly tipped white; central pairs with a subterminal shading of sepia, in some tipped buff; median coverts pale sepia or ash-brown (usually with subterminal borders of sepia) with warm or light buff edges; lesser coverts same, but with narrower buff edges (in the adult the median and lesser coverts are ash-brown edged white, the shafts darker).

FIRST WINTER.—*Male and female.*—The juvenile body-feathers (not all the scapulars or all the feathers of the back and rump), sometimes the central pair of tail-feathers, innermost secondaries and coverts, some median and lesser coverts, are moulted from September to December, but apparently not the rest of the tail-feathers and not

the rest of the wings. After this moult the birds are like the adults, but are distinguished by the light buff edgings to the median coverts (especially the innermost) and lesser coverts.

FIRST SUMMER.—None examined. Several first winter birds shot in spring were in full moult into winter plumage and were moulting the wings as well. Possibly these were abnormal.

LITTLE STINT (*E. m. minuta*).

ADULTS.—Complete moult from August to December. From March to May there is an almost complete moult involving the body-feathers, tail-feathers, primaries, secondaries and their coverts, innermost secondaries and coverts, some median and lesser coverts. There is a distinct winter and summer plumage. The sexes are alike.

JUVENILE.—*Male and female*.—Upper-parts distinct from the adult but the under-parts much as in the adult in winter. Crown black-brown, feathers edged light or warm buff; nape greyish-white streaked dusky; mantle and scapulars black-brown, some of the scapulars ashy or sepia-brown shaded darker towards the tip, feathers with ochraceous-tawny, warm buff and cream edges; back, rump and central upper tail-coverts black-brown, the feathers edged ochraceous-tawny; breast pale ochraceous-buff, at sides streaked dusky, the feathers edged warm buff (in the adult the breast is white, faintly streaked dusky at sides); remaining under-parts as in the adult; central pair of tail-feathers dark sepia as in the adult, but edged tawny; innermost secondaries and coverts as scapulars (instead of ash-brown shaded sepia centrally as in the adult); median coverts ash-brown or sepia edged warm buff (instead of ash-brown with lighter edges and dark shafts as in the adult).

FIRST WINTER.—*Male and female*.—The juvenile body-plumage (not all the scapulars nor all the feathers of the back and rump) occasionally the central pair of tail-feathers, innermost secondaries and coverts, and some median and lesser coverts are moulted from September to January, but not the rest of the wings or the tail-feathers. After this moult, the birds resemble the adults, but are distinguished by the warm buff edges to the retained juvenile wing-coverts.

FIRST SUMMER.—Moult as in the adult, after which the birds are only distinguished from the adults by the warm buff edges to the retained juvenile innermost median coverts.

AMERICAN STINT (*E. m. minutilla*).

ADULTS.—Complete moult from autumn to December. From March to June there is a moult involving the body-feathers, tail-feathers, innermost secondaries and coverts, some median and lesser coverts. In some individuals one or two winter feathers are retained on the upper-parts. Only a dozen spring birds were examined and none of these was actually moulting the primaries or secondaries, but from the fresh appearance of the remiges in some, it is probable that they are moulted at this season as they are in the Little Stint. The American Stint is smaller than the Little Stint and in winter plumage has the upper breast streaked dusky, not white as in the Little Stint, while in summer the upper-parts are darker, the feathers broadly edged ash-brown and less plentifully margined with orange-cinnamon. Sexes alike.

JUVENILE.—*Male and female*.—Like juvenile Little Stint but upper-parts much darker and the pale ochraceous-buff of the breast narrowly streaked dusky.

FIRST WINTER.—*Male and female.*—The juvenile body-plumage (not all the scapulars), sometimes the tail-feathers and some innermost secondaries and coverts but apparently not the median and lesser coverts are moulted in autumn but not the rest of the wings. After this moult the birds are like the adults but are distinguished by the worn buff edges to the juvenile median and lesser coverts and tawny edges to innermost median coverts.

