

- DUBOIS, GEORGES, 1955. Les trématodes de Chiroptères de la collection Villy Aellen. *Rev. Suisse Zool.* 62: 469-506.
- LOOSS, A. 1896. Recherches sur la faune parasitaire de l'Égypte. Première partie. *Mém. Inst. Egypt.* 3: 1-252.
- LOOSS, A. 1907. Notizen sur Helminthologie Aegyptens. VII. Ueber einige neue Trematoden der ägyptischen Fauna. *Zbl. Bakt. Jena. Abt. 1. Orig.* 43: 478-490.
- MACY, R. W. 1953. First report of the human intestinal fluke *Heterophyes heterophyes* from a Yemen bat, *Rhinolophus clivosus acrotis*. *J. Parasit.* 39:357.
- ODHNER, T. 1911. Nordostafrikanische Trematoden grösstenteils von Weissen Nil (von der Schwedischen Zoologischen Expedition gesammelt). *Results Swed. Zool. Exp. Egypt and White Nile IV.* 170 pp.
- YAMAGUTI, S. 1958. *System Helminthum*. Vol. I. The digenetic trematodes of Vertebrates. Pt. I. 979 pp. New York, London.

### Notes on the Occurrence of *Capillaria hepatica* (Bancroft, 1893)

ROBERT RAUSCH

Arctic Health Research Center, Public Health Service, U.S. Department of Health, Education, and Welfare, Anchorage, Alaska

In the course of helminthological studies extending over several years, the writer has collected wild rodents infected with *Capillaria hepatica* (Bancroft, 1893) on four occasions. Since some new host or distributional records are involved, these findings are reported here:

1. Pocket gopher, *Thomomys talpoides tenellus* Goldman. Moran, Wyoming; June, 1948. Extensive cirrhosis of the liver. *C. hepatica* has previously been reported from this species by Dikmans (1932) (Medicine Bow Mountains, Wyoming) and by Lubinsky (1956) (Alberta, Canada).
2. Wood rat, *Neotoma cinerea fusca* True. Thirty miles northeast of Portland, Oregon (Larch Mountain); December, 1950. Extensive cirrhosis of two hepatic lobes.
3. White-footed mouse, *Peromyscus maniculatus ?macrorhinus* (Rhoads). Ketchikan, Alaska; September, 1953. Extensive cirrhosis of liver. Infection of *P. maniculatus* has been reported previously by Lubinsky (1956) (Alberta, Canada).
4. Brown lemming, *Lemmus sibiricus harroldi* Swarth. Near Mekoryuk, Nunivak Island, Alaska; June, 1955. Two lemmings infected among ten examined.

Although characteristic hepatic lesions were macroscopically visible in the lemmings, there had been very little proliferation of connective tissue. Sections disclosed discrete, scattered foci that were variously comprised of normal eggs, eggs that had calcified, mature worms containing eggs, or worms that had died and had undergone calcification. A few small areas of necrosis were observed, as were some scattered granulomatous lesions, but most of the hepatic tissue was normal in appearance. The histological characteristics of some of the nematodes indicated that they had been alive at the time the tissue was fixed. Some of the latter evidently had expelled eggs (Fig. 1), although it is generally believed that the eggs escape only when the worms disintegrate after death. The living worms were usually surrounded by a thin zone of strongly eosinophilic, but still intact, hepatic cells; few, if any, leukocytes were in such areas. These were probably infections of short duration, in view of the relatively slight involvement of the liver. Otto and von Brand (1941) found that calcification of the dead

nematodes begins after only about 19 days in laboratory rats.

The finding of infected lemmings on Nunivak Island is of interest, since *C. hepatica* has not been reported previously above about latitude 55°N. According to Skriabin *et al.* (1957; p. 406), this nematode is most widely distributed in regions having considerable humidity and high summer temperatures. Up to now the northernmost records have been from regions of a continental-type climate (Ontario and Alberta in Canada; North-Kazakhstan and Belorussia in Eurasia). However, it must now be regarded also as a member of the arctic fauna.

This nematode does not appear to be a common parasite of microtine rodents in Alaska, for, with the exception of the aforementioned lemmings, it has not been found in the many animals thus far examined. The characteristic lesions caused by *C. hepatica* are not easily overlooked; moreover, it has been the practice in this laboratory to section all hepatic lesions of an undetermined nature from such rodents.

Nunivak Island is rather remotely situated and it is unlikely that *C. hepatica* has been introduced there by man in recent times. Norway rats, often parasitized by this nematode at lower latitudes, do not occur in western Alaska between the Seward Peninsula and the Aleutian Islands.

#### LITERATURE CITED

- DIKMANS, G. 1932. The pocket gopher, *Thomomys fessor*, a new host of the nematode, *Hepaticola hepatica*. [Abstract of report before Helminth. Soc. Washington, Apr. 16.] *J. Parasit.* 19: 84.
- LUBINSKY, G. 1956. On the probable presence of parasitic liver cirrhosis in Canada. *Canad. J. Comp. Med.* 20: 457-465.
- OTTO, G. F., and T. VON BRAND. 1941. Natural and experimental calcification in *Capillaria hepatica* infection. *Amer. J. Hyg.* 34: 13-17.
- SKRIABIN, K. I., N. P. SHIKHOBALOVA, and I. V. ORLOV. 1957. *Osnovy nematodologii*. Vol. 7. Trikhotsefalidy i kapillariidy zhivotnykh i cheloveka i vyzyvayemye imi zabollevaniia. Moscow. 587 pp.

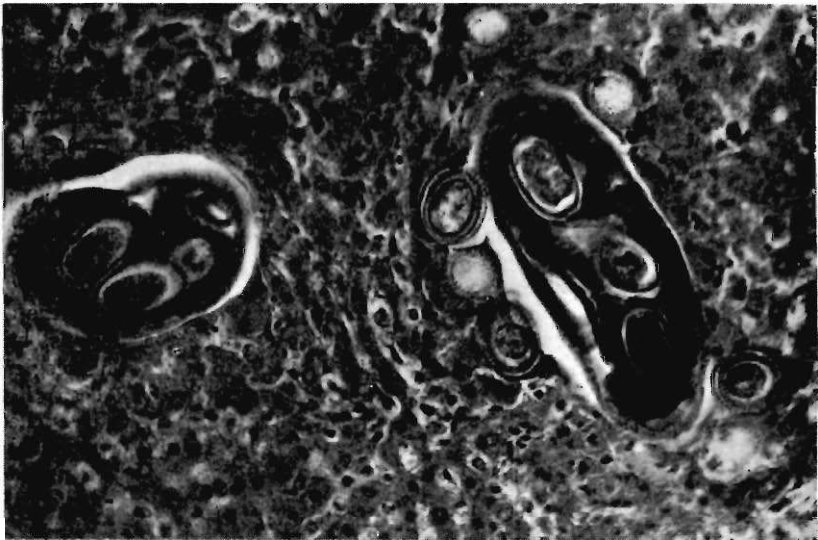


Figure 1. Section of liver from *Lemmus*, showing portions of living nematodes and free eggs. 270x.