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Title	EXPERIMENTAL STUDIES ON HORSE STRONGYLUS LARVAE
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Citation	Japanese Journal of Veterinary Research, 10(2), 75-75
Issue Date	1962-06
Doc URL	<a href="https://hdl.handle.net/2115/1763">https://hdl.handle.net/2115/1763</a>
Type	departmental bulletin paper
File Information	KJ00002373340.pdf



Theses for the Master's Course

## EXPERIMENTAL STUDIES ON HORSE STRONGYLUS LARVAE

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(Summary of Master's thesis directed by Dr. J. YAMASHITA)

Though it is well known that three species of the genus *Strongylus*, *S. edentatus*, *S. equinus* and *S. vulgaris*, are parasitic in the caecum and colon of horses and cosmopolitan, experimental studies about their larvae at the free-living stage have been only a few. The author carried out some investigations on the morphology, larva migrans and agglomerative phenomenon of their free-living larvae. The larvae used were obtained from the author's original egg-culture ground which was made by mixing agar with diluted horse-faeces water solution, in order to observe them at regular intervals of their development. The results are summarized as follows:

1. There are distinct differences in morphological aspects among infective larvae of the three above-named species. The comparisons of three species of larvae are made by using the method which presents the position of organs of larvae in the percentage of the distance from head to each organ to the total body length. This method has already been applied to the larvae of *Strongyloides* by TANAKA (1957); it is useful to distinguish the differences between the related species even on *Strongylus*.

2. The infective larvae of *S. vulgaris* which are inoculated orally to mice and rats, moult into the third-stage larvae in the intestine and are excreted with the faeces. A very few dead larvae are found in the mesentery. Most of the third-stage larvae have several large vacuole-like granules within the body, but it is not clear whether the presence of these granules has a relationship with the immunoreaction.

3. In the serum of horses, the infective larvae of *S. vulgaris* and *Trichonema* sp. show an agglomeration prior to SARLES' phenomenon. It occurs more or less also in the serum of cattle, swine, dog, rabbit and mouse, even in the body fluid of the silkworm and in a diluted solution of albumen. The immature larvae are attached to each other by their tails in the old water of culture ground. Such reaction without connection with SARLES' phenomenon and being positive to various media is unique in *Strongylus* and *Trichonema* larvae as far as the author is aware.