

SHOREBIRD IDENTIFICATION

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The superfamily of shorebirds is a heterogeneous group. Although most members of this group are readily recognized as shorebirds, there are few distinctive characters that are possessed by all species. For example, nearly all shorebirds have long pointed wings, but the woodcocks and lapwing have decidedly rounded wings. Most shorebirds have slender, soft bills, but the oystercatchers have heavy bills that are greatly compressed laterally. The phalarope family has lobed toes, each species with its own particular type of lobe. The turnstones and most plovers have 3 toes, and most sandpipers have 4 toes, but one genus in each family does not conform to the general rule.

The oystercatchers, avocets and stilts are so distinctive in all plumages that they will not be discussed in detail; they are, however, included in the synopsis of family characters.

Although lobed toes are diagnostic of phalaropes, this character could be overlooked in the hand if one is not watching for it. Consequently, all three phalaropes are included with the sandpipers in the measurement charts and in the Species Summary.

CHARACTERISTICS OF SUPERFAMILY AND OF FAMILIES OF SHOREBIRDS

Order Charadriiformes: Shorebirds, Gulls and Terns, Auks, etc.

Superfamily Charadrioidae: Shorebirds. Bill usually slim and soft. Tail short. Wings long with 10 well-developed primaries and a rudimentary 11th. Legs generally long. Toes slim, unwebbed or partially webbed or lobed, relatively shorter than in herons and rails. Hind toe, when present, short and elevated (attached above the level of the 3 front ones).

Family Haematopodidae: Oystercatchers (6 species in the world, 3 in North America). Bill bright red, compressed laterally, 3 toes.

Family Charadriidae: Plovers, Turnstones, Surf-birds (63 species, 16 in North America). Bill comparatively short and thick; under 30 mm except in Black-belly. Back unmarked in all small species (genus Charadrius). Neck short. Plovers have 3 toes (4th present, but rudimentary, in Black-bellied Plover).

Family Scolopacidae: Woodcock, Snipe, Sandpipers (82 species, 45 in North America). Bill slender, comparatively long,

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usually over 20 mm except in Least, Semipalmated and Buff-breasted. Neck medium to long. 4 toes (except 3 in Sanderling). Back speckled or streaked in small species (indistinct markings on Spotted Sandpiper, and on Sanderling in winter).

Family Recurvirostridae: Avocets, Stilts (7 species, 2 in North America). Bill long, very slender; legs very long and slender, tarsus over 80 mm. 3 toes (stilt) or 4 (avocet).

Family Phalaropodidae: Phalaropes (3 species, 3 in North America). 4 toes, the front ones lobed, semipalmate. Female brighter colored than male.

Identifying Shorebirds to Species

The purpose of this paper is to assist banders in identifying, to species, shorebirds that are in the hand. These pages are not a substitute for a field guide or for manuals such as Roberts, Forbush, Ridgway, or Coues. They are intended, rather, as a rapid means of confirming identification and of indicating which species might be confused with the one at hand.

Included are all plovers, sandpipers and phalaropes that occur regularly in any part of the United States (except western Alaska) and southern Canada. Banders who contemplate extensive shorebird netting or trapping along the coast are urged to carry a copy of a European field guide or the shorebird volume (No. IV) of Witherby (1940) and to study carefully any bird whose measurements or plumage characters do not conform closely to those of familiar species. Although it is not the intent of this paper to point out subspecific differences, banders should be aware of the fact that some Old World strays can be detected (though not positively identified) by watching for measurements outside the normal range for New World races. For example, two Old World races of the Dunlin that breed in Greenland have been collected in Massachusetts; so any Dunlin with a culmen measurement below 30 mm or a wing measurement below 107 mm should be examined critically.

