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Does the Woodcock Bob or Rock—and Why?[1]

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Details of the behavior of the American Woodcock (*Philohela minor*), other than those of the mating display, are little known. Undisturbed birds fly only for brief periods in twilight and are almost always well concealed while on the ground. Woodcock may become conspicuous, however, when they feed in open areas during daylight hours.

On two such occasions, I observed the repetitious body motions of undisturbed birds from a large window in my home in St. Paul, Minnesota. The birds moved about a flat-to-gently-sloping lawn and adjacent areas covered by tall sparse staghorn sumac (*Rhus typhina*) and small box elder (*Acer negundo*) that had no branches below 1–2 m. The area was 12–45 m below the window and 25–50 m away. I used either 7 × 50 binoculars or a 20× spotting scope, and, as there was a high, thin overcast and all observations were between 0630 and 1730, the light conditions were very good.

One bird, observed for a total of 8 h between 29 March and 1 April 1978, actively fed on the lawn, with a few excursions to the leaf litter under the shrubs. There was some old snow nearby but none in this area. I probed the saturated soil with an aluminum rod and found that the frost line varied from 5 to 20 cm in depth. As the bird slowly walked about, its head and neck remained on a level plane, but its body was almost continually moving back and forth, best described as "rocking." A line between the neck and dorsal feathers was obvious, because, while the body moved, the head did not. One foot was lifted high then placed down ahead with the weight on it; the other foot was lifted so that only the tips of the toes were in contact with the ground. This repetitious movement stopped when the bird picked a small worm from the surface, probed deeply to pull out a large worm, or extracted an insect from under a leaf. The head was well forward and held slightly to one side with the tip of the bill 3 cm or less above the surface. Sometimes progress was broken by repeated rocking in one place, and, less often, the bird stood motionless for several minutes.

On 4 April 1974, I watched another bird for 45 min in the same area during the middle of the afternoon. Although the ground had been bare for more than a week, 15–20 cm of fresh wet snow had fallen the previous afternoon and evening. This bird walked slowly on top of the snow with the same rocking motions. The next morning I tracked it for about 300 m and found no sign of probing, although it had stopped at the base of several oak trees, where a few grass stems or dry leaves protruded above the snow.

The early literature on woodcock behavior is thoroughly reviewed by Pettingill (1936), who also presented his own observations on bobbing. He cited Christy (1931: 14) who noted "the well-known teetering movement of the woodcock's body." Sheldon (1967: 84) quoted Glascow (1958) as noting that "these woodcock walked a few steps in a (rumba-like manner)" on a dry lawn in east Texas. de Forges (1975: 425) reported that a nesting Eurasian Woodcock (*Scolopax rusticola*) bobbed "now and again" while feeding away from the nest. Worth (1976) gave a detailed description of body bobbing by a woodcock on a lawn in New Jersey. Severinghaus (1978: 748) said of the Eurasian Woodcock in Taiwan that "Feeding bouts were prefaced by a bobbing behavior in which the body moved (seesawed) while its head and legs remained stationary."

Four explanations of the bobbing have been advanced. Pettingill (1936: 269) believed "that bobbing is a nervous action resulting from fear or suspicion." The several observations cited above, however, were of undisturbed birds, as were mine. Further, the re-

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action of the 1978 bird to a disturbance by squirrels and rabbits was to stand at the "alert" posture (Morgenweck 1978: 50).

Worth (1976: 374) dismissed the idea of mimicry "of leaves being moved by a breeze" in his statement that "when a breeze was not blowing the woodcock's movements made it conspicuous." During one period of my observations, the movement of dead leaves in the wind was erratic and "jerky" in sharp contrast to the bird's rhythmic repetitious rocking.

Worth (1976: 375) also thought that Woodcock "may teeter and bob to mimic prevailing shadows" and asks, "Was it consequently performing some automatic act more appropriate to a shadowed dappled ambience?" All of my observations were made under overcast skies when there were no shadows. Certainly, both birds were very conspicuous as they rocked, whether, in descending order of conspicuousness, they were on snow, lawn, or in leaf litter.

Christy (1931: 14) thought that worms were "located by the sense of feeling, through its feet." I would suggest that a minute movement of earthworms close to the surface (or insects in leaf litter), in response to the slight changes in pressure from the rocking bird's foot, allows the woodcock to detect them by sight or perhaps by an infinitesimal sound. Sheldon (1967: 36) states that "When food is on the surface of the ground, there is no doubt that the visual ability of the woodcock comes into play." In my observations, and those of Christy and Glascow, the worms were in saturated soils, hence undoubtedly close to the surface.

Perhaps Pettingill's "nervous action resulting from fear or suspicion," however, or Worth's "automatic act" are applicable to the bird that rocked on the snow, where there certainly were no vulnerable earthworms or insects. Thus, the technique for detection of food may have developed into an innate movement that persists under stress conditions.

Finally, I suggest that this woodcock behavior be termed "rocking" to distinguish it from the "bobbing motions" of the Dipper (*Cinclus mexicanus*) (Peterson 1961: 173) or the "teeters up and down" of the Spotted Sandpiper (*Actitis macularia*) (Peterson 1961: 81). These terms describe quite different motions.

R. O. Morgenweck and M. W. Weller reviewed the manuscript, and the latter participated during about an hour of observation in 1978.

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