Semipalmated Sandpiper: identification, migrations, summer and winter ranges

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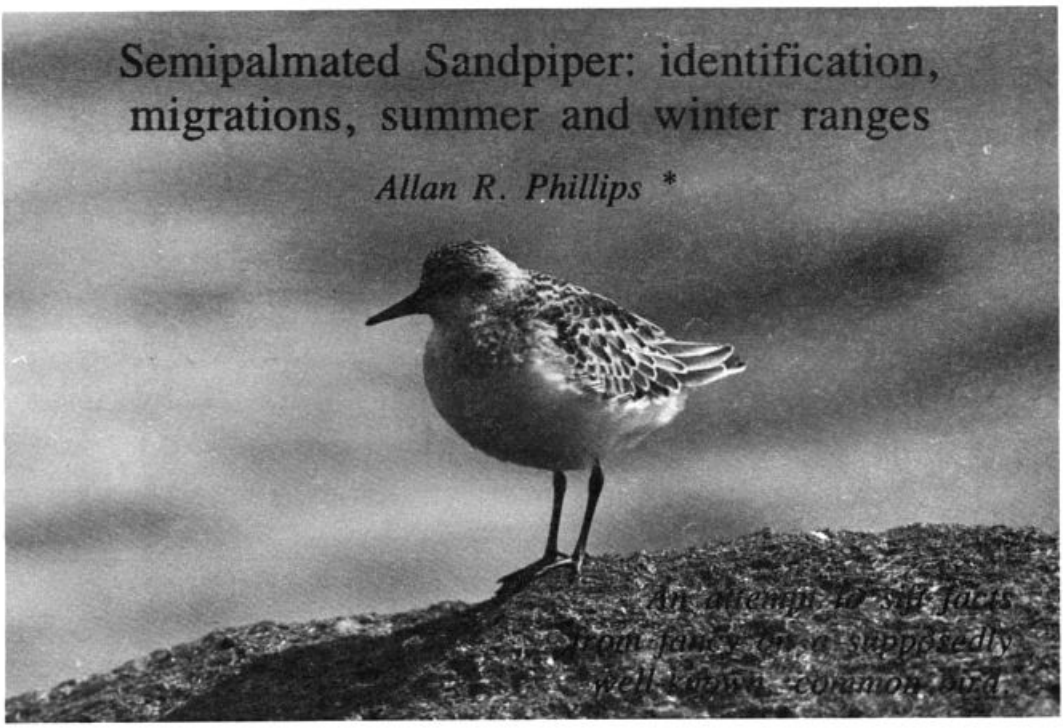

Semipalmated Sandpiper. Photo/Allan D. Cruickshank from N.A S

This paper will try to show how old, mistaken ideas about the distributions and relative abundance of the Semipalmated and Western Sandpipers, *Calidris (Ereunetes) pusilla* and *C. (E.) mauri*, still persist. Thus the latest A. O. U. Check-list (1957) gives *mauri* as migrating "chiefly along the Pacific Coast, rarely [or] in small numbers" anywhere else except "in the southern interior (Texas, Utah)"; whereas the Semipalmated migrates (presumably commonly) over "México, ... the interior of the United States and Canada, ... in fall ... spreading to intermountain British Columbia", as well of course as in the east. Only "in the intermountain region of the west" is it called rare, and even here it is reported in both migrations. It "winters from the Gulf coast of the United States and South Carolina ... through eastern México (Quintana Roo)" to South America, but is not accredited to any part of the Pacific coast of Central America. Except for northern North America, much of this is erroneous.

The Semipalmated Sandpiper is indeed common in the northeast, where most authors of books live. Not unnaturally, they reflect the A. O. U. views. Thus Peterson (1947) terms it "the commonest of the 'Peep' in the East", presumably at all seasons; and Pough (1951) says that "Over much of North America" it is "the most abundant shore bird. ... seen by the thousands", whereas the Western, though abundant in Florida, has "few records ... from the interior". Thus easterners feel it a conservative "rule of thumb" to call all "peep" Semipalmated, unless proved otherwise. Even when an older ornithologist had carefully worked out relative status, more recent writers blandly ignore his findings, without a scrap of specimen evidence (see Wayne, 1910, *vs.* Sprunt and Chamberlain, 1949).

