would appear as if there were two other longitudinal ones, situated right and left of the proboscidian sheath (Pl. VII. fig. 1). This may perhaps also turn out to be a special feature of this species.

Certain other peculiarities observed concerning the intestinal system must for the present be passed over in silence, for want of material to verify them. It may, however, be added that the nervous plexus and the dorso-median nerve are much less conspicuous (though present) in *Eupolia australis* than in *Eupolia nipponensis*, where the plexus is in some places very thick (Pl. VII. fig. 11).

In this respect *Eupolia australis* more resembles *Eupolia giardii*, where the plexus is not so very prominent, although the dorso-median nerve (Pl. VII. fig. 4) is distinct though not massive (*cf.*, Pl. XI. fig. 12).

Eupolia nipponensis, n. sp. (Pl. I. figs. 4, 5, 10; Pl. VII. figs. 6, 11, 12).

By this name I wish henceforth to designate a species of which fragments, partly heads, partly posterior body regions, which obviously belonged to different specimens, were collected by the Challenger in the Japanese waters.

The series of sections reveal enough of common characters to deter one from assigning the fragments to different species.

The species is characterised by certain features already alluded to in the foregoing description of *Eupolia australis*. If it resembles *Eupolia giardii* in the disposition of the different layers of its integument, it differs from this species in the absence of the unusually thick circular muscular layer (Pl. VI. fig. 9) found in the œsophageal region of the latter species. The deeper layers of the integument are most conspicuously developed and vacuolated.

That its nervous plexus is more conspicuous than that of the other *Eupoliæ* was noted before, and I may add that in the available sections a very good horizontal aspect was obtained of the brain-lobes, which showed these to differ in certain minor but still easily verifiable points from those of *Eupolia giardii*. The upper lobe appears to be much more cylindrical; so does the inner fibrous core. There is no superior additional gyrus to the superior brain-lobe with special fibrous core corresponding to what is described and figured for *Eupolia giardii* (Pl. V. figs. 1, 5, 7–9; Pl. VI. fig. 8).

The connection between the posterior brain-lobe carrying the ciliated canal and the rest of the brain is, however, very intimate; they are soldered together along a very extensive surface.

As to the proboscidian sheath, one of the sections clearly demonstrates how exceedingly thin and delicate it is, and how the separation of its cavity from that of the blood lacuna is even difficult to observe.

In this as in other species of *Eupolia* the distinction in the œsophageal epithelium