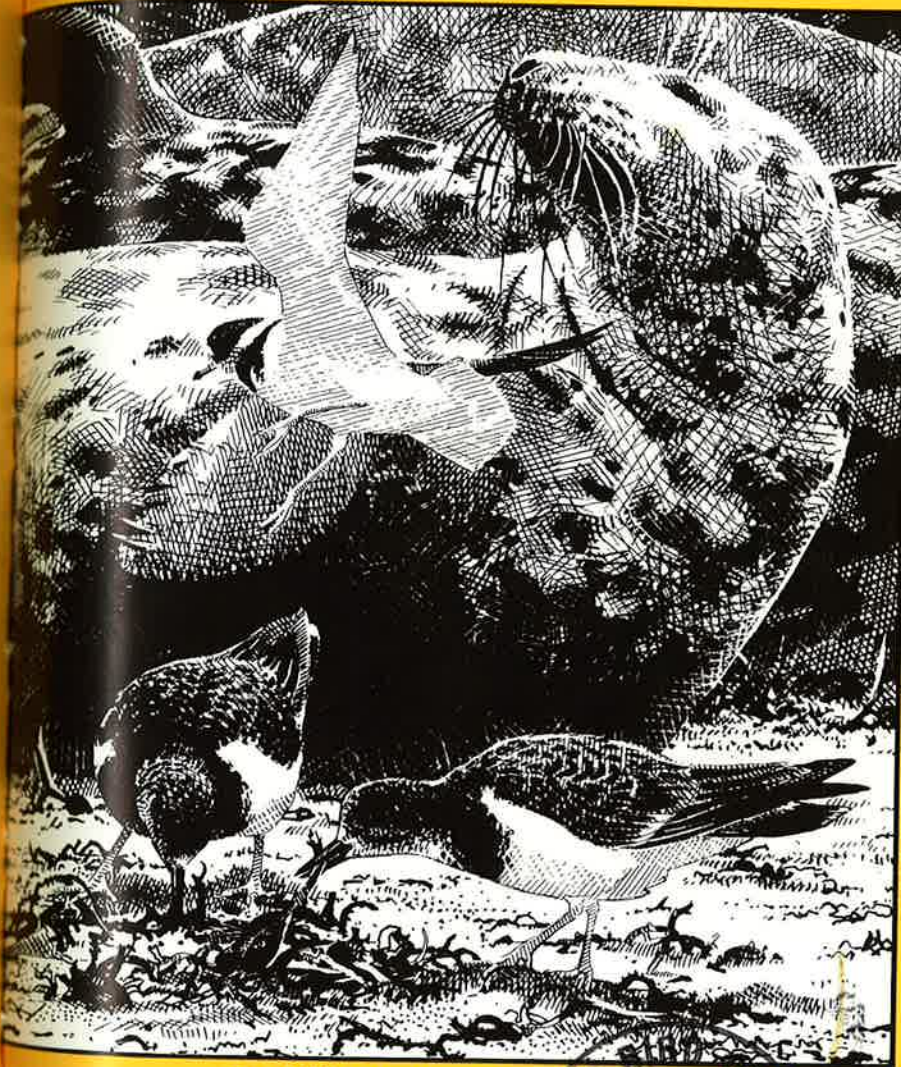


# British Birds

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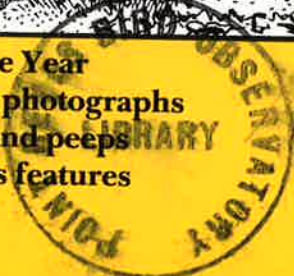
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# ies Committee , and announcements

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## *P. J. Grant and the Rareties Committee*

Most of the Committee's work is done by postal circulation of records, but there are two meetings each year. One (usually in March) is mainly to discuss procedural and policy matters. The second, usually in July, is mainly to discuss identification topics relevant to the Committee's work. D. J. Britton has recently updated a fact sheet which details the Committee's constitution, procedures and aims: a copy can be obtained from the Secretary, Michael J. Rogers, whose address is on the inside front cover, where current Committee membership is also listed (please include a SAE).

The following points arose at the meeting at Perry, Cambridgeshire, on 17th March 1984.

As there were no further nominations (*Brit. Birds* 76: 417), Alan R. Dean started his term of membership on 1st April 1984, taking the place of J. R. Mather who automatically retired as the longest-serving member. John's advice and valuable contributions to the Committee's work will be greatly missed, and we are most grateful for his work during the past eight years.

### *Review voting*

It was unanimously agreed that, when accepted records are reviewed, a more substantial vote against the record than the usual two is needed to reverse a decision; it was decided that, in future, at least six reject votes would be needed to change the decision on a previously accepted record.

### *Escape voting*

It was decided that, if at least six Committee members considered that a claim of a rarity referred to an escape from captivity, it would not be included in the county-by-county list in the 'Report on rare birds in Great Britain', or in the running totals, but would be referred to in the species comments.

### *Election of new member*

Nominations are invited to fill the next vacancy, which will arise on or before 31st March 1985. They should be sent to me by 31st December 1984. The Committee's nomination is Iain Robertson, who is currently editor of the *Shetland Bird Report*, is widely travelled in the Palearctic, and has a keen interest in identification, as evidenced by his paper on eastern races of the Stonechat (*Brit. Birds* 70: 237-245).

*P. J. Grant, 14 Heathfield Road, Ashford, Kent TN24 9DD*

# Identification of stints and peeps

*Illustrations by Lars Jonsson*

*Text by P. J. Grant*

The precision and supreme artistry of Lars Jonsson's stint paintings (plates 113 to 120) fully match the complexities of the subject. They bear the closest inspection, and provide a further major advance in stint identification, building especially on that made by Wallace (1974).

The first section of this accompanying text deals with general information relevant to stint identification as a whole. The second section covers detailed species-descriptions.