Unable to verify a Mexican winter record for such a supposedly common winter bird as *C. pusilla*, I have attempted over the past 11 years to delimit its true winter range. Many patient and helpful colleagues made this possible. I personally examined (sometimes hurriedly) the collections of the American Museum of Natural History (referred to in the text as AMNH), British Museum (Natural History) (BM); private collection of George Miksch Sutton; the Johnson-Simpson Werner collection (now in the Museum of Northern Arizona) (JSW); Los Angeles County Museum of Natural History; Moore Zoological Laboratory, Occidental College; Museum of Comparative Zoology, Harvard University (MCZ); Sul Ross State University Collection of Vertebrates, Alpine, Texas (SRU); United

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Semipalmated Sandpipers. Photo/Allan D. Cruickshank from N.A.S

States National Museum of Natural History (US); University of Arizona Department of Biological Sciences (ARIZ); and University of Oklahoma. Selected specimens were borrowed from the Department of Zoology, University of Georgia, the University of Michigan Museum of Zoology (MICH), and from the University of New Mexico Museum of Southwestern Biology; and I saw certain specimens from the universities of Cornell, Kansas, and Minnesota.

Other information, positive or (usually) negative, was supplied by R. C. Banks; L. C. Binford (Louisiana State University Museum of Zoology); James Bond (Academy of Natural Sciences of Philadelphia); Pierce Brodkorb (private collections and Florida State Museum); John Bull; the late T. D. Burleigh; E. M. Burton (Charleston Museum); H. W. Kale, II; R. C. Laybourne (US); K. C. Parkes (Carnegie Museum of Natural History; CM); R. R. Patterson (University of Kansas Museum of Natural History); H. M. Stevenson (Florida State University and elsewhere); E. H. Stickney (Peabody Museum of Natural History, Yale University); R. W. Storer (MICH): M. A. Traylor, Jr. (Field Museum of Natural History; F); D. W. Warner (Bell Museum of Natural History, University of Minnesota); and G. E. Woolfenden.

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IDENTIFICATION AND SEX DETERMINATION

Lengths of exposed culmen (bill) given by Ridgway (1919) for his small series remain useful for Western Sandpipers; few specimens exceed his limits, and the sexing of his birds was largely accurate. Semipalmateds, however, vary more than he indicated, and males overlap *mauri's* measurements slightly (Ouellet *et al.*, 1973). As was well known to older writers, bills vary both with species *and sex*; males are shorter-billed than females, especially *mauri* males, many of which match female *pusilla*. Thus critical points to identify Semipalmated Sandpipers are (l) careful and accurate determination of sex and probably age, and (2) the shortest bills of each age/sex class of Westerns. The bill of male *mauri* ranges down not infrequently to 21.5-21.8 mm., but very few are shorter; most of these are immatures, whose bills seem to continue growth into or through their first September. A *mauri* below 20.8 mm. is exceptional, yet includes even an occasional May ♂: Arizona (JSW 461), 20.5, British Columbia (AMNH 357417), 20.2 mm Thus males between 20. 2 and 21.1 mm. (and possibly even to 22.0, *fide* Ouellet *et al.*, 1973) cannot be safely identified by exposed culmen alone. Weske's studies indicate that ♀ *mauri* are rarely much shorter than 25.0 mm. in autumn, but Ouellet *et al.* show females of the two species as overlapping from 23.4 to 23.9 mm. They also

