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SANDPIPER-LIKE FEEDING IN BLACK-BELLIED PLOVERS[1]

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Plovers (Charadriidae) and sandpipers (Scolopacidae) exhibit a distinct difference in foraging behavior. Plovers typically move by alternating stationary periods with short runs, either attempting prey capture by picking or stopping again at the end of a run. Sandpipers typically move steadily over the substrate and either pick prey from the surface or probe beneath it. Some sandpipers feed visually like plovers, but they do not share the plovers' run-stop-peck foraging mode. As this rather distinct difference between members of the two families is characteristic, is of importance in distant field identification, and is of interest theoretically, any deviation from the family type is worth documenting.

I observed such a deviation at Dungeness Spit, Clallam County, Washington, on 8 January 1989. About 20 Black-bellied Plovers (*Pluvialis squatarola*) foraged along the sandy beach on the bay side of the spit as the water level began to drop from the high-tide point just after midday. Small flocks of Dunlins (*Calidris alpina*) and Sanderlings (*C. alba*) fed in the same area. The sky was heavily overcast, with a slight wind and very little wave action. The temperature hovered around freezing, and it began to snow soon after these observations were made.

The plovers were watched at some length as they foraged. The birds were flushed regularly by human intruders, so I could not determine how many plovers fed by this method, but it was at least five individuals. Most birds foraged in water 1–3 cm deep, and they did so consistently by walking slowly, in the manner of a foraging sandpiper, and picking at the surface at short intervals. Dunlins foraged with them in the same way and also probed underwater, while Sanderlings foraged along the shore.

I did not assess foraging success for any of the species, but all were actively picking from the water or sand surface. I could not determine the plovers' prey items, which must have been small. Most of them foraged singly with small groups of Dunlins, and I saw no aggressive interactions between plovers. Individuals of all three species were also roosting at the same time.

The tide was sufficiently high that the plovers had little intertidal substrate exposed for foraging. Even more significant, the low temperature may have made foraging on solid substrates relatively unproductive for a visual forager by reducing prey numbers at the surface (Evans 1976, Pienkowski 1981). Thus the plovers took advantage of an alternative source of prey, in the nearshore water column and on the surface. The typical run-stop-peck foraging strategy would not be effective in water, so a plover foraging in that medium cannot use it.

The feeding behavior of Black-bellied Plovers is considered stereotyped, as described from both general accounts (Cramp and Simmons 1983) and detailed studies (Pienkowski 1983, Townshend et al. 1984). The present observation adds an unforeseen breadth of foraging behavior to the repertoire of this species, as does a recent report of kleptoparasitism (Warnock 1989). I know of no other instance of this behavior in *Pluvialis*, not surprising as the other two species tend to be upland foragers. Observers should watch for aquatic feeding and sandpiperlike feeding behavior in other shore-foraging plovers.

LITERATURE CITED

CRAMP, S., AND K.E.L. SIMMONS [EDS.]. 1983. The birds of the Western Palearctic, Vol. III. Waders to gulls. Oxford Univ. Press, Oxford.

EVANS, P. R. 1976. Energy balance and optimal foraging strategies in shorebirds: some implications for their distributions and movements in the nonbreeding season. Ardea 64:117–139.

PIENKOWSKI, M. W. 1981. How foraging plovers cope with environmental effects on invertebrate behaviour and availability, p. 179–192. *In* N. V. Jones and W. J. Wolff [eds.], Feeding and survival strategies of estuarine organisms. Marine Science. Vol. 15. Plenum Press, New York.

PIENKOWSKI, M. W. 1983. Changes in the foraging pattern of plovers in relation to environmental factors. Anim. Behav. 31:244–264.

TOWNSHEND, D. J., P. J. DUGAN and M. W. PIENKOWSKI. 1984. The unsociable plover—use of intertidal areas by Grey Plovers, p. 140–159. *In* P. R. Evans, J. D. Goss-Custard, and W. G. Hale [eds.], Coastal waders and wildfowl in winter. Cambridge Univ. Press, Cambridge.

WARNOCK, N. 1989. Piracy by Ring-billed Gulls of Dunlin. Wilson Bull. 101:96–97.

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