CRITICAL NOTES ON LIMNODROMUS SEMIPALMATUS

By A. L. RAND

The Old World dowitcher Limnodromus semipalmatus (Blyth) is so similar to the New World dowitchers L. griseus and L. scolopaceus that these several forms have been considered conspecific; but recently Pitelka (Condor, 50, 1948: 259-269) has maintained that the relationships of semipalmatus are unknown, and Sutton (Condor, 51, 1949: 259-261) has resurrected the monotypic genus Pseudoscolopax for it.

In attempting to evaluate their reasoning, I found it necessary to condense and list their arguments and conclusions. The latter are so at variance with mine that I have also examined the material in the Chicago Natural History Museum, including a partial skull of Limnodromus semipalmatus.

Pitelka suggests that we do not know the closest relative of Limnodromus semipalmatus and attempts to demonstrate this by stressing similarities with Limosa. He considers the following points:

**Color pattern.**—The speckled downy young of L. semipalmatus (Hachlow, L’Oiseau, 2, 1932: 290) is very similar to that of L. scolopaceus (specimens, C. N. H. M.). The downy young of griseus (specimens, H. B. Conover coll.), though different enough to tell at a glance, is still the same general light-spotted type of plumage, but paler. These are all very different from the blotched young of Limosa, as Pitelka admits, but he is loath to attach significance to this.

In all subsequent plumages the color and pattern would allow us to put semipalmatus in either Limnodromus or Limosa. Its inclusion in Limosa would call for only a slight change in our concept of the known color patterns in that genus; its inclusion in Limnodromus would not increase the variation in color or patterns in that genus to the extent that now exists in Limosa. This is a neutral point.

**External morphology.**—Wing and tail form, tarsal scutellation, and development of hind toe Pitelka considers neutral. In greater webbing of the toes semipalmatus differs from both Limnodromus and Limosa, and Pitelka attaches some weight to this as indicating that semipalmatus is further removed from Limnodromus than is now admitted. However, it must be remembered that extent of webbing between toes may be only a subspecific character in shore birds, as in Charadrius h. hiaticula and C. h. semipalmatus. These characters all seem neutral at a generic level.

Bill characters of Limosa and semipalmatus according to Pitelka are similar except for the fact that the bill in semipalmatus is not recurved and the tip of the bill is dilated and pitted, thus snipe-like. However, the bill of semipalmatus is almost precisely like those of Limnodromus scolopaceus and L. griseus in straightness, in the dilated, pitted form of the tip, and in the way the upper mandible fits in part into the wider lower mandible. If there is a difference, it seems that this last character may be slightly more accentuated in scolopaceus. In these characters the bills contrast strikingly with those of Limosa.

The ear seems to be more below the eye in semipalmatus, agreeing better with Limnodromus than with Limosa according to Pitelka from an examination of skins, a fact which I have corroborated by skull examination. Actually this is but another expression of change in skull form (see below).

**Size.**—Pitelka devotes about a page to size, showing that semipalmatus is intermediate in wing size but in tarsus and bill is closer to Limosa. General size, especially when of the magnitude of male wing (Limnodromus griseus 146 and L. semipalmatus
169; *Limosa haemastica* 203 and *L. lapponica* 224 mm.), seems useless as a generic character.

Pitelka got the impression from handling skins that the head of *semipalmatus* was relatively smaller than the body, compared with the condition in *Limnodromus griseus* and *scolopaceus*, and more like the condition in *Limosa*. I have compared the skeletal material of males of *Limosa* and *Limnodromus* available.

<table>
<thead>
<tr>
<th>Species</th>
<th>Body length*</th>
<th>Skull length from anterior border of orbit</th>
<th>Index: Skull length/Body length</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Limosa fedoa</em></td>
<td>122 mm.</td>
<td>30 mm.</td>
<td>4.06</td>
</tr>
<tr>
<td><em>Limosa limosa</em></td>
<td>102</td>
<td>28</td>
<td>3.64</td>
</tr>
<tr>
<td><em>Limosa haemastica</em></td>
<td>110</td>
<td>28</td>
<td>3.57</td>
</tr>
<tr>
<td><em>Limnodromus scolopaceus</em></td>
<td>75</td>
<td>20</td>
<td>3.75</td>
</tr>
</tbody>
</table>

* From anterior surface of shoulder to tip of pubis.

Thus, it seems that the ratio of skull to body length in *scolopaceus* falls within the range of that ratio in *Limosa* and the character is not of use here.

**Molt and sexual dimorphism.**—Molt is similar in the different forms and Pitelka considers this neutral as a character. But sexual dimorphism in color, which he describes for *L. semipalmatus*, the female being on the average paler and sometimes having spotting ventrally, he uses as evidence. *L. griseus* and *scolopaceus* he says have none, while among godwits there is a varying tendency toward sexual dimorphism. In some species of *Limosa*, however, this tendency is so slight or even nonexistent that Ridgway (Birds N. M. Amer., part VIII, 1919: 178 ff.) described *Limosa fedoa*, *L. lapponica baueri*, and *L. haemastica* as sexes alike in summer while only *L. limosa* is given as having the female different from the male. It is no more illogical to have sexual dimorphism, also lack of it, in *Limnodromus* than in *Limosa*. And this seems a neutral character. Sexual dimorphism in size Pitelka quite rightly considers a neutral character here.

It is advisable to tabulate these characters of *semipalmatus* and see how they add up.