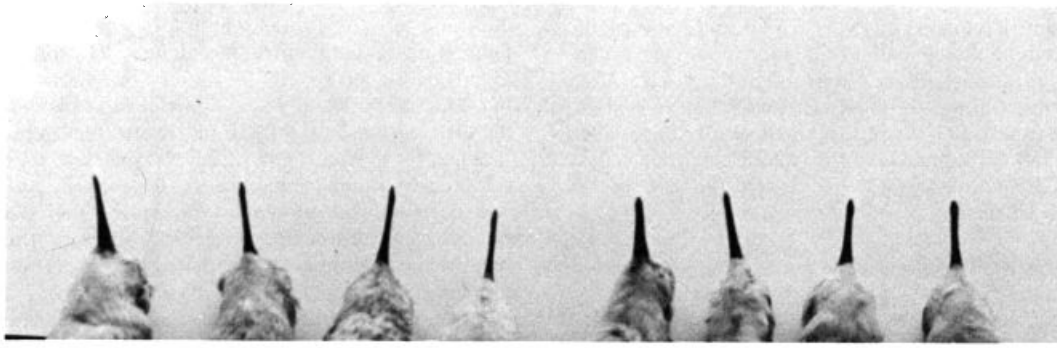

Fig 1. Bills of male *C. mauri* and female *C. pusilla* showing size comparison and comparative breadth. l. to r. *C. mauri* ♂ Comox, B.C. 8/15/03; ♂ Gardner's Lagoon, Lower Calif., 4/22/94; ♂ Nome, Alas., 7/13/11; ♂ Brownsville, Tex , 10/1/11; *C. pusilla* ♀ Long Island, N.Y., 8/28/02; ♀ São José, Brazil, 1/25/26; ♀ Seaford, N.Y. 5/23/13; ♀ Mastic, N.Y., 8/30/15. Head of *mauri* on extreme left tilted to show illusion of breadth at certain angles. Specimens courtesy AMNH.

find bill - from - nostril a useful character, and the culmen/bill width ratio. The insoluble (?) riddle of identifying birds of unknown sex is under study by H. M. Stevenson.

Page and Fearis (1971) and Ouellet *et al.* (*op. cit.*) show several times as much overlap of the sexes (22.5 to 26.2 mm. in all) in culmen lengths of Westerns as did Ridgway (1919). All measured museum skins, and only the first commented (indirectly) on possible mis-sexing, concluding that museum "males" did not differ from dissected ♂♂ "since the means and variances ... did not differ significantly (P) 0.05)." But their museum "males" *did* show a higher mean and a higher standard deviation, indicating that some *were* probably mis-sexed. Statistics can "prove" facts such as that the average summer specimen is correctly sexed, which no one doubts; they do not solve really critical points — limits of variation — much less when these problems are not clearly presented. Page and Fearis give neither the ranges of the dissected males nor any data at all on the dissected ♀♀. In my opinion, a division at 24.5 mm. should separate at least 98% of ♂ and ♀ *mauri*; the gonads of any that far surpass this figure should be duly preserved for study.

Migrant sandpipers are often fat, and a bit of fat is easily mistaken for a gonad in a hurried dissection, even by the experienced. Thus I feel it wisest to exclude from the following accounts two or three birds I would call Semipalmated if I were sure they were really ♀♀ as labeled. Surely if the winter range does extend beyond the limits given herein, the fact should be easily established on a solid, scientific basis; and this is preferable to the inclusion of dubious data which might finally oblige others to reassess the whole difficult problem. *Clearly, birders can help by making sure that any casualty they happen across reaches someone capable of proper dissection and identification, properly tagged with locality, date, condition, and finder's name.*

Other specific differences are less constant than bill-length. Some Semipalmateds have relatively wider, stubbier bills than any Western (Fig. 1), but this difference holds only for certain populations (Palmer, 1967:217; Ouellet *et al.*, 1973; and others). The well-known color differences in alternate (breeding) plumage are good on the average; but exceptions include a Sonora ♂ Western (ARIZ 1418, April 15) narrowly streaked on the chest and with little rusty anywhere except on the rear half of the crown, and an adult ♀ Semipalmated from Connecticut (ARIZ 6370, July 22) with broad streaks below and much rusty above While the rusty of 1418 is lighter and brighter than that of 6370, the rusty variant of *pusilla*, such slight differences could hardly be used in the field. Nor, I believe, could slight supraloral and auricular differences in basic (winter) plumage, though selective collecting may prove otherwise

The small MacConnell series of "Semipalmated Sandpipers" from Guyana (BM) illustrates these difficulties. All are in basic plumage, and none sexed. The shortest-billed bird is indeed *pusilla*, the longest *mauri*; but I cannot identify the rest.