## General information

### *Topography*

Fig. 1 names the main feather groups and other features of a stint. The feather groups on the wing and upper body are rather complex. Their patterns often provide vital identification clues, so it is essential to be able to locate and identify them accurately. They are the lesser coverts, median coverts, greater coverts (these three groups together forming the

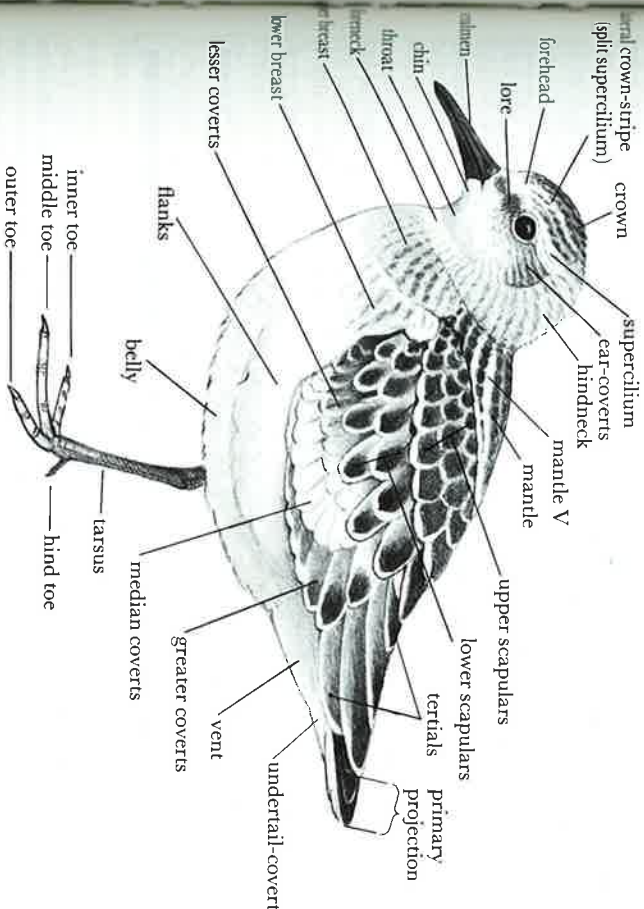


Fig. 1. Topography of a stint *Calidris* (Lars Jonsson)



'innerwing-coverts'), tertials, scapulars, and mantle. It is useful ground-work to practise locating these groups of feathers on stints and other small waders, using the plates, photographs, and close field views. Fig. 1 shows a juvenile, in which plumage the groups of feathers are pale-fringed and better demarcated than on worn summer plumage or the comparatively plain winter plumage.

For identification purposes, it is convenient to subdivide the scapulars into two groups: two rows of 'lower scapulars', and three rows of 'upper scapulars', but note that the tiny upper row of the latter is often at least partly concealed by the overlapping outer row of mantle feathers. The reason for this subdivision is that in juvenile and summer-plumaged stints there is, on some species, a clear difference of feather pattern between the upper and lower scapulars. Also, the pattern of the rear lower scapulars of juvenile stints (plate 120) is often important in identification.

The strength of any mantle or scapular 'V' is also often an important identification clue in juvenile and summer plumages. The mantle V is formed by the alignment of pale fringes between the outer two rows of mantle feathers; the scapular V is formed by pale outer fringes on the lowest row of upper scapulars. The prominence of the scapular V depends much on how the scapulars are spread; the V is usually most apparent when viewed from the rear.

It is important to note that the arrangement of the scapulars can vary from closely folded to fully spread. When the scapulars are closely folded (e.g. as in plate 113a), they lie in a compact group along the top of the wing, revealing most of the innerwing-coverts. When they are fully spread (e.g. as in plate 118c), most of the innerwing-coverts are concealed. The line of demarcation between innerwing-coverts and lower scapulars is best discerned by noting the small size of the former and the large size of the latter.

Note, too, that the secondaries (except for the four innermost, which are the tertials) and the whole of the outerwing (except for the tips of the outer primaries) are not visible when the wing is closed, being folded beneath the innerwing.

#### Ageing

When an unfamiliar stint is encountered, age diagnosis is an essential first

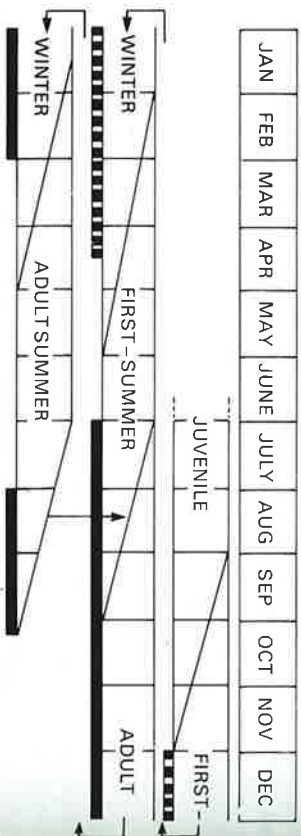


Fig. 2. Monthly incidence of plumages of typical stints *Calidris*. Arrows show sequence of plumages. Diagonal lines show typical periods of head- and body-molt. Hatched lower line shows typical period of partial wing- and tail-molt in first winter; solid lower line shows typical periods of complete wing- and tail-molt.

step in the identification process, enabling relevant comparisons with other stints of the same age. A stint may be in juvenile, first-winter, first-summer, adult winter, or adult summer plumage, or at an intermediate stage of moult between one plumage and the next. The time of year when each plumage can be encountered is indicated in fig. 2, which also shows the sequence of plumages and the typical moult periods. The timing and extent of moults are variable, according to individual variation, timing of breeding and migration, and species. General information on each plumage is given below.

**JUVENILE** In stints, full juvenile plumage is normally retained during the first southward migration and is usually much the commonest plumage amongst autumn migrants from mid August onwards. Its appearance is distinct from other plumages encountered in autumn, the upperparts and wings being uniformly fresh and unworn, with an orderly, regular pattern. Juveniles are shown in plates 113, 114 and 115d. Any rufous tones become reduced through wear and fading, so that juveniles average less rufous later in the autumn. The strength of any rufous coloration also varies individually. The whitish fringes of upperparts feathers are also prone to wear, so that the prominence of any mantle V or scapular V may be much reduced by late autumn. The acquisition of only a few grey, first-winter mantle feathers or scapulars can also reduce the strength of any mantle V or scapular V and give a greyer general appearance to the upperparts. Little Stint *Calidris minuta* in this stage of moult can look superficially like the Semipalmated Sandpiper *C. pusilla* in these respects, emphasising the need for close views to determine the precise state of plumage if a juvenile rare stint is suspected.

**FIRST-WINTER** Acquired by post-juvenile moult, typically during September to November, involving head and body feathers (including scapulars) and some wing-coverts. The start of the moult is apparently usually triggered by arrival on or near the wintering area. Distinguishable from adult-winter plumage only if the distinctive pattern of retained juvenile feathers (usually among the innerwing-coverts) can be discerned. Retained juvenile feathers are prone to wear and fade, lessening the differences from adult winter, especially from mid winter onwards.