FIRST SUMMER.—Moult as in the adult and plumage as in the adult summer, but distinguished by the worn buff edges to the retained juvenile wing-coverts.

TEMMINCK'S STINT (*E. temminckii*).

ADULTS.—Complete moult from July to December. From February to May there is an almost complete moult involving the body-feathers, tail-feathers (often the central pair only and sometimes none of the tail-feathers), the primaries and secondaries and their coverts and some median and lesser coverts. (In some specimens some winter feathers are retained on the upper-parts.) The winter and summer plumages are distinct and the sexes are alike.

JUVENILE.—*Male and female.*—Upper-parts distinct from the adult, but the under-parts like the adult in winter; crown sepia, the feathers edged warm buff; nape ash-brown, the feathers faintly edged buff; mantle and scapulars olive brown, the feathers fringed warm buff and some shaded sepia centrally and others subterminally bordered sepia; back, rump and central upper tail-coverts sepia or black-brown as in the adult but the feathers edged warm buff; ear-coverts, cheeks and sides of neck warm or light buff streaked dusky (instead of ash-grey tinged brown, some of the feathers of cheeks in some edged light buff or white giving a streaked appearance as in the adult); lower throat and breast ashy, the feathers suffused and tipped warm or light buff, remaining under-parts as in the adult (in the adult the breast is washed with pale ashy-fulvous, the feathers tipped ashy-white), tail-feathers as in the adult, but all except the three outer pairs edged warm buff; wing as in the adult but innermost secondaries and coverts and median coverts as mantle; lesser coverts black-brown, the feathers tipped warm buff (in the adult the innermost secondaries and coverts are sepia tinged olive and the median and lesser coverts are ashy-grey tinged brown with the shafts darker).

FIRST WINTER.—*Male and female.*—The juvenile body-feathers (not all the scapulars nor all the feathers of the back and rump), sometimes the central pair of tail-feathers, innermost secondaries and coverts and some median and lesser coverts are moulted from August to December, but not the rest of the wings. After this moult, the birds are like the adults, but are distinguished by the retained juvenile feathers of the back and rump when not too abraded and by the worn buff edges to the retained juvenile wing-coverts.

FIRST SUMMER.—Moult as in the adult and the birds are like the adults, but distinguished by the retained juvenile median and lesser coverts.

AMERICAN PECTORAL SANDPIPER (*E. maculata*).

ADULTS.—Complete moult in autumn and winter, which, judging from the material examined, commences in August with the body-feathers and sometimes some innermost secondaries, the moult of the rectrices and remiges taking place in winter and early spring. From February to June there is a partial moult involving the body-feathers (not all

the scapulars and apparently not the feathers of the back and rump), occasionally the central pair of tail-feathers, some innermost secondaries and coverts, and some median and lesser coverts, but not the rest of the wings nor apparently the rest of the tail-feathers. In some specimens some winter feathers are retained on the upper-parts. The winter and summer plumages differ chiefly in the coloration of the upper-parts. The sexes are alike in plumage but the wings of the females average shorter than those of the males.

N.B.—In some examples the wing-moult is not completed till February or March.

(One male, Rio Cilmaiguen, 22/2/91, moulting primaries, also body-feathers; the new feathers appear to be those of the summer plumage.)

JUVENILE.—*Male and female.*—Resembles the adult in summer plumage; the crown is black-brown, the feathers edged tawny as in the adult; nape heavily streaked black-brown or sepia, the feathers edged at sides light ochraceous-buff as in the adult; mantle, scapulars and innermost secondaries and coverts black-brown, the feathers edged tawny, ochraceous-buff and creamy-white (in the adult these parts are black-brown without the cream edges, the feathers tipped ash-brown and more or less edged at sides light ochraceous-buff and cinnamon, which in some specimens completely replaces the ash-brown edges; innermost secondaries and coverts black-brown edged tawny or ochraceous-buff); remaining upper-parts as in the adult; throat and breast light buff streaked sepia (instead of ashy-fulvous, with the feathers heavily streaked dusky brown and fringed white or pinkish-buff as in the adult); remaining under-parts and tail-feathers as in the adult; wing as in the adult in winter but the median and lesser coverts sepia or black-brown edged tawny, ochraceous or light buff (instead of sepia, edged ash-brown with the edges in some tinged light pinkish-cinnamon as in the adult).

