

streams and lakes of the continents and larger islands of both the northern and southern hemispheres.

The northern genera differ in the number of their branchiæ from those of the southern, which also exhibit evidence of a divergence in descent.

Those of Europe and America possess evidence of a closer consanguinity, but are generically separated by the numerical distinction of the branchial plumes; whilst those of Eastern Europe and Western Asia differ only in specific value very considerably from those of Western Europe, those of Eastern Europe differ in external form but slightly from those of Eastern America.

Those that inhabit the rivers of South America differ in external appearance from those of the northern continent, but bear a corresponding resemblance to those that inhabit the rivers of Australia, while these latter differ widely both in appearance and structure from the New Zealand forms. The solitary species of the only genus of Madagascar differs structurally from, but corresponds externally with, those that belong to Australia.

In all the northern forms the outer margin of the dactylos is either straight or incurved, whereas in the southern genera the same part is always arched or curved outwards. It is but a small distinction, but it is one that is invariably capable of determining the northern from the southern species, and it is interesting to notice that a fossil species was recently found in the Eocene formation of North America that possesses this congenital feature peculiar to the northern forms; a circumstance that demonstrates the long and persistent character in the history of this feature.

The several species have been arranged in accordance with their general form and the number of their branchiæ into the following genera:—

Astacus in Europe and Asia.
Astucoides in Madagascar.
Astacopsis in Australia.
Cambarus in North and East America.

Cherops in Tasmania.
Engæus in Tasmania.
Paranephrops in New Zealand.
Parastacus in Australia and South America.

In looking back through past ages it would appear that the earliest macrurous forms are those that have been obtained from the coal measures of Shropshire and Glasgow, and if the illustrations given be anatomically correct, the structure of *Palæocarabus* corresponds with a Crustacean that belongs to the Trichobranchiata. The short and stunted form of the scaphocerite of the second pair of antennæ is such as is seen to exist in the Astacidea of recent periods, but the restoration of the specimen of *Palæocarabus russellianus*, as given in Salter's paper,¹ shows that the rostrum is long and laterally compressed, contrary to its character in the Astacidea, or in fact in any of the Trichobranchiata, excepting those of the family Stenopidæ.

¹ *Quart. Journ. Geol. Soc.*, vol. xix. p. 520, figs. 1, 2.