

A study of hippoboscid flies on House Finches

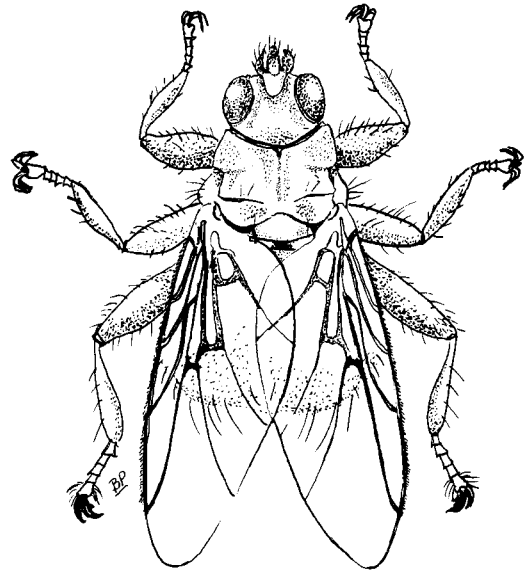
Merrill Wood

The House Finch (*Carpodacus mexicanus*), a common resident of western United States, and sold by pet shops as Hollywood Finch, was released in the New York City area in 1940, as a result of a wild bird protection act (Aldrich and Weske, 1978). In succeeding years, the population grew and dispersed, some birds reaching Pennsylvania in 1955 (Middleton, 1979) and State College, Pennsylvania in 1969. The first one observed in State College was a female, caught and banded on 26 November 1969 (recaptured 8 April 1970). By 17 November 1983 10,000 House Finches had been banded in my back-yard station in State College, Pennsylvania. This article describes the information found in studying hippoboscid flies on these birds

The hippoboscid Finch Louse-fly, *Ornithomyia fringillum* Curtis, occurs in the United States and Canada, from coast to coast, throughout northern Europe, on many avian species, chiefly on passerine birds (Bequaert, 1953). This parasite is about the size of a House Fly, appears to be very flat, and is capable of flight; some related species cannot fly. Adults of this fly were found 31 May through 31 October, and were more numerous on House Finches than on the other birds caught for banding. These flies were observed by gently disturbing the feathers with a finger. About half were caught (others escaped from the birds), preserved in alcohol, and deposited in the Frost Entomological Museum, the Pennsylvania State University.

The Finch Louse-fly was found from June into September on 14% of House Finches caught for the first time in 1980, on 12% in 1981, 14% in 1982, and 10% in 1983, average 13%; and were more numerous in July and August than in other months. The fly was observed on 92% of HY birds, on 6% of AHY-F birds, and 2% of AHY-M birds. Of 227 House Finches with this hippoboscid, I detected one fly on 80%, two flies on 16%, and three flies on 4%. Of 271 House Finches examined with flies, 63% of the flies were on the abdomen, 34% were on the rump, and 3% were on the head.

In the life cycle of the Finch Louse-fly, the adult female produces one egg, which hatches in the uterus into the larva stage, which then passes through three instars, and is laid alive and thereafter does not feed. It soon transforms into a puparium, from which the adult emerges to seek a bird host for food (blood) and shelter (Rothschild and Clay, 1952; Bequaert, 1958).



Hippoboscid fly. Sketch by Barbara Petorak.

Emergence of adults begins in May, and all adults die in or before October (before freezing weather arrives in State College, Pennsylvania). In Europe puparia were reported in nests of birds, but none has been reported in North America (Bequaert, 1953).

To learn how many hours this parasite can live when separated from its host, 132 flies were kept in separate screened jars. They lived, without feeding, from 14 to 106 hours; mean average was 55 hours. During this experiment 5 flies each produced a puparium (on 7, 8, 12, 27 August, and 21 September). In one case the puparium was found in 40 minutes. From the puparium of 21 September 1982 an adult fly of the expected species emerged on 13 June 1983. Other puparia failed to hatch or were preserved for reference. Hippoboscid flies were seen copulating on the rump of a House Finch on 17 July 1982 and on into August on other birds. It appears that many puparia must fall to the ground since the host has left the nest, and those which survive to spring produce adults which have approximately two days of life to find a host. Although careful searching was done, no puparia were found, in any month, among the feathers of House Finches.

One specimen of another hippoboscid species, *Ornithoica vinia* Walker, was collected from an HY House Finch on 30 August 1982 at this location.

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811 N. Allen St., State College, Pennsylvania 16803.

Notes on the first banding of the Cave Swallow (*Hirundo fulva*) in Arizona

Philip M. Walters

D Stotz found the first Cave Swallow in Arizona on 11 May 1979 on the University of Arizona campus, Tucson (Monson and Phillips, 1981. Annotated Checklist on the Birds of Arizona, Second Edition. The University of Arizona Press). In the spring of 1983 the first active nest was discovered at the same location, extending the known breeding range westward by 300 miles or more. The nearest known nesting sites are in New Mexico in and around Carlsbad Caverns. The first record for the species in New Mexico was in 1930. (Dr. John P. Hubbard, priv. comm.).

On 6 July 1983, Thomas Huels successfully captured the female and removed three nestlings; and on 8 July he also captured the male at the nest. All were banded and aged, and the adults sexed by the author.

The female (930-92916) was sexed on the basis of a receding brood patch, and determined to be a second year adult by an incompletely ossified skull. The skull in a number of swallow species does not completely ossify until the first spring and even into the summer and fall of the second year. (U.S. Fish and Wildlife Service and Canadian Wildlife Service, 1976, revised 1980. *North American Bird Banding Manual*, Vol. II, Bird Banding Techniques). The male (930-92923) was sexed on the basis of a partially developed cloacal protuberance (4mm) and its presence in the nest occupied by the female and the three nestlings (930-92917,8,9; all successfully fledged).

The adults showed no evidence of molt. In examining for feather wear, only the male showed slight wear of the primaries and moderate wear of the rectrices. I recorded the following measurements for the five individuals.

Weights — male 19.7 g; female 18.9 g; and the nestlings 22.1, 22.3, 20.6 g. Wing chord — male 105 mm; female 107 mm; and the nestlings 79, 76, 76 mm. Tail length — male 47 mm, female 55 mm and nestlings 36, 33, 33 mm.

5111 Soledad Primera, Tucson, Arizona 85718



Cave Swallow. 930-92917. L-U. Banded 6 July 1983.



Cave Swallow. 930-92916. SY-F, showing brood patch. Banded 6 July 1983.



Cave Swallow. 930-92923. AHY-M. Banded 8 July 1983.