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Isolation of *Leptospira ballum* from a Western Harvest Mouse (*Reithrodontomys megalotis*)

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From April 27 to May 12, 1965, 29 mammals representing 10 species were trapped on the Gray Lodge Waterfowl Management Area, Butte County, California and examined to determine if any were *Leptospira* carriers by inoculation of kidney emulsion or urine into duplicate tubes of Fletcher's medium. These included: 7 adult male California ground squirrels (*Citellus beecheyi*), 5 adult male and 2 immature female blacktail jackrabbits (*Lepus californicus*), 2 adult female and 2 adult male feral cats (*Felis cattus*), 2 adult male striped skunks (*Mephitis mephitis*), 1 adult male red fox (*Vulpes fulva*), 1 adult male Norway rat (*Rattus norvegicus*), 1 adult female California vole (*Microtus californicus*), 1 adult female and 2 adult male house mice (*Mus musculus*), 2 adult male rabbits (*Sylvilagus sp.*), and 1 adult male Western harvest mouse (*Reithrodontomys megalotis*).

After 14 days incubation at 30° C, only the tubes of media inoculated with urine from the *Reithrodontomys* yielded leptospire. The serotype of the isolate was determined to be *Leptospira ballum* by the Veterinary Public Health La-

boratory, Communicable Disease Center, Atlanta, Georgia.

Leptospira ballum has been isolated from a number of hosts in the United States, including: Norway rat (*Rattus norvegicus*), black rat (*Rattus rattus*), and house mouse (*Mus musculus*) (Minette, 1964, Am. J. Trop. Med. Hyg., 13:826-832); hog nosed snake (*Heterodon platyrhinus*) (Ferris, et al., 1961, Cornell Vet. 51:405-419); striped skunk (*Mephitis mephitis*) (Roth, et al., 1961, Am. J. Vet. Res. 22:308-312); Virginia opossum (*Didelphis virginiana*) (Yager, et al., 1953, Proc. Soc. Exp. Biol. Med. 84:589-590); Oldfield mouse (*Peromyscus polionotus*) and hispid cotton rat (*Sigmodon hispidus*) (Brown and Gorman, 1960, Am. J. P. H., 50:682-688); gray fox (*Urocyon cinereoargenteus*), raccoon (*Procyon lotor*) and wildcat (*Felis rufa*) (McKeever, et al., 1958, Am. J. Trop. Med. Hyg., 7:646-655).

In addition, leptospirosis in a human with serologic evidence suggestive of *L. ballum* infection has been reported (Boak, et al., 1960 Calif. Med., 93:163-165). In this case, the etiologic agent was not isolated. Therefore a serotype-spe-

cific diagnosis could not be made.

This report is the first record of the isolation of *L. ballum* from the Western harvest mouse (*Reithrodontomys megalotis*). The presence of the above serotype in this rodent is not surprising, inasmuch as *L. ballum* has been recovered from 6 other rodent species in the United States. Although this serotype has been isolated from nu-

merous predators (5 mammalian and 1 reptilian) by other workers, no carrier infections were detected in any of the predators examined by the authors. As evidenced by the already extensive list of known hosts for *L. ballum*, future investigations should reveal a much wider distribution of infection in the Butte County area than indicated by this preliminary survey.

BOOK REVIEW

COCCIDIA AND COCCIDIOSIS, by L. P. Pellerdy. Akademiai Kiado, Budapest (V., Alkotmany u. 21) Hungary. 1965. 657 pp. 197 figs. \$19.60.

L. P. Pellerdy's new book, *Coccidia and Coccidiosis*, follows closely after his *Catalogue of Eimeriidea* (Protozoa; Sporozoa (1963) which was also published by the Hungarian Academy of Sciences. This volume, published in English, contains the most complete coverage of coccidia ever compended and should be a must on the shelf of every investigator of protozoa in wildlife.

The author follows the classification scheme clearly expounded by Hoare (1933) which formulates a sort of periodic table for the group. Although he cites over 1550 references he does not discuss other classification schemes which have been suggested. There are also many other omissions, particularly related to geographic and host distribution. The main shortcoming of the

book is omission of an index. However, the format of the text, arranged in phylogenetic sequence of hosts partially compensates for this lack.

The coccidia occur in a variety of hosts ranging from a single species of marine flat worm to various species of Annelida, Archipodiata, Arthropoda, Mollusca, Prochordata and Vertebrata, the greatest numbers of hosts being birds and mammals. As far as available data permit, each species is discussed, listing hosts, synonymy, morphology, habitat (most coccidia occur in the intestinal tract), pathogenicity, clinical symptoms, lesions, histology, development and therapy.

A book of this sort has long been needed. The author spent ten years in its preparation, and parasitologists will find it a useful reference for many years to come. They can thank Dr. Pellerdy for the devotion and dedication required for its completion. — Carlton M. Herman