**FIRST-SUMMER** Acquired by a moult involving a variable number—usually not all—of the primaries, secondaries and tail feathers (typically during December to April), and all of the head and body feathers and wing-coverts (typically during February to May). First-summer plumage is highly variable in appearance. At least a substantial proportion of first-summer individuals of some species (Semipalmated Sandpiper, Western Sandpiper *C. mauri*, and Red-necked Stint *C. nigricollis*) apparently remain on or near their southern wintering areas throughout their first summer and do not return north to the breeding areas with the adults; the first-summer plumage of these individuals is often little—if at all—different from winter plumage. At least the majority of other stints (Little, Temminck's *C. lemminkii*, Long-toed *C. subminuta* and Least Sandpiper *C. minutilla*) apparently do return north with the adults, and these individuals probably average closer in appearance to adult summer plumage. Bearing these points in mind, individuals with a substantial proportion of winter-like plumage during spring and summer (especially May and June) are probably first-summers.

**ADULT WINTER (= SECOND-WINTER)** Acquired by complete moult, which starts near the end of breeding activity or (in the case of non-breeders and first-summers) from the end of June onwards. Most of the moult is usually completed by the end of September, but moult of primaries and tail feathers may be protracted and not completed until the end of February. Typical winter plumages are illustrated in plates 115 and 116. Their comparatively plain coloration provides fewer opportunities for specific plumage differences than for other ages, so that structural and voice distinctions are often the best means of identification. Subtle specific differences in grey or brown tones are probably of little value on lone birds.

**ADULT SUMMER** Acquired by head-, body- and innerwing-covert-moult during January to April. Fresh summer plumage of migrants in spring (e.g. May, plates 117a & c, 118b, c & g) has whitish or greyish feather fringes. At a distance, these feathers may look little different from winter plumage. The whitish or greyish fringes are rapidly lost, revealing more of any underlying rufous tones and producing full summer plumage by the time of arrival on the breeding grounds (e.g. in June and July, illustrated in plates 117c, d & f, 118a & d). Adults in



late summer typically become highly worn, acquiring an often very dark general appearance due to further loss of feather fringes. There appears to be no consistent plumage difference between the sexes of stints.

Transition from summer to winter plumage produces a distinctive mixture of old, much-worn summer feathers and fresh grey winter ones (plates 116a & c, 117b & g). Little Stint in such plumage looks strikingly different from the usually much more numerous juveniles in migrant autumn flocks, and has provided many false alarms because of its generally greyer appearance and superficial resemblance to Semipalmated Sandpiper. Again, if a rare stint is suspected, close views are needed to determine the precise state of its plumage.

### Variation in feather patterns

Summer plumage of some stints often contains greyish, winter-like feathers among the lower scapulars, innerwing-coverts, and tertials. These are not retained winter feathers, but new feathers grown at the initial stages of the moult to summer plumage, before the individual has started its assumption of breeding condition. Feathers grown later in the moult, as the individual comes into full breeding condition, are increasingly richly coloured. While there are some distinct specific differences in the extent to which adult summer plumage contains winter-like innerwing-coverts and tertials (for example, Red-necked Stint consistently has more than Little Stint, plate 117), it may be useful to be aware of this source of individual variation. As previously explained, first-summer individuals in any case often have a more winter-like appearance than adults.

The reverse of this may also occur in the moult from summer to winter plumage, when it is possible that the first-grown feathers may have more extensive dark centres (reflecting remnants of breeding condition) than those grown later in the moult. Again, while there are some distinct specific differences in the patterns of winter-plumage feathers (e.g. the diagnostically sharply blackish-centred feathers of Long-toed Stint, plate 115c), supposed specific differences for other species may in practice require some caution. Not only is there possible variation arising from the timing of feather growth, but there also seems to be a degree of individual variation in the extent and strength of dark feather centres or shaft-streaks. It has also been suggested that feather centres of winter plumage darken and increase in extent with age, so that the upperparts of stints may average paler and plainer in early winter. Different light conditions and angles of view can also make general plumage tones appear greyer or browner, and affect the apparent strength of dark feather centres.

### Size

Measurements (from *BMP3*) of length (the conventional one of a dead bird or skin on its back measured from bill-tip to tail-tip) and of approximate wing-span are included in the detailed descriptions. These give an indication of relative sizes, but judging size in the field can be difficult.

Several points need to be borne in mind when attempting to estimate the size of a stint. These are size-illusion (Grant 1983), in which farther birds may appear proportionately larger than they really are in comparison with nearer ones when viewed through binoculars or telescope; the problems of judging size in itself (Grant 1980, 1983); individual variation in size (female stints average larger than males; according to measurements in table 1, the



Fig. 3. Juvenile Little Stint *Calidris minuta* showing how shape and apparent proportions can be changed by varying posture. A, plumage sleek (perhaps due to warm temperature or alertness) showing full length of thigh and tibia, legs relatively unflexed (perhaps due to lightness of wind), and neck extended, together giving attenuated, small-bodied and long-legged outline. B, same individual with plumage expanded or 'fluffed-up' (perhaps due to cold temperature) concealing thigh and most of tibia, legs flexed and neck hunched (perhaps to counteract strong wind), together giving crouched posture and large-bodied, short-legged outline (*Lars Jonsson*).

longest female Little Stint wing length is 104 mm, nearly 12% longer than the 93 mm of the shortest male); and the fact that a stint can expand or fluff-up its plumage and look larger and bulkier (see also 'Structure' and fig. 3). The difficulties are such that specific size differences are not reliably discernible on a lone stint, and careful side-by-side comparison with other stints or small waders is necessary before any significant size-judgments may be possible.

### Structure, behaviour and feeding action

Differences in structure—bill length, bill shape, middle-toe length, hind-toe length, length of 'primary projection' beyond the longest tertial (including the number of primary-tips involved and their spacing, but beware of individuals with moulted, growing or worn longest tertial or outer primaries), and presence or absence of foot webbing—can be important identification features. Size, leg length and head- and body-shape can also be useful, but it is important to note that these may appear to alter significantly through varying posture, as illustrated and described in fig. 3.

Bill length is best assessed by comparing its length (measured from the tip of the bill to the feathering on the culmen) with the 'loral distance' (which is the distance, across the lores, from the feathering on the culmen to the front edge of the eye). Comparison of bill length with total head length is less satisfactory because posture can alter head length, whereas the loral distance is constant. Accurate assessment of bill length/loral distance is difficult in the field, however, so sharp photographs (which obviously must be in full profile to avoid the effects of foreshortening) are the best source. Bill length of females averages longer than that of males (see table 1).