Many shorebirds have distinctive shades of gray, brown or rufous or distinctive feather patterns that enable the experienced bander to identify them at a glance. The beginner, however, is confused because the color of breeding and winter plumages is so different and because many of the shorebirds he handles are either in partial molt or have such worn plumage that the pattern formed by light feather edgings is not "typical" or is lacking altogether. Consequently, principal emphasis is given here to two measurements, which every bander is urged to make: (1) Exposed culmen, which is the straight line distance from end of feathering on top of midline of upper mandible to tip of upper mandible; and (2) Wing chord, which is the straight line

distance of the relaxed, unflattened wing, from the "shoulder" to the tip of the longest feather.

The four pages of charts (Figures 1-4) show the range of culmen and wing measurements in the specimens examined. Sample sizes range from 20 to 50 per species except as indicated by asterisks. After checking measurements with those in the charts (which, barring misfortunes in reproduction, should be to scale), check the Species Summary to eliminate other species whose culmen and wing measurements match your bird. Then check pictures and detailed descriptions in your standard reference texts.

Some banders may prefer to start with the pictures in a field guide and check measurements only as a final resort. This procedure is quite satisfactory for banders experienced in identifying shorebirds. Inexperienced banders or persons who handle only an occasional shorebird are the ones most apt to make mistakes in identification if they fail to check measurements.

SPECIES SUMMARY

Species are listed in the same order as on the charts, starting with the plovers and then treating the sandpipers in approximate order of decreasing size. Similar species are grouped together as much as it possible without departing too far from the general sequence by size.

Plovers and Turnstones (Figure 1)

BLACK-BELLIED PLOVER: Told from Golden Plover and Upland Plover by white rump; from Surfbird by lack of broad dark terminal tail band.

AM. GOLDEN PLOVER: Told from Upland Plover and Surfbird by absence of hind toe; from turnstones by long black tarsus (over 35 mm, not under 30), from Killdeer by absence of clear cut double breast band.

MOUNTAIN PLOVER: Told from turnstones and Killdeer by absence of dark breast markings.

SURFBIRD: Told from Killdeer and Golden Plover by presence of 4th toe; from Black-bellied Plover and Upland Plover by solid black terminal band on tail.

RUDDY TURNSTONE: Told by white throat, white rump and bold white wing stripe.

BLACK TURNSTONE: Told from overlapping species by solid gray-brown head and breast, devoid of streaking. No white on

head, throat, or breast.

KILLDEER: Told by clear cut double breast band.

WILSON'S PLOVER: All overlapping species except Sanderling have 4 toes; told from Sanderling by solid dark breast band.

SEMPALMATED PLOVER: Prominent dark stripe under eye. Wilson's has long bill.

PIPING PLOVER: Told from Semipalmated Plover by absence of stripe under eye.

SNOWY PLOVER: Told from Piping Plover by dark ear patch, solid black bill.

Large Sandpipers (Figure 2)

LONG-BILLED CURLEW: No overlap of culmen and wing measurements with other shorebirds.

MARBLED GODWIT: Told from all other godwits by lack of white rump; from curlews by upcurved bill.

HUDSONIAN GODWIT: Told from Marbled Godwit by white rump and bold white wing stripe; from Black-tailed Godwit by tarsus (under 65 mm, not over 70); from Bar-tailed Godwit by broad black tail band; from curlews by upcurved, not decurved bill.

WHIMBREL: Told from godwits by decurved bill; from Bristle-thigh as below.

BRISTLE-THIGHED CURLEW: Told from godwits by decurved bill; from Whimbrel by cinnamon-buff rump and tail (not grayish brown).

ESKIMO CURLEW: Told from Willets and Greater Yellowlegs by decurved bill; bill does not overlap with other North American curlews and possibly not with Old World curlews, but any bird suspected of being this species should be thoroughly examined, completely measured, photographed, and examined by other people.

WILLET: Eastern and Western races are listed separately on the chart because of the big difference in wing length; but samples from which measurements were taken are too small to justify subspecific identification until more data are available. Told from Common Snipe by long bluish tarsus (over 50 mm, not under 35), and from Eskimo Curlew by straight rather than decurved bill.

