Dakota 58105; AND JOSEPH M. PAPP, Highway 10, House 10161, Amherst, Wisconsin 54406. (Present address of RNR: College of Natural Resources, Univ. Wisconsin–Stevens Point, Stevens Point, Wisconsin 54481.) Received 4 Nov. 1987, accepted 16 Feb. 1988.

Wilson Bull., 100(3), 1988, pp. 507-508

American Dipper nestlings parasitized by blowfly larvae and the northern fowl mite.— Blowfly larvae of the genus *Protocalliphora* (Diptera: calliphoridae) and many mites of the genus *Ornithonyssus* (Acari: Dermanyssidae) are obligatory, bloodsucking parasites of birds. The former parasitizes nestlings of nidicolous birds (especially passerines) and the latter parasitizes all ages of birds (particularly poultry). Both genera have little host specificity and have been reported from a diverse variety of birds (Bennett 1957, Hall 1965, Baker et al. 1967, Whitworth 1976, Gold and Dahlsten 1983, Garrison et al. 1986). To the best of my knowledge, this note is the first published record of either the blowfly larvae (*Protocalliphora aenea* and *P. braueri*) or the fowl mite (*Ornithonyssus sylviarum*) on the American Dipper (*Cinclus mexicanus*). However, the fowl mite has been reported from the European Dipper (*C. cinclus*) (Spitznagel 1985).

Dipper nestlings and nests were examined manually for parasites during nesting or shortly after fledging along Dinkey Creek (a 10 m wide snowmelt stream in mixed conifer forest at 1067–1081 m elevation) and its tributaries, Fresno County, California. Fly larvae and pupae were removed from nestlings or nests, respectively, and reared to maturity.

In 1984, I found a single nestling and its nest (statant cupped or dome type nest) infested with approximately 400 O. *sylviarum*. Both nymphal and adult stages (about 1 mm in length) were collected from the feathers and skin of the nestling, but most mites were in the nest.

From 1984 to 1987, I found 7 of 17, 3 of 19, 0 of 5, and 1 of 4 nests, respectively, parasitized by *P. aenea* or *P. braueri*. Specimens identified in 1984 and 1985 are *P. aenea*; 1987 specimens are *P. braueri*. Nests parasitized in 1985, 1986, and 1987 were parasitized in 1984. Two to six blowfly larvae (about 7 mm in length) per nestling were embedded subcutaneously on the head, wings, and legs. Ten to 40 puparia were found in some nests after fledging. In one case, only one of four nestlings was parasitized.

Additional unpublished records of *P. aenea* parasitizing the American Dipper include: two specimens from Utah (Whitworth 1976) and 89 males and 110 females from Gunnison County, Colorado collected by C. L. Remington in 1960 (C. W. Sabrosky, pers. comm.).

I attributed mortality of one nestling (14 days old) in 1987 to *P. braueri* parasitization. This nestling was infested with two larvae in a wing and five larvae in the head which caused limited movement of the mandible and probably impaired hearing and vision. However, other parasitized fledglings (as indicated by a swollen area with a round scab which covers the larva's emergence hole) did not appear to be seriously impeded.

The effects of *Protocalliphora* parasitism upon nestling survival range from no observed distress to death (Gold and Dahlsten 1983). Bennett (1957) and this paper attributed nestling mortality to *Protocalliphora* parasitism. Even when mortality is not observed in nestlings, the loss of blood may contribute to nestling stress and possibly reduce post-fledging survival (Bennett 1957, Whitworth 1976, Gold and Dahlsten 1983).

P. hirudo (a synonym of *P. braueri*; Sabrosky, pers. comm.) is reported as an obligatory, subcutaneous parasite, whereas other nearctic species are reported as intermittent ectoparasites (Bedard and McNeil 1979, Gold and Dahlsten 1983, Garrison et al. 1986). However, my observations indicate that *P. aenea* (and *P. braueri*), at least in the dipper, are subcutaneous parasites, and that they pupate in the dipper's nest.

