



HOKKAIDO UNIVERSITY

Title	STUDIES ON LARVA MIGRANS OF GENUS STRONGYLUS
Author(s)	MACHIDA, Masaaki
Citation	Japanese Journal of Veterinary Research, 13(2), 56-57
Issue Date	1965-06
Doc URL	https://hdl.handle.net/2115/1813
Type	departmental bulletin paper
File Information	KJ00002369139.pdf



were regarded as visceral lymphomatosis and some areas of the splanchnic nerves showed proliferation of the tumor cells of visceral lymphomatosis. On the other hand, virus-like particles (80~100 m μ) were observed in the cytoplasm of some of the tumor cells in cases of visceral lymphomatosis.

Hokkaido University granted the degrees of Doctor and Master of Veterinary Medicine to the following ten graduates on March 25, 1965.

The authors' summaries of the theses for the Doctors and Masters degrees are as follows:

Thesis for the Doctors degree

STUDIES ON LARVA MIGRANS OF GENUS *STRONGYLUS*

Masaaki MACHIDA*

Department of Parasitology
Faculty of Veterinary Medicine
Hokkaido University, Sapporo, Japan

(Summary of Doctor's thesis written under direction of Dr. J. YAMASHITA)

The author investigated the distribution of the larvae of three species of *Strongylus* in various tissues of guinea pigs and mice. Histological examinations were also conducted on guinea pigs infected with *S. edentatus* larvae.

In guinea pigs, the majority of orally inoculated infective larvae of the three species were excreted with the faeces. *S. vulgaris* larvae migrated very little in the host tissue. *S. equinus* larvae were found in the walls of the caecum and colon, Lnn. ileo-caecales and Lnn. mesocolici, abdominal cavity and liver. *S. edentatus* larvae were found in the same portion as above and in the lungs. In intraperitoneally inoculated mice, a very few larvae of *S. edentatus* and *S. equinus* were found in minute foci just below the liver capsule.

In guinea pigs inoculated orally with *S. edentatus* larvae, the larvae were surrounded by granulation tissue. Later the third stage larvae in the granulation tissue were absorbed, and only a very few fourth stage larvae were found in the liver, great omentum and abdominal cavity. After 60 days, no larvae were observed and the foci were gradually reduced. Most of the larvae entered the upper end of the colon through PEYER's patches. Some larvae were enclosed by granulation tissue with remarkable accumulation of eosinophiles. After 60 days, the only evidence of the larvae was a slight fibrous proliferation. The larvae penetrated

* Present address: Department of Zoology, National Science Museum, Tokyo, Japan

the liver through GLISSON's sheath and were confined within granulation tissue. Degenerations of the liver cells and hyalinization of the blood vessel walls in GLISSON's sheath were observed. After 30 days, these foci were most remarkable. Sixty days after infection, there were no larvae in the liver. The larvae migrated through the blood stream into the lungs and were surrounded by granulation tissue. The larvae were absorbed within 30 days following infection. A slight thickening of the alveolar walls and a slight eosinophilic infiltration around the perivascular connective tissue could still be recognized after 60 days. Similar foci were also established in the lymphonodi and great omentum.

STUDIES ON THE IN VITRO CULTURE OF *STRONGYLUS VULGARIS*

Kentaro YOSHIMURA*

*Department of Parasitology
Faculty of Veterinary Medicine
Hokkaido University, Sapporo, Japan*

(Summary of Doctor's thesis written under direction of Dr. J. YAMASHITA)

The author investigated in vitro culture of *Strongylus vulgaris* for the purpose of finding suitable artificial media and of determining the differences in the nutritional requirement of *S. vulgaris* and other nematodes. Both adult and larval *S. vulgaris* were used, the former obtained from the caecum and the latter from aneurysms.

Among the five solutions tested, HANKS' balanced salt solution and LOCKE's solution were found to be valuable in strongyle culture. The two solutions were therefore used as basal media in the experiments. The addition of horse serum was found to be valuable in prolonging the survival, especially of the larvae. The longest survival period (64 days) was obtained when cultured at 28°C in the basal medium with 50 volume % horse serum. *S. vulgaris* had little tolerance for an acid pH, but was almost unaffected by the pH range 6.0~8.0. The optimum pH range was 6.6~7.6. A slight increase in the survival period was observed by addition of glucose. The optimum quantities were 1.0% for the adult and 0.5% for the larvae. By addition of 3~5% of yeast extract, the survival period of adults was slightly increased, but this increase was insignificant. A small amount of suspended blood cells did not affect the survival of the adult females, but larger amounts proved deleterious. Addition of heated and autoclaved horse liver extract prolonged

* Present address: Department of Medical Zoology, 406th Medical Laboratory, U. S. Army Medical Command, Japan