GREATER YELLOWLEGS: Told from overlapping species by bright yellow legs.

WANDERING TATTLER: Told by uniform plain gray back, rump and tail.

RUFF: Told from all overlapping species by white oval patches at sides of rump contrasting sharply with dark line down center of rump.

LESSER YELLOWLEGS: Told from Upland Plover, Pectoral, Ruff, and Tattler by white rump; from Knot by long tarsus (over 40 mm).

Medium-sized Sandpipers and Phalaropes (Figure 3)

AM. WOODCOCK: Told from other American Shorebirds by rounded wings. Lapwing is crested and black and white, not brown.

COMMON SNIPE: Told from dowitchers by dark rump; from Woodcock by pointed wings.

LONG-BILLED DOWITCHER: Before trying to separate Long-billed and Short-billed Dowitchers, study Pitelka (1950). The measurements used in the chart are from Pitelka's Table 19 (Long-bills from the Atlantic Coast) and Tables 24-25 (Short-bills from Atlantic and Gulf Coasts). In breeding plumage, Long-bills can be told by the combination of solid salmon belly, heavy barring on sides of breast and belly, and predominately black tail feathers with narrow salmon barring. In typical Short-bills the belly is largely white, the sides of the breast are spotted, the dark bars of the tail feathers are distinctly lighter than the dark on the back feathers, and the light bars on the tail feathers are white and two-thirds (not 1/4) the width of the dark bars. In winter plumage individual variation makes determination of species difficult, especially if the bird is adult; see Pitelka for further details of measurements and plumage characters. Young Long-bills in first winter plumage are plain-backed with wide black tail bands and narrow white ones; young Short-bills have obvious back markings produced by dark and light bars on the longer tertials, and the white tail bars are about two-thirds the width of the dull brownish black ones. Breast of Long-bill tends to be uniform gray, while Short-bill is lightly speckled, generally with buffy background.

SHORT-BILLED DOWITCHER: Told from Common Snipe and Am. Woodcock by white upper rump; very similar to Long-billed Dowitcher (which see).

UPLAND PLOVER: Told from Lesser Yellowlegs, Surfbird, and Black-bellied Plover by dark rump; from Knot by long tarsus (over 40 mm, not below 35); from Ruff by barred tail feathers; from Golden Plover by presence of 4th toe.

KNOT: Told from Upland Plover, Lesser Yellowlegs, and Ruff by short tarsus (under 35 mm, not over 35); from Wandering Tattler by streaked (not uniform gray) crown.

STILT SANDPIPER: Told from all overlapping species by long tarsus (over 35 mm).

PHALAROPES: Lobed feet separate phalaropes from all other shorebirds. Only Wilson's has white rump and unstriped wing. Red has tapered bill, Northern has needle-like bill.

SOLITARY SANDPIPER: No overlapping shorebird has barred tail feathers.

BUFF-BREASTED SANDPIPER: Told from Baird's, White-rump, and Wilson's Plover by yellowish legs.

SPOTTED SANDPIPER: Told from Northern Phalarope, Wilson's Plover, Semipalmated and Western Sandpipers by barred outer tail feathers. Wing does not overlap Solitary.

Peeps (Figure 4)

PECTORAL SANDPIPER: Yellowish or greenish legs and dark rump separate the Pectoral from all except the lobe-footed phalaropes and the Solitary and Sharp-tail. Pectoral is told from Solitary by unbarred tail feathers, from Sharp-tail by heavy (sometimes blurred) breast streakings contrasting with white belly.

SHARP-TAILED SANDPIPER: Similar to Pectoral (which see), but breast uniform buffy instead of prominently streaked; less contrast with belly.

ROCK SANDPIPER: Similar in plumage and measurements to Purple Sandpiper (which see). Rock Sandpiper is restricted to West Coast, Purple to East Coast and Great Lakes. Adults in winter plumage not safely separable. Young, and adult Rock Sandpipers in breeding plumage, can be told from Purples by rusty-tipped scapulars; some Rock Sandpipers have large dark blotches on the breast.