Acknowledgments. – I thank C. Sabrosky for identifying *P. aenea* and *P. braueri* and for providing additional records, and T. Kono for identifying *O. sylviarum*. B. Garrison, J. Oldham, J. Single, B. Valentine, and C. Blem reviewed this note. L. Benjamin, S. Boland, and M. Stafford aided with field work. These observations were made while conducting American Dipper population ecology studies as part of the Kings River Conservation District's Dinkey Creek Hydroelectric Project.

LITERATURE CITED

- BAKER, E. W., T. M. EVANS, D. J. GOULD, W. B. HULL, AND H. L. KEEGAN. 1967. A manual of parasitic mites of medical or economic importance. Henry Tripp, Woodhaven, New York.
- BEDARD, J. AND J. N. MCNEIL. 1979. Protocalliphora hirudo (Diptera: Calliphoridae) infesting Savannah Sparrow, Passerculus sandwichensis (Aves: Fringillidae) in eastern Quebec. Can. Entomol. 111:111-112.
- BENNETT, G. F. 1957. Studies on the genus *Protocalliphora* (Diptera: Calliphoridae). Ph.D. diss., Univ. Toronto, Toronto, Ontario, Canada.
- GARRISON, B. A., C. VOUCHILAS, AND D. F. STAUFFER. 1986. Nestling Great Crested Flycatcher parasitized by larval fly (*Protocalliphora hirudo*). Wilson Bull. 98:321.
- GOLD, C. S. AND D. L. DAHLSTEN. 1983. Effects of parasitic flies (*Protocalliphora* spp.) on nestlings of Mountain and Chestnut-backed chickadees. Wilson Bull. 95:560–572.
- HALL, D. G. 1965. Calliphoridae. Pp. 922–933 in A catalog of the Diptera of America north of Mexico (A. Stone, C. W. Sabrosky, W. W. Wirth, R. H. Foote, and J. R. Coulson, eds.). Agric. Res. Serv., U.S. Dept. Agric., Washington, D.C.
- SPITZNAGEL, A. 1985. Hippoboscid flies (Hippoboscidae, Diptera) and mites (Acari) as ectoparasites of the Dipper (*Cinclus c. aquaticus*). Ecol. Birds 7:421–422.
- WHITWORTH, T. L. 1976. Host and habitat preferences, life history, pathogenicity and population regulation in species of *Protocalliphora* Hough (Diptera: Calliphoridae). Ph.D. diss., Utah State Univ., Logan, Utah.

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Wilson Bull., 100(3), 1988, pp. 508-509

Ring-necked Pheasant parasitism of Wild Turkey nests.—Ring-necked Pheasants (*Phasianus colchicus*) are facultative nest parasites of several species including Greater Prairie-Chickens (*Tympanuchus cupido*) (Simpson and Westemeier 1987), Ruffed Grouse (*Bonasa umbellus*), Northern Bobwhite (*Colinus virginianus*) (Bent 1932), Blue-winged Teal (*Anas discors*), Mallard (*A. platyrhynchos*), Northern Shoveler (*A. clypeata*) (Bennett 1936), and other Ring-necked Pheasants (Baskett 1947). Nest parasitism of Wild Turkeys (*Meleagris gallopavo*) has not been conclusively documented. I here report three instances of pheasant nest parasitism of Rio Grande Wild Turkeys (*M. g. intermedia*).

Wild Turkey habitat use was studied in the South Platte River flood plain in northeast Colorado in 1986 and 1987. Thirty-three of 35 turkey nests were in the riverbottom community, with peak nest initiation in mid-April to early May. Ring-necked Pheasants occur throughout northeastern Colorado, including riverbottom habitats, with greatest pheasant abundance in dryland wheat areas. Pheasant nest initiation normally begins in late April and early May (W. D. Snyder, pers. commun.).