FIRST WINTER AND SUMMER.—(None examined.) ♂, Buenos Ayres, Oct. 27th, with juvenile wing-coverts and moulting mantle and scapulars; one (November) moulting head, nape, mantle and under-parts, no other moult; one (December) still in juvenile plumage and not moulting. First winter birds are probably the same as adult winter, but distinguished by the juvenile wing-coverts.

SIBERIAN PECTORAL SANDPIPER (*E. acuminata*).

ADULTS.—The body-feathers are moulted in autumn, but the rectrices and remiges are not renewed till winter or early spring. From February to May there is a partial moult involving the body-feathers (apparently not all the scapulars nor all the feathers of the back and rump), sometimes the tail-feathers, some innermost secondaries and coverts and usually some median and lesser coverts but not the rest of the wings. In some individuals some winter body-feathers are retained. In autumn, the body-moult does not apparently commence before September; two September specimens were moulting the body-feathers, one in November was moulting the mantle but not the wings, November and December birds examined were moulting the remiges, while one or two February examples were in full wing-moult and were getting summer feathers on the body. From the data given above it will be seen that the autumn and spring moults merge one into the other. The winter and summer plumages differ in coloration. The sexes are alike.

JUVENILE.—*Male and female.*—Like the adult in summer plumage,

but the black-brown mantle and scapulars are edged with ochraceous-buff, ochraceous-tawny and cream instead of with orange or pinkish-cinnamon and light ash-brown as in the adult; chin white, lower throat warm buff streaked sepia, breast buff slightly streaked sepia at sides and flanks white washed buff (in the adult the chin and throat are white heavily spotted with sepia, the lower throat and breast pinkish-cinnamon, the feathers with white edges and spots or wavy V-shaped bars of dusky brown, while the flanks are white or tinged pinkish-cinnamon and similarly barred); innermost secondaries and coverts sepia or black-brown broadly edged ochraceous-tawny or orange-cinnamon (not sepia edged orange-cinnamon and ash-brown as in the adult); median and lesser coverts sepia margined buffy-white or ochraceous-buff, the innermost median coverts edged ochraceous-tawny or ochraceous-buff (in the adult the new median and lesser coverts are ash-brown fringed pinkish-cinnamon and the innermost median coverts ash-brown edged white).

FIRST WINTER.—*Male and female*.—The juvenile body-feathers (apparently not all the scapulars and not the feathers of the back and rump), sometimes the central pair of tail-feathers, some innermost secondaries and coverts, are moulted from October to January, but apparently not the rest of the wings or the tail-feathers. After this moult the birds resemble the adults in winter, but are distinguished by the worn edges of the juvenile wing-coverts least abraded on the innermost median coverts (in the adult in winter plumage the median and lesser coverts are ash-brown with dark shafts and whitish edges).

N.B.—One bird, January 25th, is acquiring first winter feathers on the body and is also moulting the remiges, innermost secondaries and coverts, some median and lesser coverts. Very few first winter specimens were examined.

FIRST SUMMER.—Apparently not to be distinguished with certainty from the adult summer.

N.B.—One February specimen examined was moulting the wings and also acquiring summer plumage.

BAIRD'S SANDPIPER (*E. bairdii*).

ADULTS.—Complete moult from August to February or even March; from the few specimens examined it appears that the body-moult commences in August but the wing-moult is deferred till winter and early spring, judging by several examples with the 2nd primary in quill in February and March; one bird, March 10th, had the 2nd primary in quill and was getting summer feathers on the upper-parts. There is a partial spring moult involving the body-feathers, but apparently not usually the tail-feathers, or the wings. The winter and summer plumages are rather alike, but in summer the upper-parts are darker, the feathers with broad edges of light buff and sandy-brown. Sexes alike.

