

The figure of the fossil specimen demonstrates that the form of the pereionie appendages bears a strong generic resemblance to *Synaxes*. I have not had an opportunity of examining any specimens, and gain my impressions of this genus from the published engravings. The first pair of antennæ has evidently been forced below the second pair, which is reduced in length and enlarged in diameter; the flagellum being short, broad, and multiarticulate, is suggestive of a gradual approximation to the form as it exists in the Scyllaridæ. The structure of the animal has yet, however, to be more thoroughly examined in detail before its true relation to recent Crustacea can be satisfactorily pronounced. In some of the earlier figures of *Polycheles*, the animal was represented as being blind and having a laterally compressed rostrum, but the eyes have since been demonstrated, and the supposed rostrum has been shown to be the result of inner margins of the first pair of antennæ being extended and forced upwards by lateral compression, and thus simulating the form of a narrow rostrum. Dr. Camil Heller, who has the privilege of being the earliest observer who described and figured *Polycheles*,<sup>1</sup> considers that in the general form of the body it "bears a strong resemblance to the Scyllaridæ, from which it differs essentially in the structure of the antennæ and the form of the chelæ; and corresponds with the Astacidæ only in the common possession of the "leaf-like appendage (scaphocerite) at the base of the second antennæ, and in the chelate character of the pereiopoda, but differs in all other respects."

*Polycheles*, he further says, "corresponds closely with the fossil Crustacean described by Desmarest, from the slate quarries of Solenhofen (*Eryon cuvieri*), since also in this are found a flattened carapace, and similarly-formed antennæ and pereiopoda. The hinder part of the body is much narrower than the anterior; and the leaf-like appendages" (scaphocerite) "of the second pair of antennæ are much enlarged. It forms a link between the Scyllaridæ on the one side and the Astacidæ on the other."

Dr. v. Willemoes-Suhm<sup>2</sup> says:—"Among the living Decapoda Macrura there is hardly a group with which *Willemæsia* could be said to be very closely allied. Nearest to it are undoubtedly the Scyllarinæ; but these, like all the genera of the family Palinuridæ, differ from it in the absence of the lamellar appendage of the second antennæ, and in the presence of palpi at the base of the gnathopoda, which, as we have seen, are wanting in this new genus. Nor can it, for this latter reason, be referred to the Astacidæ, with which it has in common the presence of the antennal scale."

"It is very astonishing, indeed, that among all crustaceans known to us, *Willemæsia* approaches most closely the fossil *Eyrontidæ*. If we compare, for example, our figure of *W.* [*Polycheles*] *crucifera*<sup>3</sup> with a figure of *Eryon arctiformis*, and the description "Tribu des Eryons," given by Milne-Edwards<sup>4</sup> (and probably taken especially from Desmarest's 'Crustacés Fossiles'), we find most striking resemblances between the

<sup>1</sup> Crustaceen des südlichen Europa, 1863, p. 209, pl. vii. fig. 1.

<sup>2</sup> Trans. Linn. Soc. Lond., vol. i. p. 55, 1875.

<sup>3</sup> Trans. Linn. Soc. Lond. vol. i. pl. xii. fig. 10.

<sup>4</sup> Hist. Nat. des Crust., tome ii. p. 278, Paris, 1837.