Of what value, then, are the usual Field Guide characters of bill lengths and colors? It would be just about as easy to identify by sight the two races of Willet (*Catoptrophorus semipalmatus*), which no one attempts. Clearly, more attention must be paid to voices. These are hard to describe, and authors who mention them at all give varying descriptions (see Nichols, in Bent, 1927, Trautman, 1940; Peterson, 1947; Pough, 1951, Imhof, 1962; Robbins *et al.*, 1966; Palmer, 1967, and ffrench, 1973). Since Nichols and Trautman,

only Keller (1972) and Ouellet *et al.* (1973) stress identification by voice. To me, a common Semipalmated call or location note has a *chit - chit* quality, lower pitched than the usual "almost shrill *'cheep'* " (Godfrey, in Oullet *et al.*) of a Western and, mercifully, not at all suggestive of chalk on a blackboard, but sounding like a distant female Great-tailed Grackle, *Quiscalus (Cassidix) mexicanus*.

MIGRATIONS

North of New York, where *mauri* is relatively rare, the migrations of Semipalmated Sandpipers are well known. But in the west its status is obscured by lack of continuous collecting anywhere south of British Columbia. Here, and in adjacent northern Idaho (Lewiston, and once Moscow; US), the fall flight of *pusilla* is surely far greater than any slight spring passage that may have passed unnoticed thus far; it must then turn east, for in the Great Basin and from western New Mexico west Semipalmateds are scarce or absent at all times. (For a correction on Utah see Twomey, 1944.) In fact, *contra* the A. O. U., there were very few if any authentic records in the intermountain west at any season before 1957. In eastern New Mexico it may prove regular in spring, but farther west it is hardly more than casual then, and still scarcer in fall as far as known. It should be sought, however, as two immatures were taken by James F. Scudday almost as far west as the Pecos River in Ward County, Texas, September 6, 1969 (SRU).

As stated by the A. O. U., the British Columbian flight is mainly through the intermountain valleys; but a few do reach the coastal part, at least in August: Sumas Lake, 1890, and Luck-a-cuck River, Chilliwack, 1887 (both MCZ). The report of 7 ♂ 1 ♀ from Calvert Island, "14 May to 18 September" (Dickinson, 1953) needs rechecking. In my hasty visit to MCZ I found only 3 ♂, all taken September 1, 1934. Having bills at and below Ridgway's minimum for *mauri*, these were understandably called *pusilla*, and it is indeed surprising that 3 such birds were taken together. But their tertials and, in 2 of them, other dorsal areas seem too deep, rich rusty for *pusilla*, and I believe they are short-billed Westerns. In any case, they show the difficulty of identifying even good, well sexed specimens at times!

SUMMERING

Birds and their migrations may be studied at different levels. Should an observer enjoy birds without worrying about identifying difficult groups, as many do, ornithologists are glad that he, too, finds birds interesting — so long as he does not ask us to take him too seriously, or publish notes that confuse the picture. Yet correct identification of species is merely the start, not the end, of bird study. A higher level considers the distributions and migrations of different populations (subspecies), and of age/sex classes, their relations to plumage changes, fat deposition, etc , and possible year-to-year variations — to list a few obvious problems. New discoveries at this level bring a satisfaction which repays the often arduous and painstaking efforts needed.