N.B.—One, Uruguay, April 4th, had the 2nd primary in quill and the rest of the wings, except the median and lesser coverts, new, the tail-feathers new, the central pair being as in winter but edged with buff, the new innermost secondaries and coverts were sepia, edged with orange-cinnamon.

JUVENILE.—*Male and female*.—Resembles the adult in winter plumage, but the crown and nape are sepia, the feathers edged sandy or pinkish-buff (instead of ash-brown with the feathers streaked darker sepia centrally and edged pinkish-buff as in the adult); mantle and scapulars dark sepia, the feathers with fairly broad white edges, some

shading into ash-brown towards the tip (in the adult the mantle and scapulars are ash-brown edged pinkish-buff, the shafts and centres of the feathers sepia and without white edges); back, rump and central upper-tail coverts black-brown, the feathers edged pinkish-buff (instead of sepia, edged sandy-buff as in the adult); lateral upper tail-coverts as in the adult; breast more pinkish-buff than in the adult and faintly streaked dusky (in the adult the feathers of the breast have the shafts mostly brown, giving a streaked appearance); tail-feathers as in the adult, but the central pair edged buff instead of ash-brown or white as in the adult; wing as in the adult, but the innermost secondaries and coverts and median and lesser coverts sepia or ash-brown edged white and pinkish-buff (in the adult the innermost secondaries are sepia edged sandy and the median and lesser coverts ash-brown with pinkish-buff edges and shaded darker centrally).

FIRST WINTER.—*Male and female*.—The juvenile body-feathers (not all the scapulars and not the feathers of the back and rump), some innermost secondaries and coverts, and some median and lesser coverts are moulted in autumn, but not the rest of the wings and not the tail-feathers in the specimens examined. After this moult the birds are like the adults, but are distinguished by the white or buffy-white edges to the juvenile wing-coverts.

FIRST SUMMER.—Moult as in the adult and apparently the first summer bird cannot be distinguished with certainty from the adult summer.

BONAPARTE'S SANDPIPER (*E. fuscicollis*).

ADULTS.—Complete moult from August to January; the body-moult takes place in August and September while the moult of the remiges is delayed till winter (January) or early spring (February and March), judging by the specimens examined. In spring there is a partial moult involving the body-feathers (not all the feathers of the back and rump or all the tail-coverts), apparently the tail-feathers, occasionally some innermost secondaries and coverts, but not the rest of the wings. The winter-moult of the primaries is often not completed before the spring-moult commences. The winter and summer plumages are distinct and the sexes are alike.

JUVENILE.—*Male and female*.—Upper-parts distinct from the adult, but under-parts much like the adult in winter plumage; crown streaked sepia or black-brown, the feathers edged at sides tawny; nape ash-brown, streaked darker; mantle and scapulars sepia or black-brown, the feathers broadly edged tawny and tipped white; back, rump and central upper tail-coverts sepia as in the adult, but the feathers edged tawny instead of greyish-white; under-parts white as in the adult winter, but the breast washed light buff instead of pale ashy-brown, the feathers edged white and narrowly streaked and spotted sepia or dusky brown as in the adult; tail-feathers as in the adult; wing as in the adult but the innermost secondaries and coverts sepia edged tawny, instead of sepia shading to ash-brown at the edge of the feather as in the adult; median and lesser coverts sepia with broad white or light buff edges and some of the innermost median coverts edged tawny (in the adult the median and lesser coverts are sepia with ash-white edges).

FIRST WINTER.—*Male and female*.—The juvenile body-plumage (not all the scapulars nor all the feathers of the back and rump) in some, some innermost secondaries and coverts, but usually not the rest of the wings and not the tail-feathers in the specimens examined are moulted from September to January. After this moult the birds

are like the adults, but are distinguished by having tawny edges to the feathers of the back and rump and innermost median coverts and light buff edges to some median and lesser coverts.

