Avian tuberculosis in a Saw-whet Owl.—On 3 Nov. 1974, I collected a road-killed Saw-whet Owl (*Aegolius acadicus*) 9.7 km S. of Hill City, Itasca Co., Minnesota. Initial examination showed a deposit of dried blood, 15 × 8 × 4 mm, built up over the base of the beak in the feathers surrounding the nostrils. In preparing the bird as a study skin (placed in the vertebrate collection at Wayne State College, Wayne, Nebraska), I noted 2 yellowish lumps, 2 × 3 mm, at the ventral base of the tongue and in the ventral surface of the pharynx. Further dissection revealed several more nodules of a similar type beneath the skin on the back of the neck and numerous lumps up to 15 mm in diameter in the liver, stomach, mesenteries, and intestines. The lumps made up about 25% of the viscera, by weight. The bird had no fat but was not thin and appeared healthy. The stomach contained a pellet of hair, probably of *Microtus sp.*

The gastro-intestinal tract, along with the liver, was preserved in formalin and later sectioned, mounted on slides and stained. Slides were stained with Harris' hematoxylin stain, Brown-Brenn stain and Kinyoun carbolfuchsin acid-fast stain. Drs. F. D. Kapps and R. Villella, Clinical Pathologists at Mercy Medical Center, Coon Rapids, Minnesota, examined the tissue and slides and diagnosed it as avian tuberculosis, stating that they had never seen such a high concentration of acid-fast organisms in a tissue specimen. An attempt to isolate the organism on Lowenstein media was unsuccessful, probably due to the desiccation of the study skin. It was felt that the causative agent was probably of the *Mycobacterium avium*-Battey bacillus group since they are most frequently involved in tuberculosis among poultry.

I have examined about 200 road-killed birds of various species and have never before seen a blood deposit on the beak similar to that noted here. Frequently there will be some oral or nasal bleeding but it will be recognizable as such; this deposit was obviously built up over a period of time before the bird's death and is probably symptomatic of the disease. Such a deposit might serve as a warning to the uninitiated that a diseased state is indicated. This may be of some importance from a medical standpoint since cases of avian tuberculosis have been reported in humans, even though rarely, and the disease has been traced to exposure to diseased animals; also, this form of tuberculosis responds poorly to drugs (Bailey and Scott, Diagnostic Microbiology, The C. V. Mosby Co., St. Louis, 1974).

Acknowledgments go to Rita Nelson for specimen preparation and staining and to Dr. F. Donald Kapps, M.D., and Dr. Ronald Villella, M.D., for examination and diagnosis.—WAYNE J. MOLLHOFF, *907 Queen's Lane, Anoka, MN 55303.* *Accepted 27 June 1975.*

Observations at a cavity nest of the Common Grackle and an analysis of grackle nest sites.—A 16-apartment martin house, located at Rice Creek Biological Field Station, Oswego College, Oswego, N.Y., normally inhabited by Tree Swallows (*Iridoprocne bicolor*) was used exclusively by a Common Grackle (*Quiscalus quiscula*) pair in May 1974. The apartment used was 3.6 m above ground and had a western exposure which overlooked a 10.5 ha pond. Nest temperatures were monitored continuously and recorded by a Leeds and Northrup Speedomax thermocouple recorder. The thermocouple was secured under the 4 eggs at the bottom of the nest. Supplementary data on Common Grackle nesting locations were obtained from 2601 cards on file at the Nest Record Card Program at Cornell University's Laboratory of Ornithology, Ithaca, New York.

TABLE 1

SUBSTRATE TYPES* AND PERCENT OF TOTAL COMMON GRACKLE NESTS** FOUND IN EACH

Coniferous		Deciduous		Shrub		Other	
Substrate	% of Total	Substrate	% of Total	Substrate	% of Total	Substrate	% of Total
red cedar	23.7	osage orange	2.4	honeysuckle	1.9	bridge	2.4
scotch pine	3.3	willow	1.8	buttonbush	1.3	cattails	1.5
yew	3.1	elm	1.5	lilac	0.8	nest box	0.6
Norway pine	2.5	crabapple	1.5	bayberry	0.7	building	0.5
juniper	2.3	bayberry	0.9	dogwood	0.1	tower	0.2
blue spruce	1.4	hedge	0.5	not given	3.0	cavity-conifer	0.2
white pine	1.3	apple	0.3			snag	0.2
white cedar	1.0	mulberry	0.3			stump	0.2
Norway spruce	0.2	thornapple	0.2			vine	0.2
not given	23.7	oak	0.2			cavity-deciduous tree	0.04
		poplar	0.1			channel marker	0.04
		not given	13.7			under pail	0.04
						power pole	0.04
						cliff	0.04
						cornbinder support	0.04
						railroad bed	0.04

* Scientific names are not given for the substrates listed since the substrates were noted only by common names and by many different observers. Assignment of species designations might introduce some error.

