

## A STUDY OF THE DOWITCHERS

BY H. B. CONOVER

RECENTLY, in connection with some other work, the writer made a thorough examination of the dowitcher specimens in his own collection and that of Field Museum. As the latter now contains a very fine series of skins from the Bishop Collection, something over three hundred specimens were available for study. In addition, fifty-two others were borrowed, for which I am indebted to Alden H. Miller of the Museum of Vertebrate Zoology, Robert T. Orr of the California Academy of Sciences, W. E. Clyde Todd of the Carnegie Museum, and Earl Wright of the Chicago Academy of Sciences.

My study has led me to believe that Rowan (Auk, 49: 14, 1932) was right in considering *Limnodromus scolopaceus* a distinct species, and also in naming the form *hendersoni*. As he says, it is this latter race, breeding from Alberta to Churchill on Hudson Bay, that seems to have caused a great deal of confusion, since examples of this interior breeding form often have been identified as *scolopaceus*. This has caused the belief that the Long-billed Dowitcher is more variable in size and coloration and much more numerous than it really is. Orr (Condor, 42: 61, 1940) has found that in California only about one out of five examples is *scolopaceus* and the specimens in Field Museum give a ratio of about one to four for North America as a whole. Out of two hundred and eight specimens in spring and summer plumage taken from the Atlantic to the Pacific and from the Gulf of Mexico to Alaska, fifty-three are examples of the Long-billed Dowitcher and twenty-one of these were taken on the breeding grounds in Alaska. Of one hundred and eleven specimens in immature plumage thirty-five are *scolopaceus*, and twenty-two of these are from Alaska, one each from British Columbia, Colorado and Connecticut, four each from California and Illinois, and two from Alberta.

My reasons for considering *scolopaceus* a distinct species can be stated as follows:—(1) the fact that the immature and downy plumages (as well as that of the summer adult) of *scolopaceus* are very different from those of *hendersoni* and typical *griseus*; (2) the much greater contrast in length of bill between the sexes than in birds of the *griseus* complex. In adults of *scolopaceus* the average for females is 72.5 millimeters, and for males 62.2 millimeters. In *hendersoni* it is for females 62.9, males 57.2; and in typical *griseus* females 60.9, males 56.4.

That there should be two distinct species of dowitchers inhabiting North America seems no more surprising than that there are two species of Yellow-legs or of Semipalmated Sandpipers. In fact the relationship between *Ereunetes maurii* and *E. pusillus* in many ways appears to be similar to that between *Limnodromus scolopaceus* and *L. griseus*. Both *maurii* and *scolopaceus* are western forms, breeding only in Alaska, appearing in migration mainly in the West but also more or less regularly in the interior and more rarely on the eastern seaboard. Also like *scolopaceus*, *maurii* in winter dress is difficult to distinguish from its relative except by the form of the bill.

The characters of the different forms are as follows:—

LIMNODROMUS SCOLOPACEUS (Say). Long-billed Dowitcher

In breeding plumage this species differs from *hendersoni* by being much darker dorsally. This is due to the fact that the buff edgings and barrings of the feathers are much narrower and redder especially on the scapulars and tertials. The tail-feathers are darker, the light barrings being narrower and the dark bars wider, but this character is sometimes approached by examples of the other forms. Ventrally the salmon color of the under parts is about the same, but the dark spots in *scolopaceus* are confined to the throat and upper breast and take the form of short bars rather than dots. The spotting is heavier than in *hendersoni* and the flanks also are more heavily barred.

This form is also darker above than typical *griseus* but perhaps not so extensively. Underneath, however, it is much redder, as the Eastern Dowitcher has the lower breast, belly, flanks and under tail-coverts whitish rather than salmon, and the reddish color of the upper breast and chest is generally paler. In *griseus*, while the spotting is confined to the same area as in *scolopaceus*, it is in the form of round dots rather than bars. Both forms have the flanks barred.

The above characters will serve to distinguish adults of *scolopaceus* from early spring to early fall, and sometimes even later as the tertials seem to be among the last feathers to be molted. However, during the time the bird is in full winter plumage, adult females can be told by the length of the bill which runs 68 millimeters or more against a maximum of about 66 millimeters in the *griseus* group. Males can generally be told by the darker tail, as can the females, but as stated this character does not always hold good. *Limnodromus griseus fasciatus* Brodtkorb (Proc. Biol. Soc. Washington, 46: 124, June 30, 1933) appears to be a synonym; Say's measurement of  $2\frac{3}{4}$  inches (70 millimeters) for the culmen of his bird places it as an example of *scolopaceus* and not of *griseus* nor of *hendersoni*.

In the immature plumage this species can always be distinguished by the much sparser light markings of the scapulars and tertials (in four immatures collected in the middle of October, these tertials are still present, although the birds otherwise are in first-winter plumage). In *scolopaceus* this reddish-buff marking is narrow and confined to the edge of the feather (in the longer or outer tertials the edgings are sometimes almost obsolete) except that in about one specimen out of five, there is an occasional indistinct light bar just back of the tip. In immatures of the *griseus* complex, however, the light edging is wider and there is besides about the middle of the web another buff line running parallel to this edge. Light bars are also present at times. In July and August specimens from Alaska all the light markings of the upper parts are redder than in specimens of the short-billed forms, but in September examples this red has faded somewhat. The tail in *scolopaceus* is darker and the sides of the face and neck are grayer.