N.B.—Three January specimens examined were moulting the primaries, greater coverts, innermost secondaries and coverts and median coverts and were getting winter feathers on the mantle.

FIRST SUMMER.—(Not examined.)

BUFF-BREASTED SANDPIPER (*E. subruficollis*.)

ADULTS.—Complete moult in autumn (but very few specimens moulting remiges examined). In spring there is a partial moult involving the body-feathers (not all the scapulars), sometimes the tail-feathers, some innermost secondaries and coverts and apparently some median and lesser coverts, but not the rest of the wings. There is no difference in coloration between the winter and summer plumages. The sexes are alike in plumage but the female is much smaller than the male.

N.B.—One specimen Buenos Ayres, 20/2/76 with 2nd primary in quill and moulting the body-feathers, the tail-feathers new; one June 2nd with 2nd primary in quill and in body-moult; ♀, Buenos Ayres, 14/6/99 with 2nd primary in quill and in body-moult.

JUVENILE.—*Male and female.*—Like the adult, but the feathers of the crown narrowly edged light, instead of sandy, buff as in the adult; mantle and scapulars black-brown, the feathers edged creamy-white, the long scapulars olive-brown edged creamy-buff (in the adult these parts and the back, rump and upper tail-coverts are blackish olive-brown, broadly edged sandy- or pinkish-buff); back, rump and upper tail-coverts sepia, the feathers darker towards the tip and with narrower edges of warm or pinkish buff; sides of neck sandy-buff minutely spotted dusky instead of uniform pinkish-buff as in the adult, remaining under-parts as in the adult; tail-feathers usually without the brown specklings; inner-webs of the primaries minutely and closely speckled and irregularly barred olive-brown (in the adult these specklings and barrings are larger and further apart, this distinction being most pronounced if the 2nd primaries of the juvenile and adult be compared); inner-webs of the secondaries white towards the base, without, or with only a few, minute specklings and barrings of olive-brown, instead of boldly marked, barred or freckled sepia or black-brown as in the adult; innermost secondaries olive-brown shading to lighter brown, edged sandy or pinkish-buff and tipped cream (in the adult blackish olive-brown shading to olive-brown at edges); median coverts sandy-brown with cream buff edges and a subterminal bar or central streak of sepia, the inner median and lesser coverts sepia with sub-terminal darker bars and edged pinkish-buff (in the adult the median and lesser coverts are pinkish-buff, shading to sandy-brown at base and with irregular black-brown **Y**, **V** or semicircular markings).

FIRST WINTER AND SUMMER.—(Not examined.)

PURPLE SANDPIPER (*E. m. maritima*.)

ADULTS.—Complete moult from August to November. In spring there is a partial moult involving the body-feathers (apparently not all the scapulars and not the feathers of the back and rump, nor the upper tail-coverts), sometimes some innermost secondaries and their coverts (apparently not the median and lesser coverts, but not many specimens in spring moult examined), but not the tail-feathers and not the rest of the wings. The winter and summer plumages differ

in coloration. The sexes are alike in plumage but the wings and bills of the females are longer.

JUVENILE.—*Male and female.*—Like the adult in winter plumage, but the feathers of the crown sepia faintly tipped cream (in the adult the crown is sooty-black or sooty-brown, the feathers edged dark ash-grey); mantle and scapulars dark sepia edged creamy-white (instead of black-brown glossed bronze-purple, the feathers edged dark ash-grey as in the adult), innermost secondaries and coverts and median and some lesser coverts as in adult, but with broad cream-white edges, in some specimens one or two innermost median coverts being tipped pinkish-cinnamon (in the adult the innermost secondaries and coverts are like the mantle and the median and lesser coverts black-brown or sooty-brown narrowly edged greyish-white).

