

may be; but as they occur in four species of *Actinometra*, one American and three from the Eastern Archipelago, and are unknown in *Antedon*, they provide us with another potential character of the former genus which has a certain systematic value.

The presence of a terminal comb on the lower pinnules is, however, an absolutely constant character of *Actinometra*. It varies much in its development (Pl. LIII. figs. 3-6; Pl. LVI. figs. 2, 4; Pl. LXI. figs. 8-10; Pl. LXIII. figs. 5, 7; Pl. LXVI. figs. 3, 5; Pl. LXVII. figs. 2, 4; Pl. LXVIII. fig. 3), but it is always present; and this peculiarity, together with the invariable absence of sacculi on the ventral perisome, enables single arms of *Actinometra* to be recognised with the utmost certainty.

The arms and pinnules of this genus are never provided with the ambulacral skeleton which is so well developed in many species of *Antedon*; and the character which is so often associated with this, viz., the lateral flattening of the lower parts of the rays, is also entirely absent in *Actinometra*. This indeed is only to be expected, for the three groups of *Antedon*-species which present these combined characters are almost entirely limited to the abyssal and continental regions, while *Actinometra* is essentially a shallow-water genus, having only been obtained nine times at depths exceeding 200 fathoms.

In certain localities, however, e.g., Cape York and Port Curtis in Queensland, species of *Actinometra* occur with the disk very completely plated, although it may be entirely membranous in the same species elsewhere. This is especially noteworthy in the cases of *Actinometra solaris*, *Actinometra pectinata*, and *Actinometra paucicirra*; but however well plated the disk may be, there is no ambulacral skeleton on the arms and pinnules, any more than there is in those species of *Antedon* like *Antedon elegans* and *Antedon multiradiata*, which have the two outer radials united by syzygy and a thickly plated disk (Pl. IX. fig. 2; Part I., pl. lv. figs. 3, 4). The essential characters of the radials of *Actinometra* have been fully explained on pp. 24-26, and need not therefore be further discussed.

The centro-dorsal is very often only a thin flattened disk, with an imperfect double row of cirrus-sockets round its margin (Pl. IV. fig. 4a; Pl. V. figs. 1b, 1d, 2b, 2d, 2e, 2d; Pl. LII. figs. 1, 2; Pl. LIII. fig. 1, 2, 15; Pl. LXII. figs. 1, 2; Pl. LXIV. figs. 1, 3). There are not often more than about twenty functional cirri on the centro-dorsal at the same time; but this number is sometimes exceeded (Pl. LX. figs. 1-3; Pl. LXVI. fig. 4). On the other hand, the centro-dorsal is occasionally reduced to the condition of a mere flat plate without any trace of cirrus-sockets (Pl. LIV. figs. 1-8), and it is often separated from the radial pentagon by more or less definite slits (Pl. LVII. fig. 1; Pl. LXI. fig. 1; Pl. LXIII. fig. 6; Pl. LXV. figs. 1, 5, 6; Pl. LXVII. fig. 1). It has been pointed out above that the new genus *Phanogenia* was established by Lovén for a species of *Actinometra* possessing these characters; and the nature of the change which produces them has already been noticed on pp. 13-16. It need not therefore be further considered here,