

in *Actinometra pectinata*, and is sometimes almost indistinguishable, even on the dry arm.

In Müller's own description of *Actinometra solaris* he noticed that the lower joints of the second pinnule "zeichnen sich durch ihre Erweiterung aus."¹ He had made nearly the same statement in his previous description of *Asterias pectinata*;² and when re-describing the former species, from a specimen in the Hamburg Museum,³ I pointed out that in the pinnules of the fourth to seventh brachials the second and third joints are wide, with strong and expanded dorsal keels, mentioning at the same time the variations of this character which I had found in the original types of the species at Paris and Vienna. Neither of these forms had any indication of a keel on the lower joints of the first pair of pinnules; and this character, together with the larger number of cirrus-joints (over twenty), then appeared to me to constitute the special marks of *Actinometra solaris* as distinguished from *Actinometra pectinata*, with its thirteen cirrus-joints and traces of keels on the basal joints of both the first pinnules, in addition to those on the second pair.

Since examining all the "Alert" collection I find that this view will still hold good, except for one point, the occasional presence of a distinct keel on the pinnule of the third brachial in *Actinometra solaris*. I have only found it in three individuals from Billiton and in one from Port Molle. As a rule, however, there is no more indication of it than is shown in Pl. LIII. fig. 10, and the base of this pinnule, like that of its predecessor on the second brachial, is not specially marked (Pl. LIII. figs. 3, 4). On the fourth and fifth brachials, however, the case is different. The second and third, with sometimes the fourth and even the fifth joints of their pinnules, have large and prominent keels (Pl. LIII. figs. 11, 12), traces of which may generally be found on the pinnule of the sixth and sometimes on that of the seventh brachial. In *Actinometra pectinata*, on the other hand, there are never more than two joints, and sometimes only one, which has a definite keel, and this keel may appear on the pinnule of the second brachial, as in some individuals from Bohol. It is usually present on those of the third to fifth brachials, and sometimes on that of the sixth as well (Pl. LIII. figs. 17-20). But as a rule it is absent in the latter case, and I have never seen any individual with the other characters of *Actinometra pectinata*, which has any sign of a keel on the pinnule of the seventh brachial. Broadly speaking, then, we may say that there are not more than two, and sometimes only one carinate joint on the lower pinnules of *Actinometra pectinata*; that keels are generally present on the pinnules of the third, fourth, and fifth brachials, and sometimes on those of the second and sixth, but never on that of the seventh brachial. On the other hand, *Actinometra solaris* generally has two carinate joints, and occasionally sometimes three or even four, on the pinnules of the fourth, fifth, and sixth brachials, sometimes on those of the third or seventh, but never on that of the second.

¹ *Abhandl. d. k. Akad. d. Wiss. Berlin*, 1847 [1849], p. 248.

² *Archiv f. Naturgesch.*, 1843, Jahrg. ix. Bd. i. p. 134.

³ *Journ. Linn. Soc. Lond. (Zool.)*, 1882, vol. xvi. p. 515.