PURPLE SANDPIPER: Told from White-rumped, Stilt, Curlew Sandpipers and Wilson's Phalarope by dark rump; from Dunlin and Sanderling by yellowish (not black) legs; from Pectoral and Sharp-tail by bold white wing stripe; from Solitary by unbarred tail feathers. See Rock Sandpiper.

SANDERLING: Sanderling has 3 toes; all overlapping species except Wilson's Plover, have 4. Plover has solid breast band.

BAIRD'S SANDPIPER: Told from White-rump by dark rump; from Pectoral by black legs; from Sanderling by lack of bold white wing stripe; from phalaropes by absence of lobes on toes; and from Wilson's Plover by 4th toe.

WHITE-RUMPED SANDPIPER: Told by white rump from all overlapping shorebirds except Wilson's Phalarope, which has lobed toes.

CURLEW SANDPIPER: Told by white rump from all overlapping shorebirds except Wilson's Phalarope (which has lobed toes) and Stilt Sandpiper (which has tarsus over 35 mm, rather than under 35).

DUNLIN (Red-backed Sandpiper): Told from Curlew Sandpiper by dark rump; from Pectoral, Purple, and Rock by black legs; from Solitary by unbarred tail feathers, and from Stilt Sandpiper by short tarsus (less than 28 mm, rather than more than 35).

WESTERN SANDPIPER: Measurements overlap only with Semipalmated, Least, and Spotted Sandpipers. Told from all except Semipalmated Sandpiper by black legs. Some individuals difficult to tell from Semipalmated Sandpipers. See bill diagram in Peterson (1958) for extreme examples. Told from Semipalmated Sandpiper (which see) by length and droop of bill and thickness at base, by paler cheek (Bridge, *pers. comm.*), serrated palate (R.E. Stewart, *pers. comm.*), by presence at all seasons of more rusty in scapulars (note, Semipalmated Sandpiper in breeding plumage has some rusty), by call note when released, and possibly by white instead of dusky on basal half of shaft of outer primary feather (Knorr, *pers. comm.*).

SEMPALMATED SANDPIPER: Told from Least by black legs. Very similar to Western Sandpiper (which see).

LEAST SANDPIPER: Measurements overlap only with Semipalmated, Western, and Spotted Sandpipers. Told from first two by greenish (not black) legs and from Spotted by streaked breast.

Ageing and Sexing Shorebirds

Several species of shorebirds can be aged by plumage characters early in the fall migration before the molt is complete. Any bird that retains some of the breeding plumage can be aged as adult. More information is needed on the length of time that remnants of the breeding plumage are retained. More information also is needed on ageing of shorebirds by skull ossification.

Several species of shorebirds, notably the phalaropes and some of the small plovers, can be sexed by plumage characters. Consult your reference books.

A few species, notably the Wilson's Phalarope, Pectoral Sandpiper, and Ruff, can be sexed in all or almost all cases by measurements alone. Several other species have only a partial overlap of measurements, permitting sexing of a good percentage of individuals. Whenever samples of measured birds were large enough, and the difference between males and females great enough, the culmen and/or wing measurements of males and females were listed separately in the chart. When more measurements of birds of known sex are available, it will be possible to sex some individuals of many of the shorebird species.

An additional measurement that is recommended is from the posterior edge of the nostril to the tip of the upper mandible. This measurement can be made more accurately than the measurement of the exposed culmen, and it has the added advantage of being less variable. The nostril measurement was not used in the present summary because of scarcity of published measurements.

Acknowledgments

The measurements were taken from Ridgway (1919), augmented by some from Godfrey (1966), Witherby, *et al* (1940), Manning, *et al* (1956), Pitelka (1950), Mendall and Aldous (1943), Roberts (1932) and unpublished measurements by David Bridge, Vernon Kleen, Betty Knorr and the author. I wish to thank Allen J. Duvall for suggestions for improving the initial draft of the text.