FIRST WINTER.—*Male and female.*—The juvenile body-plumage (not all the scapulars and not the feathers of the back and rump, nor all the tail-coverts) are moulted from September to December, but apparently not the tail-feathers and not the wings. After this moult the birds are like the adults, but are distinguished by one or two retained juvenile scapulars and by the innermost juvenile secondaries and coverts, and median and lesser coverts.

FIRST SUMMER.—Moult as in the adult and the birds are like the adults, but distinguished by the juvenile innermost secondaries and coverts and median coverts.

GENUS *Ercunetes*.

SEMI-PALMATED SANDPIPER (*E. p. pusilla*).

ADULTS.—Complete moult from July to November. From February to May there is a partial moult involving the body-feathers (not all the scapulars nor all the feathers of the back, rump and upper tail-coverts), sometimes the tail-feathers, innermost secondaries and coverts, but not the rest of the wings. The winter and summer plumages are distinct and the sexes are alike in plumage, but the wings of the females average longer.

N.B.—One or two February specimens examined had the 2nd primary in quill, but as a rule the moult of the remiges appears to be completed earlier.

JUVENILE.—*Male and female.*—Resembling the adult in summer plumage but the crown sepia or black-brown, the feathers edged sandy-buff (in the adult the crown is black-brown, the feathers edged pinkish-buff); nape streaked sepia or dusky brown, the feathers edged cream or ashy-white (instead of light or pinkish-buff more heavily streaked sepia or dusky brown as in the adult); mantle and scapulars sepia or black-brown, the feathers edged ochraceous-buff and creamy-white (in the adult the mantle and scapulars are black-brown, the feathers with broad edges of ash-brown, these edges washed pinkish-buff or pinkish-cinnamon especially on the scapulars); back, rump and upper tail-coverts sepia, the feathers with sandy-brown, instead of ash-brown, edges as in the adult; under-parts as in the adult, but the upper breast washed buff and streaked dusky brown at the sides but in some the centre of the upper breast is white (in the adult the lower throat and upper breast are white spotted and streaked sepia); tail-feathers as in the adult, but edged sandy-buff; wing as in the adult, but the innermost secondaries and coverts sepia edged ochraceous-buff and sandy-buff and creamy-white; median coverts pale sepia or ash-brown edged sandy-buff or cream; lesser coverts sepia edged sandy-buff (in the adult the innermost secondaries and

coverts are sepia shading to ash-brown and faintly tipped white, median and lesser coverts ash-brown faintly tipped white).

FIRST WINTER.—*Male and female*.—The juvenile body-plumage (apparently not all the scapulars nor all the feathers of the back and rump), sometimes the central pair of tail-feathers, innermost secondaries and coverts and some of median and lesser coverts are moulted from September to November, but not the rest of the wings and apparently not the rest of the tail-feathers. After this moult the birds are like the adults, but are distinguished by the creamy and sandy-buff edges to the juvenile wing-coverts, least abraded on the innermost median coverts.

FIRST SUMMER.—Like the adult and only distinguished by the retained juvenile wing-coverts. Only one specimen examined.

GENUS *Limicola*.

BROAD-BILLED SANDPIPER (*L. f. falcinellus*).

ADULTS.—Complete moult from August to January. From February to May there is a partial moult involving the body-feathers (not all the scapulars nor all the feathers of the back and rump), the central pair of tail-feathers, occasionally all the tail-feathers, innermost secondaries and coverts and a few median and lesser coverts, but not the rest of the wings. The winter and summer plumages are distinct and the sexes are alike.

JUVENILE.—*Male and female*.—Like the adult in summer plumage but has the cheeks and sides of the neck light buff streaked dusky; lower throat and upper breast white washed warm buff and with narrow streaks of sepia most pronounced at sides of breast (in the adult these parts are white, in some washed warm or cinnamon-buff, heavily streaked and spotted sepia, the centres of the feathers of the upper breast sepia); flanks white washed buff as is usual in the adult, but without the sepia shadings and barrings; innermost secondaries and coverts black-brown edged tawny or warm buff as in adult summer; median coverts sepia edged light buff or white; lesser coverts black-brown faintly edged white (in the adult in winter the innermost secondaries and coverts are ash-brown shaded sepia centrally, median coverts ash-brown edged white; lesser coverts black-brown narrowly edged white).