The degree of bill-tip expansion (the lateral broadening at the tip) may be important, and can be assessed when the bill is viewed head-on with the bill held slightly downwards (e.g. as in plates 119a-f). Bill-tip expansion has nothing to do with the degree of bluntness of the bill tip when viewed in

Table 1. Measurements (in mm) of stints *Calidris* (from 'BWP')Little Stint *C. minuta*

Difference between sexes significant for wing, tail, and bill

	MALES			FEMALES		
	Mean	SD	Sample size	Mean	SD	Sample size
Wing ad	96.4	1.90	16	93.100	99.5	2.70
Wing juv	96.3	1.64	10	94.98	100.2	2.15
Tail ad	39.2	1.38	17	37.42	40.5	1.62
Tail juv	18.1	0.82	17	16.7-19.2	18.5	0.66
Bill	21.2	0.90	17	19.8-23.2	21.7	0.88
Tarsus	18.7	0.98	15	17.5-20.8	19.1	0.64
Toe						

Red-necked Stint *C. ruficollis*

Sex differences significant for wing and bill. Juvenile wing significantly shorter than adult; difference in other measurements not significant

	MALES			FEMALES		
	Mean	SD	Sample size	Mean	SD	Sample size
Wing ad	103.5	2.36	37	98-107	106.2	2.09
Wing juv	101.1	3.07	27	94-107	102.6	3.00
Tail ad	42.7	1.87	17	38-46	43.8	2.25
Tail juv	42.7	2.18	16	39-46	42.5	1.92
Bill	17.5	0.68	20	16.1-18.9	18.7	0.89
Tarsus	19.7	0.64	20	17.9-20.8	19.9	0.58
Toe	18.3	0.55	19	17.3-19.3	18.5	0.73

Semipalmated Sandpiper *C. pusilla*

Sex differences significant, except tail. Juvenile wing (♀) and tail (both sexes) significantly shorter than adult, but not wing, juvenile bill, tarsus, and toe similar to adult, combined

	MALES			FEMALES		
	Mean	SD	Sample size	Mean	SD	Sample size
Wing ad	95.9	1.48	13	94-98	100.1	1.31
Wing juv	96.1	2.09	17	93-100	98.3	1.71
Tail ad	39.3	2.02	16	37-43	40.6	2.46
Tail juv	36.6	1.65	10	35-39	37.2	1.19
Bill	18.6	1.17	29	16.6-20.2	20.2	1.25
Tarsus	21.3	0.70	29	19.8-22.8	22.1	0.58
Toe	18.5	0.59	23	17.0-19.5	18.9	0.64

Slight geographical variation in wing and bill length: breeding adults from (1) Alaska, (2) central Canada (Banks Island, Mackenzie and Kewatin Districts), and (3) eastern Canada (Baffin Island and eastern Hudson Bay area):

	MALES			FEMALES		
	Mean	SD	Sample size	Mean	SD	Sample size
Wing ad	93.2	1.93	23	96.3	1.80	9
Wing juv	95.1	1.68	21	97.1	4.20	9
Tail ad	34	2.23	34	98.9	2.09	15
Tail juv						
Bill						
Tarsus						
Toe						

'Wing' is maximum length (flattened and straightened) from carpal joint to tip of longest primary feather when between bases of central pair of feathers to tip of longest feather when tail closed; 'bill' is length from feathering on culmen to tip; 'tarsus' is length from middle point of joint between tarsus and tarsus to tip of claw. SD = standard deviation. Range = shortest-longest in sample.

Western Sandpiper *C. mauri*

Sex differences significant, except for tail. Juvenile wing averages 1.1 shorter than adult, juvenile tail 4.4 shorter; bill, tarsus, and toe similar to adult from about October

	MALES			FEMALES		
	Mean	SD	Sample size	Mean	SD	Sample size
Wing ad	97.1	2.38	9	94-101	101	1.38
Tail ad	41.8	1.65	10	39-45	42.2	1.87
Tail juv	23.1	1.00	14	21.7-25.3	26.7	0.67
Bill	21.8	0.68	15	20.8-23.0	23.4	0.71
Tarsus	13.1	0.84	12	16.8-19.5	19.4	0.90
Toe						

Least Sandpiper *C. minutilla*

Sex differences significant for bill, tarsus, and toe. Bill best character for sexing, as only 3 out of 23 ♂ had bill over 18.9 and 4 out of 21 ♀ below this. Juvenile tail significantly shorter than adult; other juvenile measurements similar

	MALES			FEMALES		
	Mean	SD	Sample size	Mean	SD	Sample size
Wing ad	89.8	2.10	11	86-93	91.6	2.52
Wing juv	89.8	2.18	25	86-94	90.6	1.71
Tail ad	37.9	1.93	12	36-40	37.4	1.68
Tail juv	35.4	1.36	9	33-37	35.5	1.58
Bill	18.2	0.91	23	16.7-19.2	19.5	0.84
Tarsus	18.6	0.73	23	16.7-19.5	19.1	0.46
Toe	18.7	0.62	21	17.5-19.7	19.6	0.83

Long-toed Stint *C. subminuta*

Sex differences significant for bill only. Juvenile wing not significantly shorter than adult, juvenile tail on average 1.6 shorter; juvenile bill, tarsus, and toe similar to adult from September onwards

	MALES			FEMALES		
	Mean	SD	Sample size	Mean	SD	Sample size
Wing ad	93.1	1.78	16	88-95	95.0	2.08
Wing juv	93.0	1.86	18	89-97	93.7	2.11
Tail ad	37.4	1.37	22	35-40	38.5	1.52
Tail juv	17.8	0.73	35	16.2-19.2	18.8	0.78
Bill	21.8	0.89	31	19.4-23.4	22.0	0.96
Tarsus	23.2	0.88	31	21.0-24.9	23.3	1.13
Toe						

Ternmink's Stint *C. ternminkii*

Sex difference significant for tarsus

	MALES			FEMALES		
	Mean	SD	Sample size	Mean	SD	Sample size
Wing ad	98.2	2.27	21	95-103	99.3	2.13
Tail ad	46.2	1.97	16	42-49	47.1	1.88
Bill	16.9	0.49	24	15.8-17.6	17.2	0.74
Tarsus	17.6	0.44	17	16.8-18.2	17.9	0.47
Toe	18.2	0.59	16	17.4-19.1	18.1	0.54

'Wing' is maximum length (flattened and straightened) from carpal joint to tip of longest primary feather when between bases of central pair of feathers to tip of longest feather when tail closed; 'bill' is length from feathering on culmen to tip; 'tarsus' is length from middle point of joint between tarsus and tarsus to tip of claw; 'toe' is length of middle toe from joint with



profile, which can be equally important. Close views are essential to determine the precise structure of a stint's bill, because features such as bill-tip expansion or the bluntness of the bill tip in profile are often not reliably discernible at long range.