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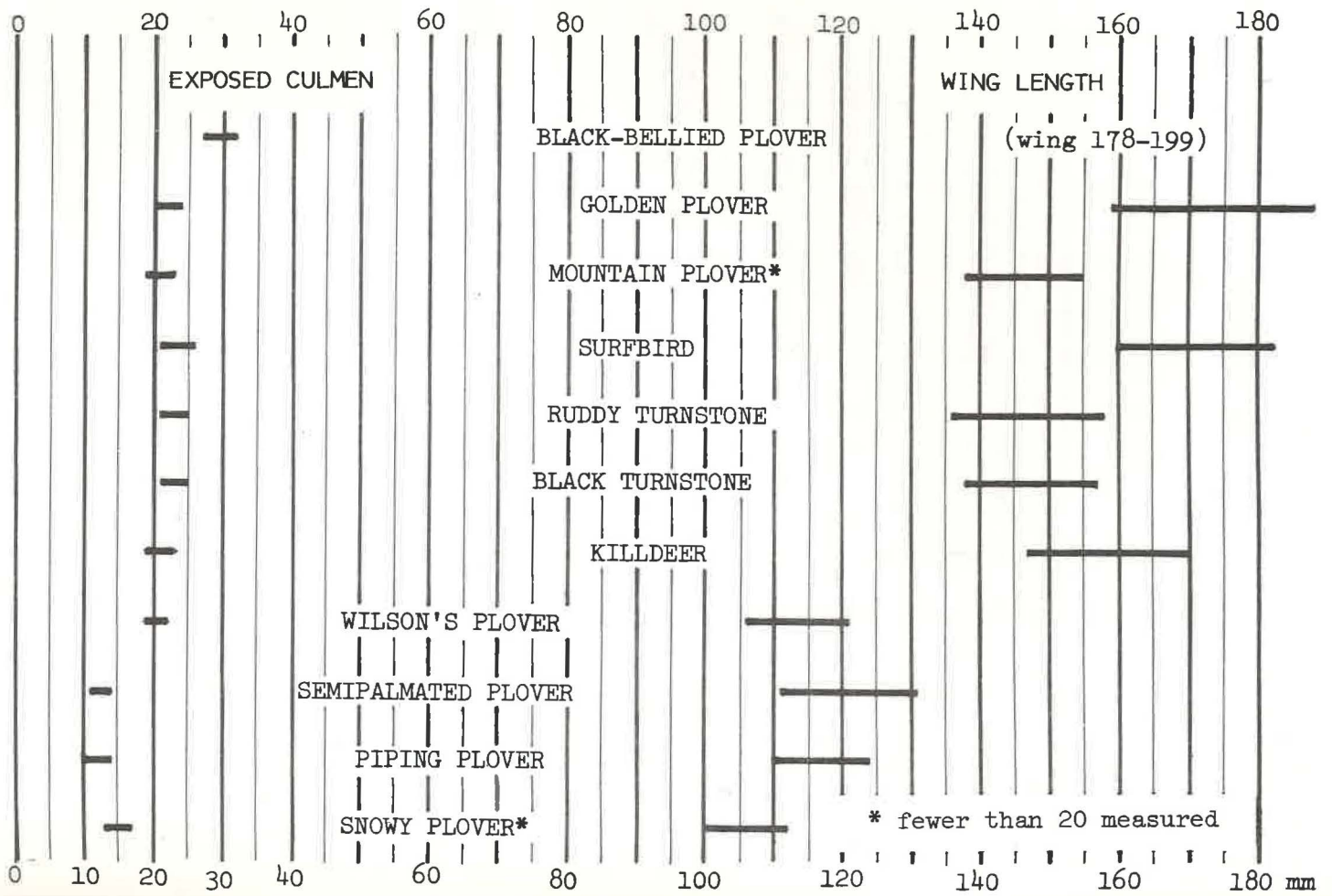


