

species down pat quickly. One can save a lot of time at the Plum Island salt-pans, if one knows what a Western Sandpiper sounds like!

Behavioral characteristics occasionally are of assistance. By virtue of its longer bill, the Western Sandpiper is able to feed in deeper water than the Semipalmated Sandpiper. It usually does so. Westerns also tend to "dunk" the entire head while feeding; Semipalmateds rarely do so. In fact, most of the Westerns that I have found for myself first caught my attention through their distinctive feeding habits.<sup>5</sup>

What criteria are used to distinguish non-avian siblings?

Certain field-cricket may be diagnosed by their characteristic stridulation patterns (p. 45); fireflies, by their light-flash patterns (p. 51); termites, by their nest structures (p. 50). Sibling species of octopus are infested by different parasites (p. 54). Sibling black flies exhibit distinct salivary gland chromosome patterns (p. 55). To diagnose sibling slugs correctly, one should see the courtship pattern (p. 52). Various sibling moths feed exclusively on different food-grains (p. 40). "The" malaria mosquito of Europe is actually six species, only two of which are dangerous to man; they may be identified by the egg-coloration pattern (p. 35). Certain species of Lepidoptera (butterflies and moths) can be correctly identified only after inspection of the armatures of the male genitalia (p. 41). Bird-watchers have much to be grateful for!

#### Footnotes

1) Sympatric = sharing a common breeding range; parapatric = having breeding ranges which are contiguous, with perhaps a narrow zone of overlap; allopatric - having non-overlapping breeding ranges.

Among certain lower animals, allopatric sibling species can sometimes be detected by artificial breeding experiments in the laboratory. One need only bring together two sample populations drawn from different localities and then observe whether or not the two groups freely interbreed. Such experiments have been conducted for certain "fruit flies" and frogs, but the procedure is impractical for birds.

2) Note the same familiar pattern: (1) Kumlien's Gull was first overlooked entirely, then (2) after its "discovery" it was thought to be a subspecies of the Herring Gull, and finally (3) it was classified as a subspecies of the Iceland Gull (Larus glaucoides, 1822).

3) Mayr, Ernst and Lester L. Short (1970), Species Taxa of North American Birds (Nuttall Ornithological Club, Cambridge), pp. 28-29, 91.

4) Mayr, Ernst (1963), Animal Species and Evolution (Harvard University Press, Cambridge), p. 38. Unidentified page references in the final paragraph of this article will all refer to this book. References to the primary literature may in turn be found there.

5) The differences in feeding habits and the greater bill length of the Western Sandpiper suggest to me that, as the tide comes in at Newburyport, for example, Western Sandpipers should linger longer in the harbor than do the Semipalmateds. I do not know this to be a fact, but local birders who manage to "catch" the tide might well watch for the phenomenon. I believe that I have once observed the reverse situation, that is, Western Sandpipers arriving first as the tide goes out.

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#### WINTER SONGS OF THE PURPLE FINCH

During nine winters from 1962 to 1972, Stewart Duncan of Boston University recorded the earliest dates on which he heard Purple Finch songs in Essex County, Massachusetts. Three types of vocalization were noted: the familiar warbling song, the uncommon vireo song (short phrases of a few notes each), and a vocalization likened to the whisper song similar in pattern to the warbling song but much softer, lasting 1 to 3 seconds, and repeated for 1 1/2 to 3 minutes).

Only twice was the vireo song heard, in February, 1971. The warbling song was noted as early as February 9th, though the author remarks that it is more frequently given later in that month and in March. The whisper song seems to be uttered earliest, beginning in mid-January. From The Auk, October, 1973.

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