

Cnemidocoptiasis (Scaly-Leg) in a Buff-Throated Saltator (*Saltator maximus*) From Panama.—During the annual bird banding activities of the Canal Zone Program, Florida State University, Center for Tropical Studies, under Dr. Horace Loftin, I had the opportunity to observe interesting disease conditions in many of the 4492 wild birds banded, including migrants and locals. Banding in the fall of 1967 was done on three different locations: in Curundo (C. Z.), in Cerro Punta (Province Chiriqui) and in Almirante (Province Bocas del Toro). Because of a high incidence of cnemidocoptic mange in Redwinged Blackbirds (*Agelatus phoeniceus*) and Bronzed Grackles (*Quiscalus versicolor*) observed during the summer months in Canada (Kirmse, 1966a), I was very much interested to see the disease also amongst neotropical birds.

There are only four previous reports of Cnemidocoptiasis in tropical birds: an isolation, made from the Maja Finch (*Munia Maja*), one of the Malaccan weaver birds (Ehlers, 1873); a case in a Bare-eyed Robin (*Turdus nudigenis*) collected by T. Aitken in Trinidad (Fain *et al.*, 1967); in a White-breasted Nuthatch (*Sitta carolinensis umbrosa*) collected from the province of Sinaloa, Mexico on April 1, 1936; this bird breeds in Mexico, south to Oaxaca (Hardy, 1965); and in a Golden Thrush (*Turdus aurantiacus*) collected east of Kingston, Jamaica on January 14, 1947 (Turk, 1950). Both of the latter specimens were "rediscovered" in museum bird skin collections, which shows the importance of these collections not only for the biologist but also for the study of diseases (Kirmse, 1966b).

While travelling through Central and South America, I frequently observed that captive birds in pet shops and also chickens and turkeys, offered in the markets, suffered from the condition described as Scaly-leg. In Caracas (Venezuela) many Budgerigars (*Melopsittacus undulatus*) had lesions on the head (cere) and toes, and Canaries (*Serinius canaria*) were infested on the toes only and showed characteristic "Tassel-foot"-like lesions as described before in these birds (Kashula, 1950).

On October 8 and 10, 1967, respectively, 2 Buff-throated Saltator (*Saltator maximus*), family Fringillidae, were collected in mistnets along the railroad Almirante - Changuinola, 2 miles west of Almirante. Almirante is a banana exporting port of the United Fruit Company, situated on the Atlantic coast approximately 17 miles east of the border of Costa Rica. It is at sea-level and the region has a tropical rain forest climate. It is mostly covered by evergreen broad-leaf forest, broken up by sites of human activity, i.e., plantations of banana and cacao. The first specimen (WP 173) had lesions of early Cnemidocoptiasis on the shank and on the upper tarsus of the left leg, whereas the toes did not yet show any sign of the mite's activity. The second bird (WP 174) had a moderate mite infestation, as it is commonly seen in Red-winged Blackbirds, and showed considerably enlarged shanks. For comparison, a healthy bird of the same species was collected. All three birds were skinned for museum specimens and shipped to our laboratory in Canada. Two male and 13 female mites were isolated from the right leg of the moderate case (WP 174) by methods previously described (Kirmse, 1966a). When compared with the mites from other wild birds, they appeared to be the same species of the genus Cnemidocoptes. The diseased specimens have been submitted to Dr. A. Fain, Institut de Medicine Tropicale Prince Leopold, Antwerpen, Belgium, for species determination. In addition to the cnemidocoptic mites, another single mite, at present unidentified, was isolated from the lesions.

Finches, family Fringillidae, which, like Blackbirds (*Icteridae*) because of their gregarious habits, are more exposed to mite infestations than other families, frequently have been seen infested, both in the wild state and in captivity. Not much is known about the disease in tropical areas. Most of the reports on the disease are from temperate climates and involve much higher percentages of wild birds (Stewart 1963); (Kirmse, 1966a). Of the 23 Buff-throated Saltators banded in Almirante during a period of 6 weeks, only 2 had Scaly-leg disease. None of many species of other wild birds showed a similar condition. This seems interesting because at least among domestic birds, usually the disease is associated with a warm environment which seems to facilitate transmission.

