THESIS TITLE: ULTRASTRUCTURES OF THE BODY WALL OF THE *Gnathostoma spinigerum* LARVAE.

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ABSTRACT

The purpose of this research was to study the ultrastructure in the body wall of the *Gnathostoma spinigerum* from the laboratory culture using the scanning electron microscope (SEM) and transmission electron microscope (TEM), respectively.

By SEM, the first stage larvae had an irregular fold sheath and a lateral alae along the body length. The round anterior end of the body and posterior end which was gradually attenuated, were visible. Under the transmission electron microscope, the sheath contained two thin bands, the internal and external layers. The body wall comprised 3 distinct layers; the coarse granular cuticle, the syncytial hypodermis and the muscular layer.

From using the TEM, the body wall of the second stage larvae was divided into three layers. The cuticular layer consisted of the spines and epicuticular layer. The hypodermis contianed numerous mitochondria, nerves, glycogens, and the basal lamina infolding. For the cord, the two lateral cords were larger than the ventral cord and the dorsal cord. These lateral cords had mitochondria, nucleus, lipid droplets, glycogens, dense granules and an excretory canal. However, there were no excretory canals and nerves in the ventral cord and the dorsal cord. The muscular layer had two parts; the contractile part composed of the longitudinal somatic muscle cells and the noncontractile part that had large mitochondria, large nucleus and glycogens.

By SEM, the head – bulb of the early third stage larvae appeared as a Globular like structure and presented four transverse rows of a thorn - like spine. The cuticle of the body were transversally striated and the whole body were covered with transverse rows of single – pointed spines. These were dense on the anterior part of the

body and became gradually less both in number and size toward the posterior part. The subternimal anus was seen in the posterior extremity.

From using the TEM, the body wall of the second stage larvae was divided into three layers The cuticular layer had spines, papillae and the epicuticular layer. The hypodermis contianed numerous mitochondria, nerves, glycogens and the basal lamina infolding. For the cords, the two lateral cords were larger than the ventral cord and the dorsal cord. The lateral cords had mitochondria, nucleus, lipid droplets, glycogens, dense granules and an excretory canal. However, there was no nerves and excretory canal in the ventral cord and dorsal cord. The muscular layer had two parts; the contractile part composed of the longitudinal somatic muscle cells and the noncontractile part that had large mitochondria, large nucleus and glycogens.

By SEM, the head-bulb of the advanced third stage larvae also appeared a globular like structure and showed four transverse rows of claw - like spines. The cuticle of the body were transversally striated and the whole body were covered with transverse rows of single – pointed spines. These were dense on the anterior part of the body and became gradually less both in number and size toward the posterior part. The subternimal anus was seen in the posterior extremity.

From using the TEM, the body wall of the advanced third stage larvae was divided into three layers, namely; cortical, median and basal layers respectively. The cortical layer was divided into the external cortical and the internal cortical layer. The external cortical layer was the external layer of the body. The median layer was homogenous. And the basal layer was divided into two layers, outer basal and inner basal layers. Near the inner basal layer, there was the basal lamina that divided the cuticular layer from the hypodermis. The hypodermis contained numerous mitochondria, nerves, glycogens and the basal lamina infolding. For the cord, the two lateral cords was larger than the ventral cord and the dorsal cord. All the lateral cords had mitochondria, nucleus, lipid droplets, glycogens, dense granules and an excretory canal. However, there were no nerves and excretory canals in the ventral cord and the dorsal cord. The muscular layer had two parts; the contractile part composed of the longitudinal somatic muscle cells and the noncontractile part composed of large mitochondria, large nucleus and glycogens.