

PLATE II.

I. Integument.
M. Musculature.
bl. Blood-space.
aPr. Rhynchodæum.
Po. Proboscidian opening.

Ps. Proboscidian sheath-cavity.
Pr. Proboscis.
D. Intestinal cavity.
C. Brain-lobes.
Comm. Inferior brain commissure.

N. Lateral nerve-trunks.
lm, cm. Musculature of the proboscis.
ie. Epithelium of do.
P.N. Nerve-stems of do.

Figs. 1-7. *Carinina grata*, n. gen. et sp. Transverse sections and parts of sections of one of the specimens in which the proboscis was protruded and ejected from the body—drawn with the camera. The integument and what pertains to it is tinted light sepia, the nervous system yellowish, the muscular investment of the body red, the intestinal epithelium grey.

Fig. 1. Section through the tip of the head and the anterior point of meeting (*bl*) of the two lateral blood-spaces. The terminal furrow at the tip of the head (*cf.* Pl. I. figs. 1, 3) has been touched in the left lower corner of the section.

Fig. 2. Section somewhat further back in which the blood-space shows a right and a left portion, and in which the anterior wall of the rhynchodæum (*cf.* fig. 8, *aPr*) has been touched, the first indication of the opening through which the proboscis is thrust forward being also visible in this section.

Fig. 3. Section through the brain thickenings (*cc*), the ventral commissure and the præstomial blind portion of the œsophagus.

Fig. 4. Section through the mouth region. To the left the blood-space appears to be locally subdivided by radial strands of tissue.

Fig. 5. Section through the œsophageal region. The layer of longitudinal and inner circular muscle fibres are separated by a thin black line. The blood-spaces are more or less enclosed in the latter layer.

Figs. 6, 7. Two sections, still further back, of the inner circular muscular layer and what is encompassed by it. These sections show the change in shape which both the proboscidian sheath-cavity and the blood-spaces undergo in different portions of the body.

Fig. 8. *Carinina grata*, n. gen. et sp. A horizontal section through the head, brain-lobes and proboscidian insertion of the second specimen, in which the proboscis had remained attached and inverted (*cf.* Pl. III. fig. 4).

Fig. 9. *Carinina grata*, n. gen. et sp. Section further backwards (*cf.* fig. 3). (The specimen being curved this section and the following are no longer horizontal but transverse).

Fig. 10. *Carinina grata*, n. gen. et sp. Section further backwards still (*cf.* fig. 5).

Figs. 9 and 10, when compared with figs. 3 and 5, give an idea of the change effected upon the body musculature by the inversion and eversion of the proboscis. Some latitude must, however, be left for the fact of the specimens being different.

Figs. 11, 12. *Carinina grata*, n. gen. et sp. Two transverse sections through the proboscis, with the external thin homogeneous layer enclosing the outer longitudinal (brown) and inner circular (red) muscular layer. Inside the latter is the proboscidian epithelium. The two strong nerves of the proboscis are still enclosed in this epithelium, as are the nerve-trunks of the body in the integument.