Apparently consistent behavioural and feeding-action traits are mentioned in the detailed descriptions, but note that feeding action in particular is prone to vary individually, depending on such external factors as type of terrain (e.g. dry ground, soft mud, water), position of prey (on or below mud surface), and wind speed (affecting the more- or less-hunched attitude of a feeding stint, fig. 3). The possible variations render feeding action of only slight identification value without back-up from more tangible differences of plumage, structure and voice.

Structural and behavioural differences undoubtedly combine to give some species a distinctive 'jizz', which can be learned with experience. Assessment of these on a lone individual of an unfamiliar species, however, requires caution and very careful observation. For European observers, total familiarity with the structure, behaviour and plumages of Little Stint is an essential base for assessing the possibility of a rare stint.

### Voice

Transcriptions of calls are notoriously variable, and this is especially true for stints. It is possible that different ears are more attuned to either the low- or high-pitched elements of the same call, leading to different transcriptions from different observers. Also, coarser elements of the same call seem more obvious at close range than at a distance, and careful listening to stints can produce a confusing array of variations. Nonetheless, carefully noted call transcriptions can help identification. All species utter a variety of short notes or 'chatter' when feeding or in short flights: in this paper, however, an attempt has been made to isolate the most distinctive full-flight calls. A wider range of calls can be found, especially in Wallace (1974) and *BWP*.

### Photographs

Whenever possible (with due regard for bird, habitat and other observers, and after thorough field notes have been taken), every attempt should be made to obtain good photographs when a rare stint is suspected. Their value cannot be overestimated, not only as confirmation of identification, but also as research material. Many recent advances in stint identification have come from prolonged study of photographs. Good photographs of any stints would be welcomed by the author for further studies.

Assessment of photographs requires special considerations which take into account such factors as sharpness of focus, foreshortening (which can affect features such as apparent bill length), and illusory photographic effects. Changing light conditions and different angles at which the bird is photographed can also cause apparent changes in the patterns of individual feathers and in the strength of colour tones. Different makes of film or copying can enhance or diminish colour tones. These problems become apparent with experience, when studying a lot of photographic series of particular individuals. In the absence of such experience, it is sufficient just

to be aware that these possibly misleading effects can occur, and that the most reliable material is a long series of photographs, taken at close range, in diffuse light rather than bright, direct sun.

### Trapping

Examination of a large number of museum specimens may be essential in difficult cases, and, wherever possible, any unusual stint should be trapped and photographed in the hand. Full biometrics should be taken, using the precise methods described in table 1. Prater *et al.* (1977) is a useful further reference. Additional criteria for distinguishing juvenile and other Little and Red-necked Stints are described in an appendix (p. 307).

### Caution

Stint identification is still evolving, and it should be borne in mind that some characters described here are valid only for typical or average individuals, or are of a tentative nature. Safe identification will, therefore, always be based on careful assessment of the fullest possible range of plumage, structural and voice distinctions. This is important not only to avoid misidentification, but also because acceptance of good records will be eased if notes contain relevant discussion of such factors. Prolonged study at close range is more likely to succeed than brief views or prolonged, distant ones. While identification of a rare stint is possible in most cases, and some will be easy, it probably has to be accepted that some individuals will always evade certain identification.

### Detailed descriptions

Six species are described in two separate groups of similar species (Group One: Little/Red-necked/Semipalmated/Western; and Group Two: Least/Long-toed), with the distinctive seventh species—Temminck's Stint—treated separately.

It is unlikely that there will be lasting confusion between species from the different groups: the main differences are evident in the plates and are described in the group introductions. Italics indicate those marks which in combination provide the most useful identification features.

#### Group One: Little and Red-necked Stints, Semipalmated and Western Sandpipers

In all plumages, this group is distinguished from other stints at least by a combination of black legs (which, however, at close range when viewed against a dark background can show a slight grey, greenish or brownish tone, or can look pale when coated with mud); and comparatively stout, thick-based bill. Semipalmated and Western Sandpipers are the only stints with webbed toes, more extensive between the outer and middle toes than between the middle and inner (fig. 4). This feature is readily observable if the terrain is not too wet or muddy.

#### Little Stint *C. minuta*

**ALL PLUMAGES** (length 12–14 cm; wing-span 34–37 cm) Bill length about twice loreal distance; bill has fine tip and very slightly decurved lower mandible; bill-tip expansion very slight or lacking. Small-headed (with slightly back-sloping forehead) and rather round-bodied. Toes unwebbed. Primary projection typically long, involving three or four primary tips and two wide spaces.

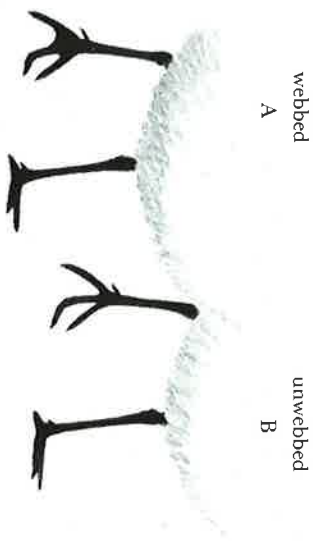


Fig. 4. Head-on views of legs and feet of stints *Calidris*, showing A: foot-webbing on Semipalmated *C. pusilla* or Western Sandpipers *C. mauri* (note greater extent of webbing between outer and middle toes than between middle and inner), compared with B: unwebbed toes of other stints (*Lars Jonsson*)

Feeding actions typically quick and active, but slower, more methodical surface picking not unusual. Voice: sharp, rather high-pitched and incisive 'sti', uttered singly or repeated.

JUVENILE (plates 113a, b, c & 119d) Head: white supercilium and well-marked fine, whitish lateral crown-strips usually give prominent split-supercilium effect and accentuate dark 'ridge' in centre of crown (plate 119d); contrasting pale grey hindneck. Upperparts: white mantle V obvious; white scapular V usually obvious; blackish-centred mantle feathers and upper scapulars otherwise fringed rufous; lower scapulars sharply fringed and solidly blackish-centred at tips (plate 120); inner greater coverts and tertials rather solidly blackish-centred, with sharply defined pale (usually strongly rufous) fringes; median coverts and lower lesser coverts dark-centred with rufous fringes; thus, general pattern and coloration of innerwing-coverts matching that of scapulars and mantle; upper lesser coverts rather uniformly dark, forming blackish area at 'shoulder'. Underparts: breast-side streaking confined to a few (typically three to six) rather clear-out dark lines overlying orange-rufous wash which sometimes extends faintly across upper breast; at distance, gives effect of isolated dark-streaked patch on breast-sides, shown in fig. 3.