Figure 1. Plovers and Turnstones

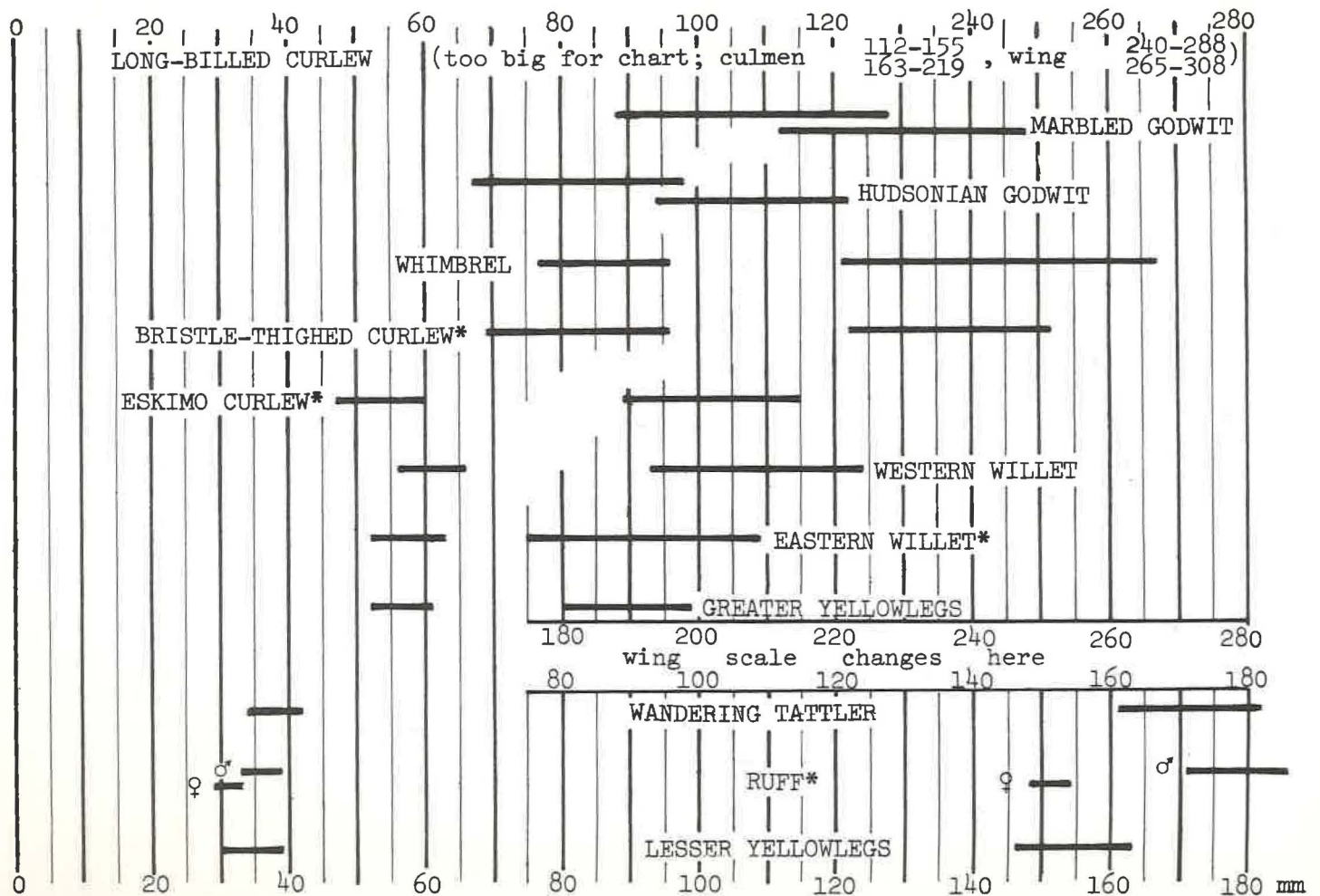