FIRST WINTER.—*Male and female*.—The juvenile body-plumage (apparently not all the scapulars and not the feathers of the back and rump), sometimes the tail-feathers, some innermost secondaries and coverts and some median and lesser coverts but not the rest of the wings are moulted from September to January. After this moult the birds are like the adults, but are distinguished by the retained juvenile median coverts.

FIRST SUMMER.—(Not examined.)

GENUS *Macrorhamphus*.

RED-BREASTED SNIFE (*M. g. griseus*).

ADULTS.—Complete moult from August to December, exceptional February (three specimens examined in February were complete in the wing moult and had the 2nd primary in quill in each case). From February to June there is a partial moult involving the body-feathers (not all the scapulars nor all the feathers of the back and rump), the central pair of tail-feathers, innermost secondaries and coverts, some median and in some, some lesser coverts, but not the rest of the wings

or tail-feathers. In some specimens some winter feathers are retained on the upper- and under-parts. The winter and summer plumages are distinct and the sexes are alike in plumage, but the bills of the females average longer.

JUVENILE.—The upper-parts are like the adult in summer plumage, but the under-parts are distinct. The crown is black-brown or sepia, the feathers edged cinnamon or cinnamon-buff (instead of black-brown, the feathers with pinkish-cinnamon edges as in the adult); nape dusky ash slightly streaked sepia (instead of streaked black-brown, the feathers with pinkish-cinnamon or light buff edges as in the adult); mantle and scapulars black-brown, the feathers broadly edged and barred with cinnamon-rufous or cinnamon-buff (instead of black-brown, the feathers barred and edged light ochraceous-salmon or pinkish-cinnamon as in the adult); upper tail-coverts white barred black-brown and faintly tipped buff (instead of light ochraceous-salmon, in some white, barred and marked sepia as in the adult); ear-coverts and cheeks buffy-white streaked dusky (in the adult the ear-coverts are light ochraceous-salmon streaked dusky, the cheeks the same but spotted sepia, the feathers with white edges); sides of the neck ash-brown streaked sepia and throat and upper breast ashy more or less suffused with buff, narrowly streaked and spotted with sepia (in the adult the sides of neck, throat and breast are light ochraceous-salmon, the feathers edged white and spotted sepia); flanks white, barred and spotted ash-brown, suffused and tipped with buff and belly, vent and under tail-coverts white, more or less washed buff (in the adult the flanks and under tail-coverts are light ochraceous-salmon, the feathers with irregular bars of sepia and tipped white and the remaining under-parts salmon or light ochraceous-salmon, the feathers tipped white); tail-feathers as in the adult winter, but tipped cinnamon-buff; wing as in the adult winter, but the innermost secondaries and coverts sepia, tipped, and sometimes irregularly marked longitudinally, with cinnamon or cinnamon-buff (instead of ash-grey with a brownish tinge, the feathers edged greyish-white as in the adult); median coverts sepia as in the adult but with dull ashy, cinnamon or cinnamon-buff edges instead of edged white as in the adult; in summer plumage the adult has the innermost secondaries and coverts new median and lesser coverts black-brown with pinkish-cinnamon edges. Sexes alike, but the bills of the females are longer.

FIRST WINTER.—*Male and female.*—The juvenile body-plumage (apparently not all the scapulars and not the feathers of the back and rump), sometimes the tail-feathers, some innermost secondaries and coverts and some median and lesser coverts are moulted from September to February, but not the rest of the wings. After this moult the birds are like the adults but are distinguished by some retained juvenile scapulars, innermost secondaries and wing-coverts.

FIRST SUMMER.—(Not examined.)

(To be continued.)