

A Study of the Morphology and Life Cycle of Gnathostoma vietnamicum and of the Prevalence of Infection and Renal Pathology in the Definitive host, the River Otter (Aonyx cinerea Illiger)

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OBJECTIVE: The objectives of this study are to determine morphological characters of Gnathostoma vietnamicum useful for its differentiation from other gnathostomes, to determine the prevalence of the infection, to characterize the changes in the infected urinary organs in the definitive host, and to explore the possibility of the worm's transmission to and development in other vertebrates especially food animals of man.

DESCRIPTION: River otters (Aonyx cinerea Illiger) obtained from a southern province (Nakornsrihammarat) by a local animal dealer in Bangkok were autopsied within a few days after death. All organs were examined by using an examination box and the identification of worms and their eggs found were later confirmed microscopically.

PROGRESS: Three river otters were studied. An adult female weighing 1.7 kilograms with a body length of 18 inches and a tail length of 11.5 inches was found infected with a total of 9 G. vietnamicum of which one was a larva and the others were 6 adult females and 2 adult males. The locations of the worms found were as follows: in the left kidney, 1 adult male was found in the pelvis; in the right kidney, 6 adult females and 1 adult male were found located in the pelvis and the upper part of the ureter. The measurements made on the adult worms showed a range of 31–47 mm × 1.8–2.8 mm for 5 adult females and of 35 mm and 45 × 2.0 mm for the 2 adult males (1 adult female was not measured). The cephalic hooklet rows on each head bulb were found to vary from 13–15 rows. One larva found in the lumen of the upper part of the right ureter measured 14.0 × 0.7 mm and had only 4 cephalic hooklet rows on its head. The gross pathological changes of the infected organs consisted of marked fibrous tissue thickening of the right pelvis and the upper part of the right ureter. The left kidney showed only slight fibrous tissue thickening at the pelvis. Many eggs of G. vietnamicum were found in the urine obtained from the bladder. The worms and infected kidneys were kept for further study.

The other two river otters were negative. These measured 16.5 and 17.0 inches for the body length and 10.5 and 9.5 inches for the tail length and weighed 1.3 kilograms and 1 kilogram respectively.

Previous studies on G. vietnamicum were reported in the SMRL Annual Reports for 1968 and 1969.

This study had to be suspended for some time during this reporting period due to the resignation of assistant investigators for further education. The study will be continued.

SUMMARY: A river otter obtained from Nakornsrihammarat Province, was found infected with 8 adult and 1 larva G. Vietnamicum. Two other otters from the same area were negative.

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