

of a specimen or figure excepting those that have been restored in which it has been determined.¹

Taken as a whole, the specimen that I have here described resembles the form of the recent *Polycheles* as nearly as it does that of the type of the ancient *Eryon*. But in the breadth of the pleon and the absence of the dorsal carina, it exhibits a condition that demonstrates it to be no very distant departure from the genus *Astacus*, to which the great chela, notably in *Cambarus simulans*, Faxon, and *Cambarus clarkii*, Bajer, bears a near and characteristic resemblance, and the likeness would be more apparent if the animal, instead of being dorsally depressed, had, like *Astacus*, a more rounded or laterally compressed form.

It appears to me that the family of the Eryonidæ was a departure under deteriorating circumstances from some marine ancestor of *Astacus*, and that the recent genera are in direct descent from the *Archæastacus* of the European Lias.

The fossil genus *Palæocarabus*, from the Glasgow and Shropshire coal measures, appears to possess characteristic forms in the several genera of *Arctus*, *Polycheles*, and to be represented most closely by the recent genus *Synaxes*, from which it seems to differ chiefly in the laterally compressed rostrum, and it is interesting to notice that, separated as these genera are in time, as widely as the period when the coal-plants were living and growing in their native soil is from that of the present day, there is very little beyond specific distinction in character separating the oldest fossil from the most recent Macrurous Crustacea of the same family, and if we are, as is but reasonable, to judge of the alteration of parts unknown from the parts that are known, there is very little variation in structure also. So that in this group of animals whatever specific changes may have successively been produced, they are small in degree and unimportant in character; and therefore we may assume that the conditions of life on the globe, so far as relates to the present class of animals, can have undergone but little change.

Geographical Distribution.—The recent genera that belong to this family are widely distributed, but all of them appear to require certain conditions of depth, temperature, and character of sea bottom.

The genus *Polycheles* has been taken in the Mediterranean, and in the Atlantic off the coast of Spain;² in the West Indies, and in the longitude of the Fiji and Kermadec

¹ In the *Quart. Journ. Geol. Soc.*, vol. xxii. pl. xxv. fig. 1, Dr. Woodward delineated "by the help of the fine examples in the cabinet of the Rev. P. B. Brodie, F.G.S., and those in the British Museum," a completely restored figure of *Eryon barrovensis* (M'Coy) in which the scaphocerite is fixed at the extremity of a peduncle that is independent of that of the antennæ. This condition not being in accordance with the anatomical structure of the Macrurous Decapoda, I am induced to think that the small pedicular plate at the extremity of the third pair of maxille is intended, of which a drawing is given at fig. 31, p. 135, in this Report, and which in some recent species extends beyond the frontal margin. It may be seen on Pl. XIX. fig. C''', which represents the under surface of the head in *Willemœsia leptodactyla*.

² Norman, On the Willemœsia group of Crustacea, *Ann. and Mag. Nat. Hist.*, ser. 5, vol. ii. p. 384, 1878.