

## PEKING BRANCH

*Peking Union Medical College, Peking, China, December, 1924.*

123 (2646)

A morphological distinction between infective larvae of  
*Ancylostoma* and *Necator*.

By RUTH M. SVENSSON.

[*From the Parasitology Laboratory of the Peking Union Medical  
College, Peking, China.*]

Infective larvæ of *Necator americanus*, *Ancylostoma duodenale* and *Ancylostoma caninum*, in which the stored food granules were reduced till the internal organs were clearly visible, were studied for morphological distinctions. The reduction of the food granules was obtained either by keeping the larvæ in soil cultures for 5 weeks and more, or by aging them artificially through increased activity. The latter method was devised by F. K. Payne (1923) and consists in burying the larvæ at the bottom of a jar filled with moist sand. The larva will migrate in great numbers up to the surface and during this time of activity rapidly use up their stored granules.

In these attenuated larvæ a difference at the point of union between the oesophagus and intestine was found to exist between larvæ of *N. americanus* on the one hand and those of *A. duodenale* and *A. caninum* on the other hand, indicating the probability of this being a generic distinction.

When *Necator* larvæ are studied under a 16 mm. objective, it appears as if the oesophagus and intestine were separated by an open space distally marked off by a definite transverse line, while in *Ancylostoma* larvæ the intestine is seen to follow as a direct continuation of the oesophagus. Careful study with an oil immersion objective reveals the fact that the lumen of the oesophagus is connected with the lumen of the intestine through a fine canal surrounded by a thickened part of the wall. This apparently functions as a sphincter. In *Ancylostoma* larvæ the inner outline of this sphincter follows as a continuous curve into the inner outline of the intestinal wall. *Necator* larvæ have the distal

part of the sphincter protruding into the lumen of the intestine in the form of a papilla separated from the intestinal wall by a groove. In high and in low focus the proximal arch of this groove appears as a transverse line at the base of the papilla. It is this line which stands out so strikingly under low magnification when the whole thickness of the larva is near focus at the same time and the optical impression of the part of the arch behind as well as the part in front of the papilla reaches the eye of the observer simultaneously. The sphincter itself being of a very low refractive index gives the impression of an open space between the transverse line mentioned above and the highly refractile distal part of the oesophagus.

#### 124 (2647)

**The specific effect of pneumococcus soluble substance on the growth of pneumococci in normal serum-leucocyte mixtures.**

By RICHARD H. P. SIA. (Introduced by O. H. Robertson).

[*From the Hospital of the Rockefeller Institute for Medical Research, New York City, and the Department of Medicine, Peking Union Medical College, Peking, China.*]

In a previous communication<sup>1</sup> a method was described for demonstrating the growth-inhibitory and bactericidal action of normal serum-leucocyte mixtures for the pneumococcus. Serum and washed leucocytes, contained in small tubes, were seeded with varying numbers of pneumococci. The tubes were then sealed with paraffine and attached to a specially devised apparatus which produced constant agitation during incubation. By means of this method, it was found that the growth of small numbers of pneumococci of low virulence, for cats, was markedly inhibited by the cat serum and leucocytes. On the other hand, small numbers of a strain virulent for rabbits, were able to grow in the rabbit serum-leucocyte mixtures.

By employing avirulent strains of pneumococci for rabbits and cats with the same method, a study has been made to determine

---

<sup>1</sup> Robertson, O. H., and Sia, R. H. P., *J. Exp. Med.*, 1924, xxxix, 219.