WINTER (plate 115a & b) Upperparts usually slightly darker than others in Group One, though on average more extensive dark feather centres, which also give less uniform effect, but much variation and probably of no value on lone individual. Some have grey wash, sometimes finely streaked, forming a complete breast-band apparently not shown by others in this group (but compare Western).

ADULT SUMMER (plate 117a, b & c) Significantly similar only to Red-necked. Orange to orange-rufous coloration on head, breast and upperparts of variable extent and strength, but this orange not extending to throat; and completely pervaded by dark speckles and streaks on ear-coverts, side of neck and breast (but at distance these areas can appear uniform); split-supercilium effect usually obvious; innerwing-coverts and tertials mainly or wholly summer-patterned, matching general pattern and coloration of rest of upperparts, not contrastingly plain; prominent yellowish or cream mantle V.

#### Red-necked Stint *C. nyfcolis*

ALL PLUMAGES (length 13-16 cm; wing-span 35-38 cm) Bill length short ( $1\frac{1}{2}$ -2 times loreal distance), bill straight, with bluntness of tip typically between Little and Semipalmated, often with vertical expansion at tip giving slight blob-ended effect in profile; bill-tip expansion slight or lacking. General shape round-headed (with steep, rounded forehead) and bulky-bodied with long body-line and attenuated rear-end, mainly an effect of comparatively short legs and long wings and tail. Toes unwebbed. Primary projection much as Little. Feeding action much as Little. Voice: much as Little, but apparently consistently coarser, thus 'chit'; also sharp squeak, 'week'.

JUVENILE (plates 114a, b & 119c) Head: supercilium dull, not strikingly white; crown uniformly streaked and greyish, crown typically lacking strong split-supercilium or 'ridge' effect (plate 119c); lores blackish (whole head pattern, therefore, inclined to be rather plain, with blackish lore and white forehead-sides sometimes standing out as the most prominent features). Upperparts: mantle V and scapular V both faint or lacking; blackish-centred, rufous-fringed mantle

feathers and upper scapulars; lower scapulars extensively greyish, typically with narrow drop-shaped dark centres (plate 120); innerwing-coverts rather pale grey and colourless, with dark shaft streaks of variable extent and very pale rufous or whitish fringes; thus, general coloration and pattern of innerwing-coverts and lower scapulars rather plain and grey, contrasting with blackish-centred, rufous-fringed upper scapulars and mantle feathers; tertials with rather pale greyish centres, blackish shaft streaks and whitish fringes (any rufous tones on fringes confined to near tip). Underparts: breast-side streaking extensive, faint and usually diffuse, overlying often decidedly pinkish-grey wash, which sometimes extends across whole breast.

WINTER (plate 116a & b) Lore dark, in photographs often appearing to extend through eye as contrasting dark patch; and scapulars averaging less extensively dark-centred than Little Stint. Plumage, structural and voice differences from Little so slight, however, that certain separation of lone vagrant probably impossible. Distinguishable from Semipalmated and Western by lack of foot-webbing and the latter's usually obvious bill-shape differences.

ADULT SUMMER (plate 117d & e) Significantly similar only to Little. Coloration on head, breast and upperparts rich rufous chestnut or brick red, of highly variable extent. On classic individuals, rufous extensive, including throat as well as ear-coverts, side of neck and upper breast, the rufous uniform and not pervaded by dark streaking; chin and forehead often white, giving white 'face'; streaking (in form of distinctive dark arrowheads) restricted to often complete necklace of streaks (enriching lower breast and on foreflanks) below rufous, overlying basically whitish coloration of lower breast. On others, rufous much less extensive (e.g. restricted only to ear-coverts and narrow band above necklace of streaks). Split-supercilium effect faint or lacking; innerwing-coverts and tertials (and often some lower scapulars) mainly or wholly winter-patterned, rather plain greyish or brownish, contrasting with summer-patterned scapulars and mantle, yellowish or orange mantle V faint or lacking. The pitfall of adult summer Sanderling *C. alba*, which has similar plumage patterns, should be noted.

#### Semipalmated Sandpiper *C. pusilla*

ALL PLUMAGES (length 13-15 cm; wing-span 35-38 cm) Bill typically short ( $1\frac{1}{2}$ -2 times loreal distance), straight, deep-based and obviously blunt-tipped in profile, with often marked bill-tip expansion (but slight or lacking on some); on classic individuals, deep-based, blunt-tipped bill usually striking, but some (apparently especially from longer-billed east Canadian populations) overlap in bill length with Little and slightly with short-billed individuals of the usually much-longer-billed Western. Toes webbed. Primary projection typically short, involving two or three closely spaced primary tips. General shape much as Little. Feeding action is said to be consistently more hesitant and plover-like (Oddie & Marr 1981), but it can also be fast and active, like Little Stint. Voice: noticeably, low-pitched and coarse; short, flat-toned, husky 'thrup' or 'trp'; or harsh 'kreet'.

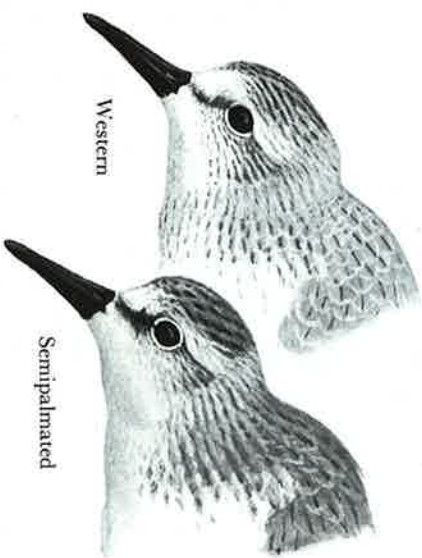


Fig. 5. Typical winter Semipalmated *Calidris pusilla* and Western Sandpipers *C. mauri* showing differences in head- and breast-patterns described in text. Head shows similar differences in pattern in juvenile plumage (*Lars Jonsson*)



specimens all 4.0-4.5 mm) whereas hind toe of Long-toed is rather long (ten specimens all 5.5-7.0 mm). Toes of Long-toed project farther beyond tail tip in flight than those of Least. Base of lower mandible dark on Least, but obviously pale on Long-toed (and, sometimes, whole of Long-toed's bill-base is pale). Like most other stints, Least has white-based primary shafts and obvious narrow outerwing-bar, whereas Long-toed (like Temminck's) has brownish primary shafts except for whitish outermost, and thus Long-toed lacks obvious outerwing-bar. Voice: Least has shrill, very high-pitched, rising 'irreee', and lower-pitched, vibrant 'prrrr'. Some calls of Long-toed apparently very close to Least, but main calls apparently lower (e.g. soft, liquid 'chree' or 'chuiip', latter almost disyllabic), recalling Curlew Sandpiper *C. ferrugineus*.