Newly hatched specimens of the Long-billed Dowitcher from Alaska are very distinct from downies taken in Alberta and at Churchill, Manitoba, and can be distinguished at a glance. The upper parts of *scolopaceus* are dark chocolate, much darker than in *hendersoni* which is more reddish; and the light dots are *silvery gray* as against creamy white. The Alaskan downies have a narrow *silvery-gray* superciliary stripe running from above the eye to the nape, whereas in the more southern breeding birds this stripe is creamy white and much wider. Below, *scolopaceus* is darker with the center of the belly dusky (not white). Available for study were seven downy young from Alaska, three from Alberta and three from Churchill.

*Range.*—Known to breed in the Arctic from Franklin Bay, Mackenzie, west to Point Barrow and south to Point Dall, Alaska. In migration, commonest on the Pacific coast and the western part of the continent, but occurs throughout the interior and more sparingly on the eastern coast. Specimens were examined from Alaska (Point Barrow, Hooper Bay, St. Paul Island, Nome), British Columbia, Alberta, Saskatchewan, California, Texas, Colorado, Illinois, Connecticut, North Carolina and Lower California.

Supposed to winter as far south as Ecuador, Cuba and Jamaica. However, Chapman in reporting on Ecuadorian specimens gives a maximum bill measurement of 66 millimeters for females. It may be that this species does not winter as far south as does *griseus*.

## LIMNODROMUS GRISEUS HENDERSONI Rowan. Inland Dowitcher

Differs from *scolopaceus* in breeding plumage, as stated under that race, in having the upper parts much lighter, and the dark spots on the under side round, very sparse and scattered widely, not concentrated on the chest.

The most outstanding differences between this form and typical *griseus* are found in the coloration and spotting of the under parts. In *hendersoni* the entire ventral surface is salmon-colored, with perhaps a little white on the center of the abdomen and vent, while the spotting is rounded, sparse and scattered over the entire under surface. In fact in some extreme examples the spotting is almost absent. The barring on the sides and flanks also is generally very light. In *griseus*, however, the lower breast, belly, flanks and under tail-coverts are white or only lightly tinted with salmon, and the spotting is rounded, very heavy and confined to the lower throat, chest and upper breast. The sides and flanks also are more heavily barred. Rowan speaks of the upper parts of *griseus* as being much darker than in *hendersoni*, but I cannot quite agree with this. In fact, in fresh unworn spring plumage they are perhaps grayer on the back of the neck and top of the head, but this seems to disappear before the end of May. The rest of the upper parts is perhaps slightly darker, because the buff markings average redder and narrower. However, the coloration of the upper parts in these two races does not seem to be a very good diagnostic character. In winter plumage *hendersoni* and *griseus* are indistinguishable.

In immature plumage examples of the *griseus* complex can easily be separated from those of *scolopaceus* by the differences as stated under the latter species. It does not seem possible, however, to separate examples of typical *griseus* from those of *hendersoni*. Specimens taken on the West Coast seem on the average to have the chest more heavily speckled with fine dusky spots and to be less buffy, but on the other hand one of the least speckled and most buffy specimens examined was taken on July 30 at Beaverhill Lake, Alberta, just south of one of the known breeding grounds of *hendersoni*.

In the downy plumage, examples from Alberta proved to be somewhat darker than those from Churchill. They were redder, less yellowish. This is especially noticeable dorsally.

*Range*.—Specimens examined from Alberta, Manitoba, California, North Dakota, Illinois, North Carolina, South Carolina, Texas and Costa Rica.

Rowan (in litt.) states that Devil's Lake, Alberta, is the type locality

and that the type specimen is in the National Museum of Canada, Ottawa, Ontario.

LIMNODROMUS GRISEUS GRISEUS (Gmelin). Eastern Dowitcher

The outstanding feature of this form in breeding plumage is its white lower breast, belly and under tail-coverts and its dense *rounded* spotting which is confined to the lower throat, chest and upper breast.

In immature plumage, like *hendersoni*, it can be separated from *scolopaceus* by the much more heavily marked scapulars and tertials.

The downy plumage is unknown but judging from the differences between newly hatched young from Alberta and Manitoba, it probably will prove to be lighter (yellower) than either.

Intermediates between typical *griseus* and *hendersoni* are to be found. A female from Churchill (egg ready to lay) has the upper breast heavily spotted, the sides well barred and the abdomen whitish. An April bird from California has the throat and center of the chest immaculate salmon, but the sides of chest heavily spotted, the flanks strongly barred and the center of the belly whitish. A May specimen from North Carolina is similar but with a few fine dark spots on the lower throat.

Four birds from California shot on April 25 of the same year are typical *griseus*, so it seems to wander to the West Coast occasionally.

*Range.*—Specimens examined from James Bay, Nova Scotia, Massachusetts, Connecticut, New York, North Carolina, South Carolina, Georgia, Florida, Virgin Islands, California and Maranhao, Brazil. Probably nests east of Hudson Bay in the interior of the Labrador Peninsula.

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