Figure 2. Large Sandpipers

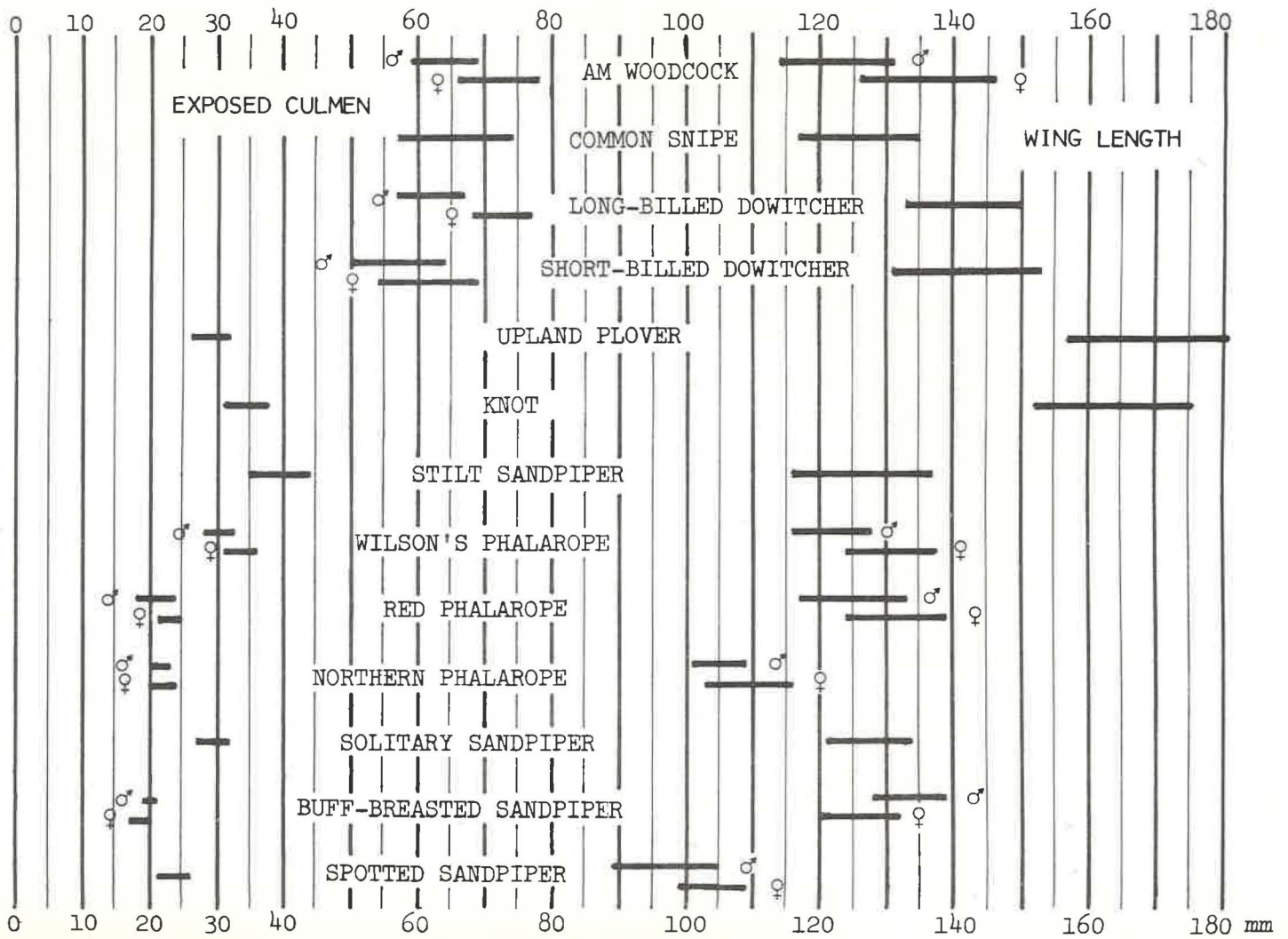


Figure 3. Medium-sized