JUVENILE (Least: plates 113c & f; Long-toed: plates 113d, 115d & 119f) Head: pattern of Least generally plainer, less contrasting than Long-toed; supercilia of Least duller, especially behind eye, joining finely across forehead, whereas supercilium of Long-toed whiter, starting short of forehead and well-marked at rear, merging into greyish nape, accentuating capped effect; on Least, eye separated from dark patch on rear ear-coverts by faint paler area, whereas, on Long-toed, ear-coverts more solidly dark, giving subtle masked effect and further accentuating strength of supercilium; rufous or whitish lateral crown-stripes on Long-toed give sometimes-striking split-supercilium effect; split supercilium faint or lacking on Least (head pattern differences illustrated in fig. 7 and plate 119e & f). Upperparts: general pattern and coloration of upperparts rather similar on both species and darker than other stints. On



Fig. 7. Typical juvenile Long-toed Stint *Calidris subminuta* and Least Sandpiper *C. minutilla* showing difference in head pattern described in text. Head shows similar differences in pattern in winter plumage (Lars Jonsson)

average, Long-toed has richer-rufous feather-fringes; more obvious mantle 'V'; and longer and broader lower scapular feathers (plate 120). Long-toed has obvious whitish tips and fringes on innerwing-coverts, whereas innerwing-coverts of Least usually rufous-fringed and more uniform. Underparts: breast-streaking (over buff wash) averages more complete on Least, often forming breastband, whereas breast-centre often paler or unstreaked on Long-toed. General plumage patterns of Least may recall Pectoral Sandpiper *C. melanotos*, whereas those of Long-toed (especially the head pattern) may recall Sharp-tailed Sandpiper *C. acuminata*.

WINTER (Least: plate 113e & f; Long-toed: plate 115c) Both species generally much browner than Group One stints. Head pattern differences much as for juveniles, but less well-marked. Scapulars and innerwing-coverts of Least have diffuse dark centres and pale fringes, giving strong scaly pattern at long range; Long-toed has distinctive blackish feather-centres and broad, clear-cut grey-brown fringes to scapulars and innerwing-coverts, giving strongly contrasting pattern which may be less evident in worn plumage.

ADULT SUMMER (Least: plate 118c & d; Long-toed: plate 118e) Differences between typical Least and Long-toed illustrated, but some Least can match Long-toed in amount of rufous coloration, in which case best distinctions are Long-toed's broader and more rufous fringes on tertials and some innerwing-coverts, and Long-toed's head pattern and breast-streaking differences (much as described for juveniles).

### *Temminck's Stint*

#### *Temminck's Stint C. temminckii*

ALL PLUMAGES (length 13-15 cm; wing-span 34-37 cm) Bill shape much as Least or Long-toed; typical shape is long-bodied and short-legged, with long tail often extending beyond wing-tip (typical shape illustrated in plate 118f). Temminck's treated separately because of distinctive combination of general structure, pale legs (e.g. yellowish-green, dull yellow or pale greyish-

green); three outermost tail feathers white showing no contrast with white rump-sides, and giving prominent white area in flight not shared by any other stint and obvious especially when tail spread on landing (note, however, that other stints' tail-sides can look white in bright light); rather plain brownish or not-strongly-patterned head and upperparts; uniform or very diffusely streaked breast or breast-sides; last two features give appearance recalling miniature Common Sandpiper (*Actitis hypoleucos*); typically crouching, hunched, rather furtive and slow feeding action; preference for vegetated, rather than open, mud (but last two features not invariable, and other stints may have similar feeding action and choose similar habitat on occasions); and habit of flying off high on erratic flight-course when flushed, calling continuously (behaviour sometimes shared by Least and Long-toed). Supercilium faint or confined to in front of eye, giving plain-headed look compared with other stints, especially in juvenile and winter plumages; shows thin, pale eye-ring. Voice: distinctive, thin, high-pitched, trilling 'irrrr', this call usually much-repeated in erratic series (e.g. 'ir-irrrr-ir-irrrr').

JUVENILE (plate 113f) Upperparts basically grey- or greenish-brown. Innerwing-coverts and especially scapulars (plate 120) neatly pale-fringed with thin dark subterminal crescents (on some dark individuals, discernible only at close range), pattern not shared by other stints.

WINTER (plate 113g) Plain grey-brown above; usually faint supercilium; and uniform breast-sides are best distinctions from other stints.

ADULT SUMMER (plate 118f & g) Adult summer upperparts plumage is mixture of new summer-patterned feathers (blackish-centred with greyish or rufous fringes) and new, plain greyish winter-patterned ones, giving variegated or patchy appearance. A few individuals, however, may acquire full, summer-patterned upperparts. Fresh plumage (e.g. in May, plate 118g) rapidly loses greyish feather-fringes, revealing more rufous, but often becomes highly worn by late summer (e.g. plate 118h).

### Appendix 1. Six in-the-hand criteria for separating juvenile Little Red-necked Stints *C. ruficollis*

The last feature applies to all ages

Feature	Little	Red-necked
Colour fringes of rump feathers	If present at all, rufous, sometimes brown	If present at all, cold grey-brown, never rufous
Pale fringe at tips of longest (central) pair of uppertail-coverts	Rufous, usually prominent	Typically lacks pale fringe. If present at all, cold grey-brown, never rufous
Pale fringe of central pair of tail feathers	Obvious pale or rufous fringe on both webs at tips of feathers. Dark feather-centre breaks fringe at tip, typically as sharp point	Pale fringe, if present at all, thin and confined usually to outer web only. Dark feather-centre rounded at tip
Pattern and colour of rearmost pair of mantle feathers	Complete whitish fringe on outer web	Whitish fringe on outer web confined to tip
Pattern of tiny outermost primary	White feather-fringe of even width on both webs. Dark feather-centre sharply pointed at tip	White feather-fringes wider on outer web than on inner web, thus abutting shaft at different points, and dark feather-centre 'stepped' (not coming to even, sharp point as on Little)
Wing-length divided by tarsus length (precise methods of taking measurements are described in table 1)	Less than 5.0	More than 5.2. This reflects Red-necked's proportionately longer wings and shorter tarsus. (Note small overlap zone between 5.0 and 5.2)

