



## On the histological constitution of certain nematodes of the genus *Ascaris*

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*On the Histological Constitution of certain Nematodes of the Genus Ascaris.* By M. LÉON JAMMES.

Naturalists who have studied the histology of the Nematodes up to the present time have asserted that the layer named by them *granular layer* was not cellular in the adult. Leuckart, however, thought that there existed an epithelial layer formed by very small elements, situated internal to and close against the muscle-cells.

In the investigations in which I am engaged, on certain species of Nematodes, and in particular *Ascaris megalcephala*, *A. lumbricoides* (calf), and *A. suilla* (Dujardin), I have never been able to establish the existence of this layer. With the aid of the histological apparatus in use at the Faculty of Sciences of Toulouse I have long sought in the granular layer for any traces of an ectoderm. The granular layer is limited on one side by the cuticle, on the other by the muscular layer.

But, on the other hand, these researches have brought to light certain particulars relating to the granular layer: transverse sections at the horizon of the œsophagus show the continuity and structural identity of the œsophageal nervous ring and of the granular layer. Both are made up of fibrils interspersed with cells. The fibrils of the nervous ring on arriving at the body-wall bend inwards and distribute themselves between the cuticle and the muscular layer; after this the nervous system and the muscular layer affect connexions so fine that it is impossible to assign their exact limits.

Longitudinal sections at different horizons show little beds of cells in the granular layer, often disposed in several rows but never forming a continuous epithelium.

These cells present various appearances: rarely cubic, sometimes rounded, most often flattened parallel to the body-wall, they bear a variable number of prolongations. It is these prolongations which contribute to give the layer its fibrillar and felted aspect in the sections.

No intercellular substance is ever found between them.

The cells of the granular layer are stained a uniform violet by chloride of gold, whilst this reagent colours the cuticle rose and purple. The external segmentation as revealed by this infiltration does not correspond, at least in the adult, with any internal metamORIZATION.

The great similitude of structure of the granular layer and of the nervous system leads us to think that the granular layer represents the ectoderm. This latter would differ much in its constitution from the ectoderm of other Metazoa; it would be made up, in effect, of neuro-epithelial elements, and the nervous system described by authors would only be a condensation of this mass at different points in the body.

However, this idea needs corroborating by embryological researches, in which I am now engaged.—*Comptes Rendus*, July 7, 1890, p. 65.