# GENERAL NOTES

**A case of microphthalmia in the American Robin.**—In the spring of 1953 a pair of American Robins (*Turdus migratorius*) at East Lansing, Michigan, raised a completely blind microphthalmic nestling to nest-leaving age. Though anophthalmia (eyelessness) and microphthalmia (small eyes) have been fairly widely reported in genetical literature dealing with laboratory and domestic animals, I have not been able to find any previous record of their occurrence in strictly wild birds.

The history of this unusual individual is as follows: On June 9, 1953, Dr. William M. Seaman, of the Department of Foreign Languages at Michigan State University, called me regarding a nest of robins which his family had watched with great interest in a conifer tree beside their house. At nest-leaving time it was noted that one of the four fledglings was apparently blind, for it blundered helplessly into obstacles in its path. Twice it was rescued from a pool in the yard. Examination of the captured bird disclosed that the orbital region was depressed and completely feathered over. Otherwise the bird appeared to be of normal size and development for a young robin of nest-leaving age. It was kept captive and hand-fed for nine days, but feeding posed a problem because it could not see to take food voluntarily and the constantly bobbing and weaving head was an exasperating and often-missed target.

Post-mortem examination disclosed that concealed eyes were present. The right eyelid appeared to be sealed with an underlying opaque tissue. The eyeball within was approximately 3 mm. in diameter ($3.5 \times 2.5$), complete with lens, but about one-fourth normal size. (A full grown robin of unknown age but still in juvenal plumage, examined for comparison, had eyeballs that were 12–13 mm. in diameter.) The left eyelid could be pried open slightly. This eyeball was 6 mm. in diameter (one-half normal size), but was flattened and had no lens. Thus vision in the ordinary sense seemed out of the question, for the eyelid of the smaller eye appeared to be sealed shut, and the other eye, which possibly had openable lids, had no lens.

Various eye defects, including unilateral anophthalmia and microphthalmia, are of course frequent in animals, especially laboratory stock. These are usually non-genetic, and are due to various accidents in development. But bilateral microphthalmia is known from breeding experiments to be hereditary, resulting from homozygous recessive genes. This condition has been observed and studied in white rats and mice, guinea pigs, rabbits, and domestic pigs. A fairly complete bibliography of the mammalian literature on the subject is presented by Chase (1945. *Jour. Comp. Neurol.*, 83:121–139). Microphthalmia in birds was first studied by Jeffrey (1941. *Jour. Heredity*, 32:310–312), who reared microphthalmic Barred Plymouth Rock (*Gallus gallus*) chicks from parents of known heterozygous stock (carriers). The microphthalmic chicks, produced in an approximately 3:1 ratio, had eyes about one-half developed, but entirely concealed, at hatching time. About half the potential offspring died in the embryo; the others died soon after birth as they could not see to feed. None was reared by hand feeding.

Later, Hollander (1948. *Jour. Heredity*, 39:289–292) progeny-tested a pair of pigeons known to be carriers of microphthalmia and systematically studied the offspring, even succeeding in raising one fertile female (letter of August 7, 1954). Dr. Konrad Lorenz, who has carried out large-scale behavior studies on semi-wild ducks in Germany, tells me that microphthalmic individuals have appeared occasionally in his stock and that the young, in some cases at least, have been able to feed themselves. He suggests that ducks, probing about underwater for their food, may be less dependent on vision and employ a tactile sense in making contact with submerged foods.

In the case of the young robin here described several provocative thoughts arise. In the first place, *both* parents, though appearing normal, must have been carriers of the eye defect in order to produce an offspring with a homozygous recessive trait. The chances of two such adults meeting and mating in the wild are of course unknown. It seems remarkable also that the defective offspring lived as long as it did. It survived approximately 13 days of embryonic development (where it had only a 50 per cent chance of living), was successfully cared for during another 10 to 14 days of nest life, and left the nest with its three normal nest mates. How much longer, if at all, the parents would have cared for their blind offspring is conjecture, but it presumably would have soon fallen prey to some mishap.

Though I can find no other records of microphthalmia among wild birds, one wonders if carriers of the defective gene are not of common occurrence, but that two such adults seldom mate and produce young, or if they do the blind offspring (theoretically one-fourth of the brood) would not survive long enough to be detected. Possibly an examination of a large series of nestlings, or unhatched eggs which failed to hatch because of the semilethal gene, would disclose that the condition is more common than heretofore known.—GEORGE J. WALLACE, *Department of Zoology, Michigan State University, East Lansing, Michigan, August 1, 1955.*

**Bird Records for Utah.**—The recent accumulation of some bird records for Utah that are not listed in the two check-lists for the state (Behle, 1944. *Condor*, 46:67–87, and Woodbury, Cottam and Sugden, 1949. *Bull. Univ. Utah*, 39:1–40) has prompted us to record them in the literature. All specimens, with the exception of one in the Weber College collection, which will be so designated (WC), are in the University of Utah Museum of Zoology. All specimens unless otherwise designated were collected by the authors. We are grateful to Herbert Friedmann and Gorman M. Bond of the United States National Museum and to Alden H. Miller of the Museum of Vertebrate Zoology, University of California, for the identification of some of these specimens. Our thanks also are extended to Howard Knight of Weber College and Robert J. Erwin of Ogden, Utah, for the use of the data from the specimen at Weber College.

*Buteo jamaicensis kriderii.*—Red-tailed Hawk. Parker and Johnson in their check-list of Utah bird eggs (published privately about 1899, *fide* Woodbury, *et al.*: 36) reported this subspecies as nesting in Utah. It is now known that the breeding range of this race does not extend into Utah (Friedmann, 1950. *U. S. Nat. Mus. Bull.*, 50:258). Two specimens of this subspecies recently collected in Utah indicate this race to be a fall migrant and possibly a winter resident within the state. One immature male hawk was found dead on October 15, 1951, (WC) by Robert J. Erwin at Willard Bay, 4200 feet, Box Elder County, while the other, also an immature, was collected on August 24, 1953, by Heber H. Hall at Kings Pasture, 9000 feet, Garfield County. The subspecific status of these two birds was verified by Herbert Friedmann.

*Calypte costae.*—Costa Hummingbird. Although this bird has been observed several times in the Virgin River Valley, only two specimens are known from the state (Behle, 1943. *Bull. Univ. Utah*, 34:41). The collection of a Costa Hummingbird by Heber H. Hall in Garfield County, during the spring of 1953, represents a 100-mile northward extension of range for this species in Utah.

*Empidonax traillii traillii.*—Traill Flycatcher. In Utah the Traill Flycatcher is represented by two resident subspecies, *E. t. brewsteri*, which is found throughout most of the state, and *E. t. extimus*, which is a breeding bird of the Virgin River valley (Woodbury, *et al.*, 1949:20). The collection of a northern migrant (*E. t. traillii*) on May 25,