

A NEW XIPHOSURAN FROM THE TRIASSIC SEDIMENTS AT BROOKVALE, NEW SOUTH WALES.

By E. F. RIEK.

Commonwealth Scientific and Industrial Research Organization—Division of Entomology, Canberra, A.C.T.

(Plate xiii.)

Amongst the many interesting fossils obtained from the shale beds at Brookvale is an almost complete specimen of a Xiphosuran. These Brookvale sediments are generally considered to be of freshwater origin. They contain insects as well as fish, *Estheria* and *Leaia*. As Xiphosura occur in both freshwater and marine sediments this specimen throws no light on the probable nature of the sediments.

The Xiphosuran shows many interesting features, the species being considered in a new genus for which a new family is erected.

Order XIPHOSURA.

Family AUSTROLIMULIDAE, nov.

Similar to Limulidae but with the caudal three segments of the opisthosoma distinct and not consolidated.

In the only known species the opisthosoma is not produced laterally into spines and the very large genal spines are directed laterally.

Genus *Austrolimulus*, gen. nov.

Genotype *Austrolimulus fletcheri*, sp. nov.

Differing from recent *Limulus* in the structure of the opisthosoma and less so of the prosoma. Opisthosoma divided into two regions, the anterior three segments consolidated and tapering markedly caudally, the posterior three segments distinct but anchylosed and of almost equal width; segments of the opisthosoma without lateral spines or projections, except that the caudal segment is bluntly produced postero-laterally; caudal spine longer than body; postero-lateral margins of prosoma (genal area) produced laterally into very long spines.

The genus would seem to occupy a position intermediate between Belinuridae and Limulidae as, in the former family all the segments of the opisthosoma are distinct, though often anchylosed, whereas in the latter they are all consolidated.

Austrolimulus fletcheri, sp. nov.

The specimen is preserved as external and internal moulds of the dorsal surfaces of the prosoma and anterior three segments of the opisthosoma and as ventral views and moulds of the ventral surface of the caudal three segments of the opisthosoma, caudal spine and the "free cheeks" which are produced into long, laterally directed genal spines.

Prosoma wider than long (excluding the genal spines); dorsal surface not clearly preserved, more distinct on the internal mould; divided into three subequal areas by a somewhat raised carina running slightly postero-laterally to the highest point which possibly represents the spine above the eye, and then postero-mesally to the junction of the pleural groove of the opisthosoma; eye, if correctly interpreted, at the junction of the middle and caudal thirds of the prosoma; median third of prosoma divided into narrow "glabella" region, about one-quarter of the width of this portion,