

marten and similar sized furbearers, the tracking boxes are recommended if the plots can be run at least semimonthly.

TABLE 1. Relative Efficiency of Hair Snares and Tracking Boxes for Assessment of Pine Marten Distribution and Relative Abundance.

| | Hair snare | Tracking box |
|--|------------|--------------|
| Number of plots | 39 | 42 |
| Semimonthly periods sampled | 11 | 11 |
| Cumulative percentage of plots visited by martens..... | 7 | 34 |
| Relative density estimate (see Bamford 1970) | 0.49 | 1.03 |

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AVIAN CHOLERA IN AN AMERICAN FLAMINGO, *PHOENICOPTERUS RUBER*: A NEW HOST RECORD

During January-March 1979, an avian cholera epizootic at the south end of the Salton Sea in southern California killed an estimated 3,800 waterfowl, shorebirds, and wading birds. On 12 February, an American Flamingo carcass was found during disease surveillance and control activities by personnel of Salton

Sea National Wildlife Refuge (SSNWR). The bird was probably one of two flamingos periodically observed in the area during the previous year and was suspected to have escaped from a captive flock (L. Dean, SSNWR, pers. commun.).

The carcass was submitted to the National Wildlife Health Laboratory (NWHL), U.S. Fish and Wildlife Service, Madison, Wisconsin, for determination of cause of death. The bird had abundant deposits of subcutaneous, mesenteric, and coronary fat. Petechial hemorrhages were evident on the coronary fat, pancreas, and mucosal surface of the proventriculus and intestine. Intestinal contents were gray and mucoid. The liver appeared swollen and fatty; focal necrosis was not evident.

Pasteurella multocida, the causative organism of avian cholera, was cultured from the liver and spleen. The isolate was identified as serotype I (Heddleston's scheme) by standard agar gel diffusion test at the National Veterinary Services Laboratory, Ames, Iowa. This serotype is found commonly in waterfowl epizootics in the Pacific Flyway (NWHL, unpubl. records).

Tissues stained with hematoxylin and eosin disclosed a mild periportal inflammatory cell infiltration in the liver. Pale basophilic particulate material in tissues surrounding vessels of the liver and spleen was believed to represent bacteria; there was no evidence of an inflammatory reaction to this material. Acute vacuolar degeneration of endothelial cells of blood vessels and surrounding reticuloendothelial cells of the spleen was observed. We speculate that the vascular changes observed represent a peracute toxic response to *P. multocida*. The absence of an inflammatory response to the bacteria within the liver and spleen supports this contention.

This case is the first reported occurrence of avian cholera in a flamingo, and adds to the large number of avian species known to be susceptible to this disease (Rosen 1971, Wilson 1979). In this instance, the specimen was of presumed captive origin and outside the natural range of the species.

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REPRODUCTION OF ARCTIC GRAYLING, *THYMALLUS ARCTICUS*, IN THE LOBDELL LAKE SYSTEM, CALIFORNIA

Arctic grayling were first brought to California and held at Sisson Hatchery (now Mt. Shasta Hatchery) in 1904 (Emig 1969). Several attempts to establish this species in California waters from 1905 to 1933 resulted in success only at Grayling Lake in Yosemite National Park (Emig 1969). The resultant population