<table>
<thead>
<tr>
<th>Character</th>
<th>Relationships</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Color pattern</td>
<td>Downy young—strongly <em>Limnodromus</em>; subsequent plumages—neutral.</td>
</tr>
<tr>
<td>(2) External morphological characters</td>
<td>Wing, tail, tarsal scutellation and development of hind toe—neutral.</td>
</tr>
<tr>
<td></td>
<td>Palmation—neutral.</td>
</tr>
<tr>
<td></td>
<td>Bill character—strongly <em>Limnodromus</em>.</td>
</tr>
<tr>
<td></td>
<td>Ear situated below eye—strongly <em>Limnodromus</em>.</td>
</tr>
<tr>
<td>(3) Size and relative size of head and body</td>
<td>Neutral.</td>
</tr>
<tr>
<td>(4) Molt and sexual dimorphism</td>
<td>Neutral.</td>
</tr>
</tbody>
</table>

Even disregarding Lowe’s (Ibis, 1931:712-771) findings, based on the skull, as Pitelka did, on the basis of this summary, I cannot agree with Pitelka that “Placement of *semipalmatus* in the monotypic genus *Pseudoscolopax* Blyth would better reflect present knowledge concerning its relationships.” *Limnodromus semipalmatus* seems to be a dowitcher.

Lowe (*op. cit.*) when studying the genus *Limnodromus* evidently had some skeletal material of *L. semipalmatus*, but, perhaps because it was so similar to *L. scolopaceus* which he figured, he made little comment on it. Thus the matter might have rested. But in view of Pitelka’s comments that *L. semipalmatus* may not be closely related to *L. scolopaceus* and *griseus*, I extracted a skull (incomplete) from a skin of *L. semipalmatus* and compared it with skulls of *Limnodromus scolopaceus*, *Limosa fedoa*, *Limosa limosa*
and Limosa haemastica (see fig. 35). The two species of Limnodromus (scolopaceus and semipalmatus) agree among themselves and differ from the three species of Limosa in:

1. the increase in size of the ectethmoid plate and its closer association with the orbital process of the lacrymal,
2. the more forward position of the squamosal process, quadrate and other associated parts of the lower base of the skull (this naturally puts the ear farther forward under the eye),
3. the greater extent of the ossified nasal septum,
4. the groove for the nasal nerve on each side of the nasal septum is forward of the external process of the nasal bone, and
5. another skeletal point, mentioned by Lowe but not evident from the incomplete skull of L. semipalmatus I have checked by forcing open the bills of skins. The palatal surface of the premaxillaries has a conspicuous downward projecting ridge for the middle third of their length in L. scolopaceus; this is lacking in Limosa. Forcing open the bills of skins one is able to see that L. semipalmatus has a ridge like that of L. scolopaceus.

There are no characters which present material of Limnodromus semipalmatus shares with Limosa which it does not also share with Limnodromus scolopaceus.

The conclusion from the skull is the same as from the external characters: Limnodromus semipalmatus is a dowitcher and more closely related to the other members of the genus Limnodromus than it is to those of the genus Limosa.
NOTES ON LIMNODROMUS SEMIPALMATUS

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As to the validity of Pseudoscolopax, Pitelka suggested it be revived, and Sutton resurrected it and compared Pseudoscolopax with Limnodromus griseus. His characters are as follows: (1) plumage differences, quoted from Blyth, (2) hallux proportionately longer and heavier, (3) nostril more slit-like and 3-6 mm. from frontal feathering, rather than 1-2 mm., (4) peculiar troughing of bill, and (5) more extensive semipalmations between toes.

Plumage differences referred to by Sutton have been considered above and shown not to provide sufficient basis to separate semipalmatus from Limnodromus; indeed the downy young show a close relationship. The hallux being proportionately heavier and longer and the nostril being more slit-like and farther from frontal feathering may be real structural differences, but very small ones. If similar small differences were used in such currently accepted genera as Tringa, Numenius, Limosa and Erolia, these genera too would have to be divided much further.

Sutton did a useful service in pointing out the troughing of the lower mandible in semipalmatus, the upper mandible fitting into the lower mandible, but the condition is equally if not even more pronounced in the other members of the genus Limnodromus.

The semipalmation of the toes, as pointed out above, may be only a subspecific character in some shore birds and thus has little weight at the generic level.

Sutton expresses no direct opinion as to the relationships of Pseudoscolopax; but since almost all his minute comparisons are with Limnodromus griseus, one may deduce he thought it closely related to that. No sufficient reasons seem advanced for regarding semipalmatus as the type of a monotypic genus. Sutton states further that he may have been influenced in his thinking by the distributional range of semipalmatus. This one would think would be in direction of considering it a geographical representative of L. griseus and scolopaceus. That it is such a representative is obvious, but as with Numenius borealis and N. minutus, the differences seem great enough to consider them as distinct species.

DISCUSSION AND CONCLUSIONS

The species Limnodromus semipalmatus looks like a dowitcher; Lowe, who had skeletal material, considered it a dowitcher and made only minor comment; and some recent authors have considered it conspecific with the American dowitchers. Pitelka, on the basis of external characters, thought that semipalmatus was not a dowitcher, that it might be as closely related to the godwits as to the dowitchers.

From an examination of Pitelka's arguments, and the skins and the skeletal material in the Chicago Natural History Museum, it appears that L. semipalmatus has been correctly placed in the genus Limnodromus, contrary to Pitelka's views.

Sutton's resurrection of Pseudoscolopax appears to be an example of generic splitting which would serve no useful purpose and would conceal rather than elucidate relationships. If the same degree of "splitting" were followed in other groups of shore birds, the result would be a bewildering array of genera.

SUMMARY

The relationships of the Asiatic dowitcher (Limnodromus semipalmatus) are considered. It is demonstrated that they are with other members of the genus Limnodromus and that semipalmatus should be included in that genus in accordance with usual practice, rather than considering it a subspecies of either of the American species, or a representative of the monotypic genus Pseudoscolopax, and of unknown relationships.