

**THESIS TITLE** : ASSOCIATION BETWEEN INTENSITY OF  
*PHANEROPSOLUS BONNEI* INFECTION AND  
PATHOGENICITY IN HAMSTER INTESTINE.

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### ABSTRACT

The research described in this thesis was designed to investigate the association between the intensity of *Phaneropsolus bonnei* infection and the pathogenicity in hamster intestine. Metacercariae of *P. bonnei* collected from dragonfly larvae were given to 3 groups of hamsters with 100 (group I), 500 (group II) and 1,000 (group III) metacercariae per animal. Five hamsters from each group were randomly sacrificed at 1, 2, 3, 4, 5 and 6 months postinfection and small intestine, liver, blood and stool were collected for pathological and parasitological studies.

The average worm recovery rate (66-70%) detected from every group of hamsters during the first 3 months posinfection was not significantly different,

but the significantly lower rate was observed in group III during the last 3 months.

The average EPG per worm and the average number of uterine eggs per worm in group I were significantly higher than those of group II and III, but there was no significant difference between group II and III. Similar pattern of result was found in the study of worm size.

*P. bonnei* adult worms in hamsters group I distributed only in the first portion of the small intestine. The worms in group II were found in the first and the second portion, whereas those in group III were recovered in every portion. However, the most worm crowded area in every group was the first portion.

The severity of pathological changes in the small intestine of infected hamsters including villous atrophy, epithelial desquamation, mucus hypersecretion, crypt hyperplasia, goblet cell hyperplasia, fibrosis and muscular hypertrophy, varied to the number of worms recovered and the duration of infection. In addition, the pathological changes were predominantly observed in the first portion of the small intestine where the worms were crowded. However, the severity of these changes was decreased in group III during the last two months due to the declination of worm load. There was no significant changes in the white blood cell differential counts and the liver histopathology among the three groups studied.

These studies revealed that the crowding effect of minute intestinal fluke, *P. bonnei*, infection influenced in the limiting of worm growth and egg production, and the intensity of infection was significantly associated with the pathogenicity of hamster intestine.