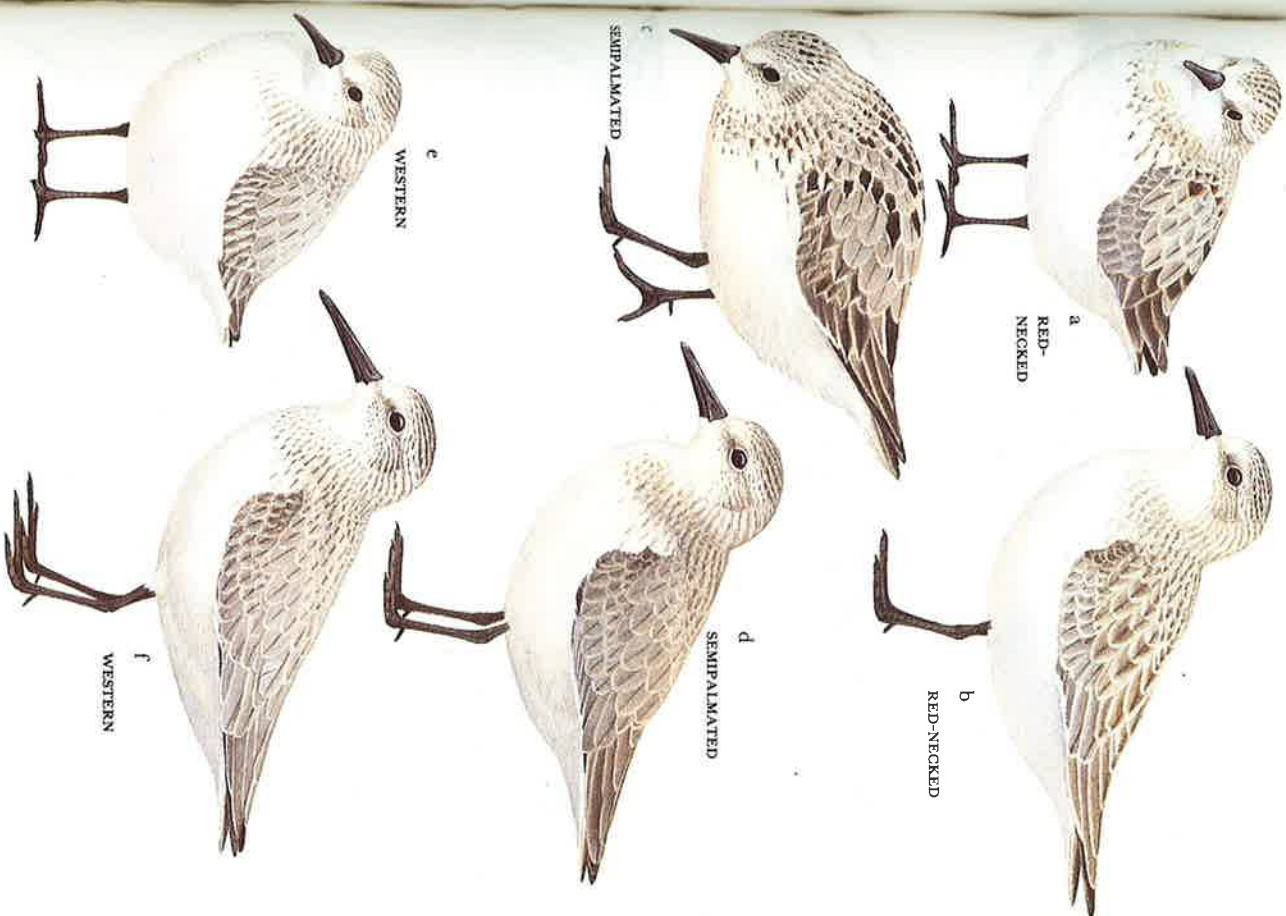


113. Stints *Calidris* in juvenile plumage (*Lars Jonsson*)114. Stints *Calidris* in juvenile plumage; one (c) in worn juvenile plumage, and one (g) starting moult to first-winter plumage (note grey, first-winter upper scapulars) (*Lars Jonsson*)





115. Stints *Calidris* in first-winter plumage (a); fresh adult-winter plumage (b, c, e & g); worn adult-winter plumage (f); and worn juvenile plumage (d) (*Lars Jonsson*)



116. Stints *Calidris* in fresh adult-winter plumage; two (a & c) near end of moult from summer plumage (*Lars Jonsson*)







119. Heads of juvenile stints *Calidris* showing typical patterns and bill structure when viewed head-on (Lars Jonsson)



120. Feathers from rear of upper row of lower scapulars of juvenile stints *Calidris*, showing typical patterns described in text (Lars Jonsson)

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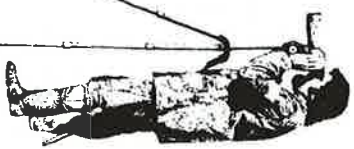
P. J. Grant, 14 Heathfield Road, Asford, Kent TN24 8QD

## Notes

**Black-necked Grebe jump-diving** Without being claimed as an absolutely diagnostic identification feature, it is generally assumed in the literature that the Black-necked Grebe *Podiceps nigricollis* does not usually leap out of the water when diving. *BWP* states, for example, 'feeds by diving usually without initial jump'.

On 24th, 25th and 26th September 1983, I regularly watched a Black-necked Grebe jump-diving in front of my house overlooking the sea at Bamburgh, Northumberland. I watched it in fairly rough, fairly calm and very calm seas, at different times of day. For every one of the 80-or-so dives that I saw it perform, it leapt right out of the water like a Shag *Phalacrocorax aristotelis*.

D. GRAHAM BELL  
 Farne View, The Wynding, Bamburgh, Northumberland NE69 7DD



**Little Egrets with uncommon bare-parts coloration** According to *BWP* and Hancock & Elliott (1978, *The Herons of the World*), Little Egrets *Egretta garzetta* have a black bill (brown on juveniles), and black legs with toes varying from grey-green (juveniles) to greenish-yellow and becoming orange-yellow on adults during the breeding season. In fact, juveniles more often have dark brown legs, and not rarely bright apple-green ('Granny Smith') feet (personal observations). C. Voisin, who studied the species in the Camargue, stated that, outside the breeding season, the black bill of the