some species prove to be more capable hosts than others.

To determine the distribution of the lung fluke and its normal host in Michigan, there were secured from trappers all over the state, during the 1930 trapping season, 1,011 carcasses of fur-bearing animals consisting of 563 minks, 308 raccoons, 109 opossums, 22 weasels, 8 muskrats and one badger. The flukes were found only in minks of which 17 per cent. carried the infection. Though raccoons are voracious eaters of crayfishes they are apparently immune to lung fluke infection. A raccoon which had been fed hundreds of cysts, during the summer of 1930, was found to be negative upon examination in the fall. An attempt is now being made to infect young raccoons. An unsuccessful attempt was made to infect an opossum following the examination of the carcasses. No sign of infection was found in 241 carcasses of wild muskrats examined in connection with a former problem though a feeding experiment demonstrated that muskrats are capable of infection. The 8 muskrats reported above were examined because they had been caught in Honey Creek, a stream in which all the *C. propinquus* examined, as well as a high percentage of the *C. robustus,* were infected. *C. propinquus* from this stream not uncommonly yield 40 metacercariae while one yielded 75.

Paragonimus occurs rarely in cats or dogs. Though thousands of cats and hundreds of dogs are examined annually in laboratories, this obvious pulmonary infection is seldom reported. The rarity of the infection in these animals is explainable on the basis of their food habits. It is generally believed that the various mammalian hosts of *Paragonimus* obtain their infection through the eating of fresh-water crabs or crayfishes but to my knowledge it has never been proven that cats or dogs eat these crustaceans. On two occasions both living and dead crayfishes were placed before the naturally infected cat from Platt following several days of starvation but she did not display the slightest interest in them. This same cat at various times eagerly ate the flesh of wild mammals and birds, even hawks and owls, though cooked food was in the cage. Another cat manifesting the same attitude toward wild food could not be induced to eat crayfishes after two days of starvation.[4] This experiment has not yet been tried upon dogs. If cats and dogs do not eat crayfishes, the only other possibility of their securing *Paragonimus* is by eating the final hosts containing recently ingested metacercariae or slightly developed worms, thus acquiring their infection secondarily. That this method of transmission is possible, at least with worms not exceeding twenty-four hours' sojourn in the final host, was demonstrated when two rats fed one hundred metacercariae twenty-four hours previously were forcibly fed to a dog. On examination two months later, four young adult worms were found in two cysts in the dog's lungs.

Though it is the consensus of opinion that nothing will eat a mink, data have been collected to prove that both cats and dogs do occasionally eat them. Accounts of personal experiences on this matter were solicited from trappers of minks. Out of thirty-three replies, three trappers stated that they had seen dogs eat minks. One trapper reported that he had seen cats eat minks while still another replied that cats do eat minks but he did not indicate that he had witnessed the act. Two other trappers volunteered the information that they had seen foxes eat minks.

When the collection of carcasses of fur-bearing animals mentioned above was being made, the fresh carcasses of minks were given to each of four cats. Two of the cats would not touch the carcasses while one ate the liver, lungs and muscles when they were removed from the carcass and given to it separately. The fourth cat, an exceptionally large animal, at the regular feeding time ate the entire thorax of a mink and might have eaten more had not the remainder been removed.

Further studies on the various aspects of the *Paragonimus* problem are under way and will be reported upon from time to time.

DONALD J. AMEEL

DEPARTMENT OF ZOOLOGY,
UNIVERSITY OF MICHIGAN

[4] Since this manuscript was submitted two of my cats, when starved, have eaten crayfishes.

BOOKS RECEIVED

BROOKS, F. T. and T. F. CHIPP, Editors. *Report of Proceedings of the Fifth International Botanical Congress, Cambridge, 1930.* Pp. xiv + 680. Illustrated. Cambridge University Press. $7.00.

CARTER, W. T. *The Soils of Texas.* Bulletin No. 431. Pp. 189. Agricultural and Mechanical College of Texas.

CHAPMAN, ROYAL N. *Animal Ecology.* Pp. x + 464. McGraw-Hill. $4.00.

DINWIDDIE, COURTNAY. *Child Health and the Community.* Pp. vii + 80. Illustrated. Commonwealth Fund. $1.00.

HALL, SIR A. D. *The Soil.* Fourth edition. Pp. xvii + 388. Illustrated. Dutton. $3.00.

LENZEN, VICTOR F. *The Nature of Physical Theory.* Pp. xii + 301. Wiley. $3.50.

PISTON, DONALD S. *Meteorology.* Pp. viii + 187. 81 figures. Blakiston. $2.50.

SKRIFTER OM SVALBARD OG ISHAVET: D. SOKOLOV and W. BODYLEVSKY: *Jura- und Kreidefaunen von Spitzbergen.* Pp. 149. Illustrated. GUSTAV SMEDAL: *Acquisition of Sovereignty over Polar Areas.* Pp. 143. B. LYNGE: *Lichens Collected on the Norwegian Scientific Expedition to Franz Josef Land, 1930.* Pp. 31. Illustrated. Jacob Dybwad, Oslo.

WOOD, CASEY A., Editor. *Introduction to the Literature of Vertebrate Zoology.* Pp. xix + 643. Illustrated. Oxford University Press. $15.00.