One such problem is over-summering. This is common in *pusilla* in South America In Surinam "many remain through the northern summer" in basic (winter) plumage (Haverschmidt, 1955, 1968); there is also an alternate (nuptial)-plumaged ♀ taken there June 19, 1905 (AMNH), as well as two in basic plumage taken 8-10 days later. An Ecuadorean ♀, July 3, 1955 (BM) is apparently molting from one basic plumage to another, as is characteristic of nonbreeding immature Short-billed Dowitchers, *Limnodromus griseus* (Loftin, 1962:31). In northern Venezuela McNeil (1970) noted a steady increase from about mid-June on, which he suspected was of birds coming from farther south On Curaçao Voous (1963) reported small flocks on June 19 and 24, though the basis of his identification is unclear. (The two reported by Carriker, 1910: 421, as taken from "a flock of about a dozen" in Costa Rica, July 3, 1907, seem of dubious identity, *fide* K. C. Parkes.)

Yet in the far-better-known United States, and in Mexico, Semipalmated Sandpipers are everywhere scarce or absent between June 9 and July 9, and especially in the period June 18-24 (excluding the highly unlikely reports of Williams, 1938). Coffey (1960) was doubtless correct in reporting May and early June sandpipers in Mexico as spring transients (I have seen others in late May which were gone by early July); McNeil (1970) should not have included these and other reports under "estivage". Birds that do not return to their natal region (mostly or all immatures?) evidently remain on or near their wintering grounds in June and early July, although possibly moving around within South America.

WINTER RANGE

The major discrepancy between my findings and current concepts concerns the winter range of the Semipalmated Sandpiper, which is universally agreed to cover the coasts of the eastern United States except for the extreme northeast, besides eastern Mexico and Central America (see Fig 2) I find no valid evidence for most of this. Surely if


WINTER RANGE
of
Calidris pusilla
PRESENT STUDY
A.O.U.
(STATED AND IMPLIED)
K. RAFFERTY

Figure 2

the reports of the A. O. U. (1957) and the most expert ornithologists (such as Burleigh, 1944, and Lowery, 1955) were at all correct — not to mention the innumerable sight records each winter — some museum somewhere would have had verifiable, authentic winter specimens from some part of this vast area. But my protracted inquiries and searches produced none. Finally one was especially taken for this study by John C. Ogden at the tip of Florida (south end of Lake Ingraham, Cape Sable, west of Flamingo) on January 11, 1974 (Everglades National Park collection). Even here, Ogden estimated that only 2-3% of the "peeps" that month were *pusilla*. Elsewhere, all reports checked by me proved to be misidentified, mislabeled, or without specimen support.

Farther north, an Ipswich, Massachusetts, Semipalmated of November 8, 1888 (S. W. Denton, MCZ) was exceptionally late, as perhaps also the October 31, 1924, record at Buckeye Lake, Ohio (Trautman, 1940). Late October records in the south may be quite usual; E. Milby Burton (*in litt.*) took three specimens in Charleston County, South Carolina, October 23, 1934, and Weston (1965) reports it to November 1 in northwestern Florida (specimens not examined by me).

More doubt attaches to the seasonal status of two November 22 specimens: ♀, "Florida Keys", 1870 (C. J. Maynard, MCZ), and ♂, Cozumel Island, Quintana Roo, Mexico, 1971 (K C. Parkes *et al.*, CM). The latter was a lone bird lingering with a few Least Sandpipers, *C. minutilla*, November 19-22. More northern near-wintering reports seem doubtful: March 14 in Kansas (Johnston, 1960), and especially November 23 and 25 in flocks (!) in Arkansas (Baerg, 1951), which probably do not pertain to *either* Semipalmated or Western Sandpipers.

Cozumel Island is known to have certain Antillean affinities; 3 Antillean-wintering warblers, *Dendroica* spp., occur there regularly. Lack of comparable records for any nearby mainland region makes the verifiable winter range of the Semipalmated, at present, a peculiar hollow semicircle (Fig. 2). Most winter specimens are from Haiti (US) or south, in the southeastern Antillean region and South America. Even in the West Indies, few winter (Bond, 1940); in Trinidad it is less common than *mauri* from October to December (ffrench, 1973); and even in northeastern Venezuela most adults pass on, probably southward, at the end of September, according to McNeil (1970)! There is one good Patagonian record: ♀, apparently reading "Maceo Gulf" (=Golfo Nuevo??), March 1883 (BM, *ex* Seebohm Collection).

