

forty arms. But the French authors altogether gave up Müller's method of grouping both the ten-armed and the multibrachiate Comatulæ according to the arrangement of the syzygies in the arms and their subdivisions, placing for example *Comatula brachiolata* and *Comatula solaris* with syzygies in the first and second brachials between *Comatula aleonæ* and *Comatula echinoptera*, both of which have the third brachial a syzygy. In like manner *Comatula flagellata* with no syzygies in the brachial axillaries is placed between *Comatula japonica* and *Comatula timorensis*, in both of which the axillaries are syzygial joints. While therefore Dujardin and Hupé made a distinct advance on Müller's classification in recognising two generic types of Comatulæ, their rejection of the characters on which he relied, and rightly so, as being of much systematic value was a decidedly backward step. For all subsequent work has shown that the position of the first syzygy in the free arms and the presence or absence of syzygies in the brachial axillaries are characters of very considerable systematic value, without the aid of which the classification of the hundred or more species comprised in each of the genera *Antedon* and *Actinometra* would be even more chaotic than it is.

For some fifteen years after the appearance of Dujardin and Hupé's *Histoire Naturelle*, systematic work on the Comatulæ progressed with extreme slowness, the most important step being Norman's restoration of the generic name *Antedon*, owing to its priority over both *Comatula* and *Alecto*.¹ New species were described by Böhlische, Grube, and Pourtalès; but they were never figured, and no attempt was made to assign them places in the system either of Müller or of Dujardin and Hupé. Dr. Lütken had examined from time to time a considerable number of Comatulæ which had been collected among the Pacific Islands by the agents of the Godeffroy Museum; and he arrived at the conclusion that the real distinction between *Antedon* (or *Alecto*) and *Actinometra* lies in the central or excentric position of the mouth, the number of groove trunks reaching the peristome being a character almost entirely devoid of the systematic importance attributed to it by Müller. Lütken's views were never published, and I only learnt of his holding them after myself arriving at the same conclusions; but he was good enough to inform me at the same time of a character then unknown to me, which I have since found to be of almost invariable occurrence in *Actinometra*, viz., the presence of a terminal comb on the lower pinnules (Pl. LVI. figs. 2, 4). These facts were published in my memoir on *Actinometra*,² where I also endeavoured to classify the species of the genus that I had been able to identify, by an extension of the method employed by Müller.

While recognising the systematic importance of the presence or absence of syzygies in the arms of Comatulæ, Müller made no attempt to classify the multibrachiate forms according to the number of joints between the successive brachial axillaries, though he furnished the means for doing this in his descriptions of many species, a process which

¹ *Ann. and Mag. Nat. Hist.*, 1865, ser. 3, vol. xv. p. 98.

² *Trans. Linn. Soc. Lond. (Zool.)*, ser. 2, 1877 [1879], vol. ii. pp. 18-29.