** Data from 2601 Nest Record Cards at the Laboratory of Ornithology, Cornell University, Ithaca, New York.

The nest was constructed in the week immediately prior to egg-laying (May 8–15). One egg was laid each day from 16 through 19 May. The first egg laid did not hatch, the second 2 eggs hatched on 31 May, the last on 1 June. The diurnal (05:00–21:00) mean incubation constancy (Skutch, Wilson Bull. 74:115–152, 1962) during the 13-day incubation period was 68.8%, slightly lower than the 76% reported for 5 pair in northern Ohio (Maxwell, Auk 89:349–359, 1972) nesting in red cedar (*Juniperus virginiana*). The nocturnal (21:00–05:00) mean incubation constancy was 98.5%. There were nest-cooling periods of from 5 to 55 min duration on 6 different nights during the incubation period which indicated that some nocturnal activity of the incubating adult probably occurred away from the nest. During the diurnal period, the incubation constancy increased to a peak of 79% mid way through the incubation period and declined to a low of 50% on the final day of incubation. Nest temperatures during the diurnal incubation period ranged from a mean maximum of 29.5°C to a mean minimum of 21.3°C and the mean maximum-minimum environmental temperatures during the same period were 19.0°C and 9.2°C. The mean maximum-minimum nest temperatures during the nocturnal portion of the incubation period were 26.4°C and 23.9°C and the mean maximum-minimum environmental temperatures during the same period were 12.1°C and 10.0°C.

Hole-nesting grackles account for only 21 (0.8%) of 2601 nests recorded in the Nest Record Card Program. Of the 2601 nests, 62.5% were located in coniferous trees, 23.4% in deciduous trees, 7.8% in shrubs and 6.3% in other nest sites which included the hole-nesters. The mean height of 1621 nests in coniferous trees was 2.3 m, of 610 nests in deciduous trees 3.3 m, and of 211 nests in shrubs 1.8 m. The types of substrates recorded on the Nest Record Cards are summarized in Table 1.

These data show that coniferous trees, and especially the red cedar, are the most commonly used support trees. The red cedar supported at least 23.7% of all nests recorded; 8 other species of conifers, 11 deciduous species, 5 species of shrub, and 16 unusual nest support sites accounted for 35.9% of all Common Grackle nests reported on the 2601 cards analysed. The discovery of records of nests in 4 cavities in conifers, 1 cavity in a deciduous tree, and 16 nest boxes confirms our opinion that the Common Grackle is a plastic species capable of increasing its numbers by changing its nesting behavior in order to use marginal habitats and nest sites.

We wish to thank David Peakall, former Director of Cornell University's Nest Record Card Program, for his assistance to us during our visits to the lab. Thanks also to Carol Wernick for help with manuscript preparation.—George R. Maxwell II, Jean M. Nocilly, and Robert I. Shearer, *Rice Creek Biological Field Station, State Univ. College, Oswego, NY 13126.* *Accepted 1 July 1975.*

Unusual intensity of fighting in Ring-necked Ducks.—At 10:07 CST on 22 May 1969, we observed vigorous aggressive interactions between 2 male Ring-necked Ducks (*Aythya collaris*) on the open water of a 1.1 ha pothole south of Minnedosa, Manitoba. An interaction was already in progress when the birds were first perceived. The males were clutching each other's breast feathers just below the neck with their bills and hitting each other with their wings which were partly or wholly submerged. One male achieved an advantage and kept the other wholly under water. At this point, a coot (*Fulica americana*) interrupted and chased the 2 males. The male which had had the advantage in turn chased the coot for 2 to 5 sec. Meanwhile, 2 female Ring-necks within 10 m of the males did not interact with each other or with the males.

Following the brief interlude with the coot, the fight between the males resumed, initiated by the male which had earlier dominated, and lasted 3 min more. The males then separated and joined the females. The 4 birds remained close together and each male associated with one female, suggesting that they were paired. Then one male left his female and swam head to head at the other male. They pushed against, and grabbed at each other's breasts before resuming the wing-beating. As the males fought the females moved away and never displayed aggression. This interaction lasted 60 sec and ended when a pair of Pied-billed Grebes (*Podilymbus podiceps*) chased the males apart. The males rejoined the females and one grebe chased all 4 ducks from the pond. The pairs separated and flew from sight.

The wing-beating was unusual in that the wings were frequently submerged as the birds struck at each other. We are not aware of a description of wing-beating by Ring-necks, but in Mallards (*Anas platyrhynchos*) this fighting posture generally occurs above the water surface (Weidmann Z. Tierpsychol. 13:208–271, 1956.).

Ring-necks were occasionally observed in the region during the preceding 2 weeks but no nests were found on an adjacent 280 ha study area and only 3 observations of