Winter records to the northwest are entirely (?) of very small numbers in areas with abundant *mauri*: Panama, a wintering (?) ♀ at Panama Viejo, February 26, 1882 (Wetmore, 1965), Costa Rica, 4♂4♀, Punta Piedra [=Piedra de Blanca], Guanacaste, January 28 to February 29, 1924 (A. P. Smith, F and AMNH); El Salvador, 2♂ (first atypical) 1♀, Puerto del Triunfo, December 31, 1925, and (2) January 6, 1926 (van Rossem, LA); and Guatemala, Chiapam and San José, evidently both in January 1863 though the Salvin-Godman label itself says 1865 on the former (Salvin, BM). All but the Panama bird have been reexamined by me or my colleagues in the present study. (There is also a sight record for southern Honduras February 11, 1963 — Monroe, 1968.)

Importantly, all 14 of these winter specimens are from the *Pacific* coast of Central America, *contra* the A. O. U., whose Quintana Roo report is evidently based on AMNH 254562, Vigia Chica, January 26, 1926 (L. Griscom); while this is labeled *pusilla*, it is actually *mauri*, as are all supposed winter *"pusilla"* seen by us from Texas, Mississippi, Georgia, and Florida, except Ogden's bird.

Like the Western's, the Semipalmated Sandpiper's winter range is largely limited to the vicinity of the coasts. Its apparent hollowness is probably partly due to very deficient collecting all along the Caribbean coast of Central America (and Mexico). Here I have no record between early fall and the last third of March, as yet It is noteworthy that Van Tyne and Trautman (1945) witnessed northward departure of "peeps" (probably including *pusilla*) from Yucatan on March 31, while Weston (1965) reported the Semipalmated in northwestern Florida on April 5, and it has reached Oklahoma by April 8 (Sutton, 1967, specimen examined). Thus March records in Mexico need not indicate wintering.

CONCLUSIONS

Whether occasional Semipalmated Sandpipers do actually winter in the western Caribbean or north of the tip of Florida remains to be proved by ornithologists with proper collecting permits and sharp ears — and preferably familiar with J T Nichols' discussion in Bent, 1927:251 and 260-261. In any case, regularity and percentages of *pusilla* should be determined everywhere north of South America, in order to allow future comparisons which establish changes in abundance and/or distribution. In fact, this is just as true in South America (Haverschmidt, 1968). Relative status, ecology, migrations, behavior, etc., must