A study of museum collections at the Gorgas Memorial Laboratory, Panama, and part of the bird skins at the Museo de Ciencias Naturales in Caracas and at Rancho Grande National Park at Maracay, Venezuela, in addition to more than 200 wild birds collected in mistnets at different locations in Venezuela, did not reveal any cases of Cnemidocoptiasis. However, bird-banding activities are not well developed in Latin America and at the moment confined mainly to Panama.

Expansion of bird banding to other countries in Central and South America will not only provide more knowledge on the different migration routes and wintering habitats of birds, but also information on the distribution of avian diseases throughout the hemisphere.

After completion of this study, a new host for "Scaly-Leg" disease was found in our next vicinity (Guelph, Canada). These were 2 heavily infested specimens of the Yellow Warbler (*Dendroica pelechica*) trapped in mist nets in June 1968 by the Zoology Department. The causing agent in all cases of Scaly-Leg was confirmed by Dr. A. Fain, as the mite *Knemidokoptes jamaicensis* Turk.

This work was supported in part by PHS Research Grant No. AI 06072 from the U. S. National Institute of Health to Dr. Loftin.

LITERATURE CITED

- EHLERS, E. 1873. Die Kraetzmilben der Voegel. Ein Beitrag zur Kenntnis der Sarcoptiden. *Zeitschr. f. Wissensch. Zoologie*, 23: 228-253.
- FAIN, A. and ELSEN, P. 1967. Les Acariens de la Famille Knemidocoptidae, Producteurs de Gale chez les Oiseaux. *Acto Zool. Pathol. Antverpiensia*, 45: 3-145.
- HARDY, J. W. 1965. A spectacular case of Cnemidocoptiasis (scaly-leg) in the White-breasted Nuthatch. *The Condor*, 67: 264-265.
- KASHULA, V. R. 1950. "Scaly-leg" of the Canary (*Serinus canaria* Linn.) *J. South Africa Vet. Med. Assn.* 21: 117-119.
- KIRMSE, P. 1968a. Cnemidocoptic Mite Infestations in Wild Birds. *Bull. Wildlife Disease Assn.* 2 (3): 86-99.
- KIRMSE, P. 1966b. A Note on the Value of Museum Specimens in the Study of Diseases in Wild Birds. *Ontario Bird Banding*, 2 (1): 29-30.
- STEWART, P. A. 1963. Abnormalities among Brown-headed Cowbirds trapped in Alabama. *Bird-Banding*, 34: 199-202.
- TURK, F. A. 1950. A new species of parasitic mite, (*Cnemidocoptes jamaicensis*), a causative agent of scaly-leg in *Turdus auranticaus*. *Parasitology*, 40: 60.
- PETER KIRMSE. Section of Zoonoses and Wildlife Diseases, Ontario Veterinary College, University of Guelph, Guelph, Canada.

RECENT LITERATURE

BANDING

(See also 16)

1. Some Experiences With Larger-Mesh Nets. Bruce Adams, 1968. *EBBA News*, 31: 203-205.—Use of a large-mesh net at the Island Beach Operation Recovery station: the Bleitz No. 11 net, 210 denier, 4' mesh, 7 x 42' (it resembles NEBBA type E: 210 denier, 121mm. mesh, 12 meters long, 2-shelf-recommended for grouse or the largest shorebirds such as curlew). The usefulness of most of the descriptions of catches with the larger-mesh net is limited by omission of net hours involved, or any direct comparison with nets of other meshes.

A comparison is available for one day in October, 1966, in which three of the large-mesh nets took 45 out of the 47 Yellow-shafted Flickers taken by the total