Sandpipers and Phalaropes

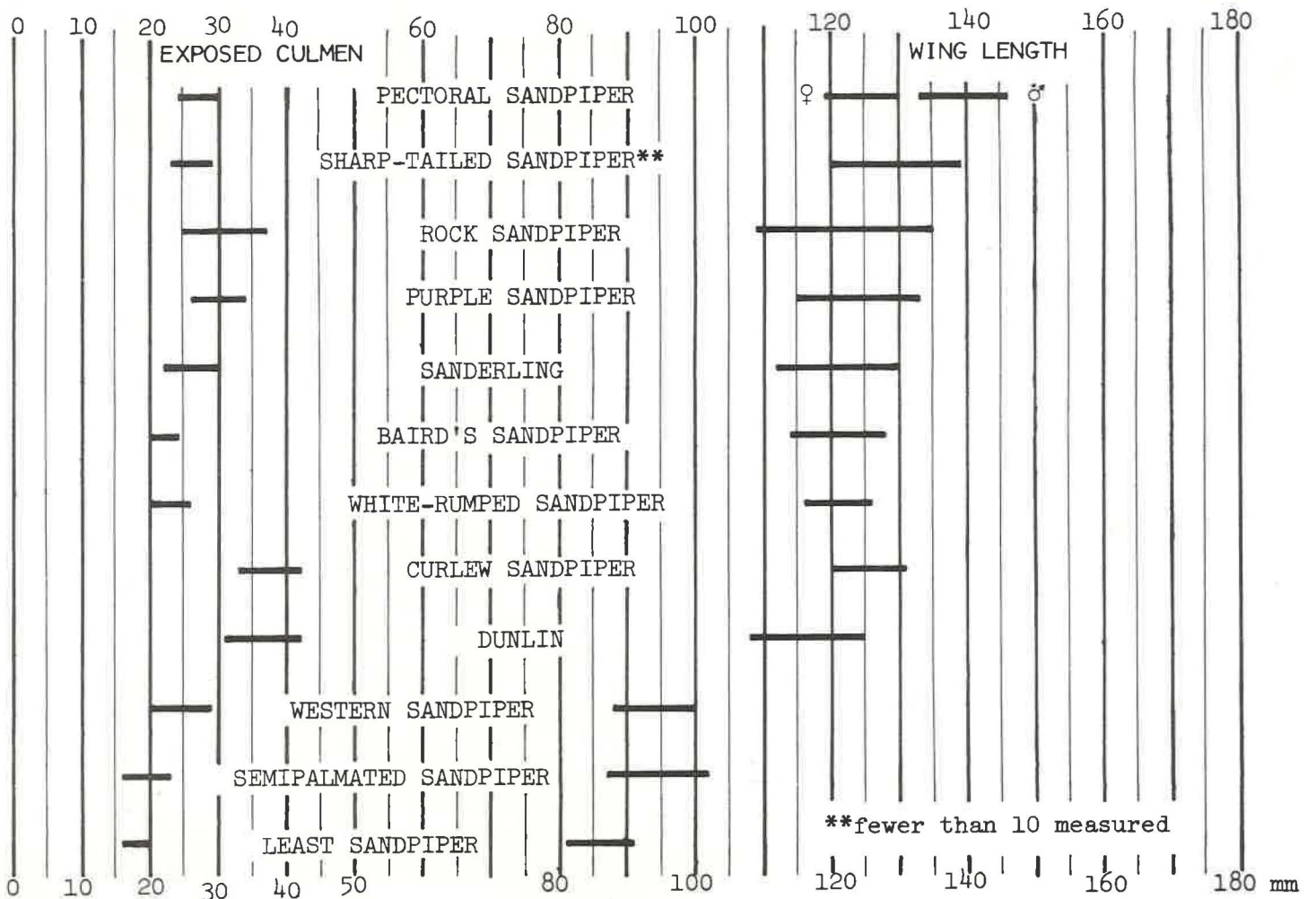


Figure 4. Peeps