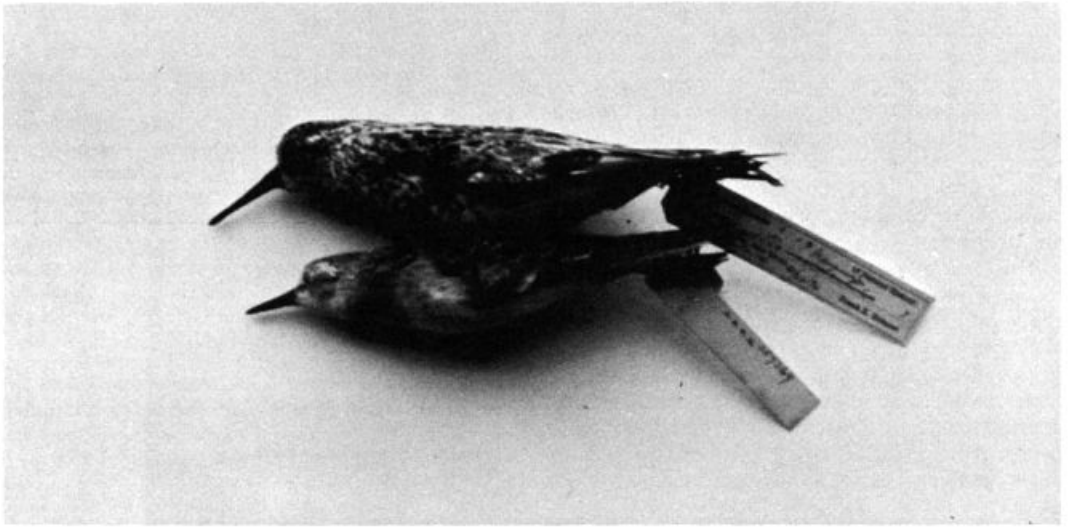

Fig 3. Extreme variation in bills of *C. mauri* and *pusilla*. Above, ♀ *mauri*, San Diego, Calif., 4/28/94; below, ♂ *pusilla*, Tadoussac, Qué., 8/14/89.

all be worked out over again on a more accurate, scientific basis. Let us have fewer bad guesses and better dissections.

The rarity or absence of Semipalmateds in winter northward, and their relative scarcity in autumn in at least parts of Florida (Loftin, 1962; Weston, 1965), lend weight to the idea (McNeil and Cadieux, 1972) that many of them fly nonstop from eastern Canada or New England to the Lesser Antilles or South America in fall.

To cite one basic problem: To what extent *do* these two species mingle? My impression (quite possibly mistaken) is that most "mixed flocks" are cases of misidentification; the two associate only to the usual shorebird extent, *i.e.* when safe and food-rich areas are limited. When good habitat is extensive, each tends to keep to itself. Study of this problem will, in turn, aid in solving others (relative numbers and ranges).

My conclusion that only good specimen evidence warrants consideration of winter records of *pusilla* northward closely parallels the conclusions of Ouellet *et al.* (1973) on migrants of *mauri* northeastward. May such studies serve as appropriate and sobering reminders to all who may forget that "Field Guides" and Check-lists follow other scientific papers based, in turn, on collections. Thus our books are only as accurate as their museum bases.

Since it is becoming clear that there are many times and places where Semipalmated and Western Sandpipers are *not* to be expected, ornithologists should remember that suspected stragglers of either, far from their usual range (geographically and/or ecologically) at the season, ought to be further checked by examination of the webs at the bases of their fore toes. Both our species are "semipalmated", unlike some Old World species that closely resemble ours otherwise.

Finally, this case is a beautiful illustration of the dangers of rule-of-thumb ornithology. The fact that species A is commoner than B at a season when the two are fairly easily distinguishable does *not* mean that it is necessarily commoner, or even occurs, at the same place at another season, when identification may be difficult or impossible in the field. Let us not be afraid of listing "species?", which must often be the honest truth in any difficult group. Such a listing shows *knowledge* of the possibilities and problems involved, not (as many seem to think) incompetence or carelessness. The best scientists often see birds they list as "species?", query, or omit entirely.

SUMMARY

Most Semipalmated Sandpipers are safely distinguishable (from Western Sandpipers) only by *voice* or by bill measurements *combined* with careful determination of sex. (Figs. 1, 3). Contrary to the literature and universal opinion, there is no well-authenticated winter record yet for Mexico or the United States, except a recent specimen from the tip of Florida. Even here *C. pusilla* constitutes a small proportion of the wintering

"peeps", and may not prove regular. Most Semipalmateds winter along the South American coasts, north in diminishing numbers to the Lesser Antilles, Haiti, and along the *Pacific* coast of Central America to Guatemala (Fig. 2). There is still no proof of wintering in Caribbean Central America. Migrations and over-summering are discussed; the latter is largely or wholly limited to South America. Long over-water flights in fall are likely.

This case illustrates the need for museum collections, properly studied, as guides in the field study of living birds, the undesirability of rule-of-thumb identifications, and the continuing need of selective collecting quite generally, at the right times and places, if we are to understand present distributions and abundance and possible future changes. Behavior, ecology, etc., of *pusilla* must be re-studied. The term "species?" needs wider use

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