

AUSTRALIAN MUSEUM SCIENTIFIC PUBLICATIONS

Riek, E. F., 1968. On the occurrence of fossil insects in the Mesozoic rocks of Western Australia. *Records of the Australian Museum* 27(16): 311–312, plate 46. [28 November 1968].

doi:10.3853/j.0067-1975.27.1968.450

ISSN 0067-1975

Published by the Australian Museum, Sydney

nature culture **discover**

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6 College Street, Sydney NSW 2010, Australia



ON THE OCCURRENCE OF FOSSIL INSECTS IN THE MESOZOIC ROCKS OF WESTERN AUSTRALIA

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Plate 46.

Manuscript received, 29th December, 1967.

SUMMARY

A new insect-bearing horizon is placed on record. A beetle elytron, the pronotum of possibly the same species of beetle, and a cockroach forewing are described. The probable age of the sediments is discussed.

A small collection of insect fossils has been made in the Hill River area of Western Australia. As additional diagnostic material has not become available, the occurrence of this new insect-bearing horizon is placed on record. The only well preserved insect remains are beetle elytra. Impressions of other insects are fragmentary and not clearly defined.

Fossil insects have been obtained from the following localities:

Hill River, 1 mile sheet.

Grid reference 192521. Four beetle elytra and pronotum of a beetle.

191523. One beetle elytron and pronotum of a beetle.
Forewing of a cockroach.

241550. One beetle elytron.

The cockroach forewing, F.52316, is too poorly preserved for specific description but it does show some diagnostic features. Sc was very short and apparently unbranched. The stem of R is almost straight after the initial basal curvature, and the branches of R are mostly simple. Such a combination of characters would place the species in the Mesoblattinidae and possibly in the genus *Austroblatulla*, described from the Triassic of Denmark Hill, Queensland. The Mesoblattinidae have a range from late Paleozoic to Jurassic.

As cockroaches are not known to occur in the Australian Permian, although other insect remains are common, a Triassic age seems most probable for the stratum on the basis of this one fossil.

Beetles occur first in Australia in the Upper Permian of Belmont, New South Wales, but are not common until the Triassic. As elytra are not one of the most diagnostic characters used in the classification of beetles, the classification of fossil elytra is rather arbitrary. One well preserved elytron from locality 191523 is compared with that of a species, placed in the genus *Mesothoris*, from the Triassic of Denmark Hill, Queensland. A well preserved pronotum is considered to be another part of the same fossil species.

This beetle elytron supports a probable Triassic age for the sediments but more diagnostic fossils are necessary for confirmation of this age determination.

Order	Coleoptera
Family?	Tenebrionidae
Genus	<i>Mesothoris</i> Tillyard.

The genus was erected for a Triassic elytron from the Denmark Hill beds. Tillyard (1916: 23) placed the genus in the Cerambycidae and compared it with the Recent *Thoris*. He also compared it with *Omma* (Cupedidae). Dunstan (1923: 58), after an examination of additional material which he referred to the genus, considered that it had no affinity with *Thoris* (nor with *Omma*).

Comparison with other Recent beetles shows that there is a greater similarity between these Triassic fossils and the family Tenebrionidae. This correlation is strengthened by evidence derived from this Western Australian species.

***Mesothoris westraliensis* sp. nov.**

Holotype: elytron F.52315, in the Australian Museum, Sydney.

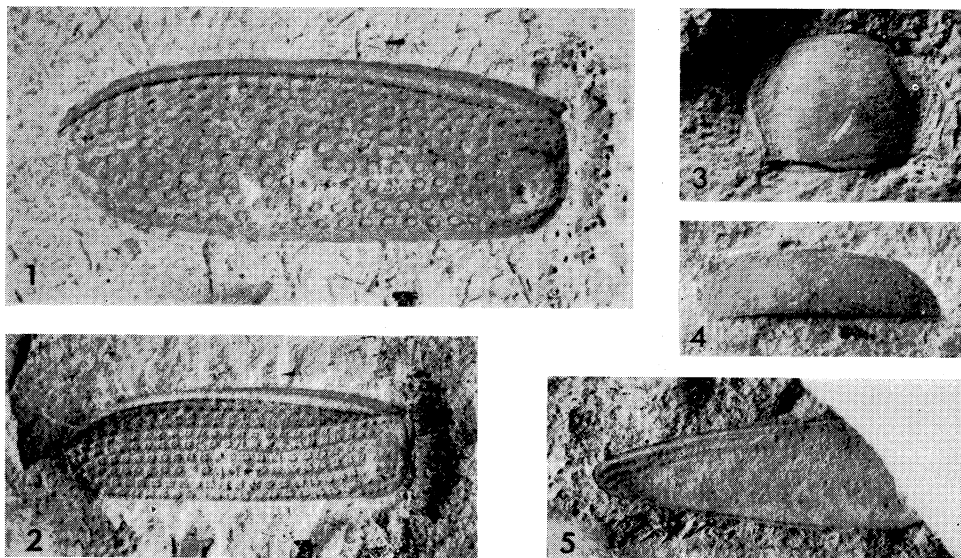
Locality and horizon: Hill River, 1 mile sheet, grid reference 191523, probable Triassic strata.

Elytron. Length 7 mm, greatest width 2.3 mm, width at base 1.7 mm; apex not fully preserved; surface entirely sculptured, sculpture formed by the intersection of nine or ten broad, flat longitudinal ridges with similarly spaced transverse ridges, forming an areolate pattern, the areolae rather square and about one and a half times as wide as the flattened ridges. The transverse ridges are somewhat stepped across the elytron. Inflexed margin of elytron flattened in preservation and clearly visible to apex, finely ornamented, with a distinct submarginal groove over the basal half, its basal angle acute, 0.4 mm wide towards base. The slight widening of the elytron in the middle is probably due to a flattening of this more convex portion. The humeral angle is distinct but not very strongly developed, and the anal notch is very small. Although not fully preserved, the apex is rather acute.

The tentative placement of this fossil in the Tenebrionidae is supported by the presence of a coleopteran pronotum F.52313 in strata from a closely adjoining locality. This pronotum is 3.8 mm across at its caudal margin. Such a size corresponds very well with an elytron 1.7 mm wide at its base. As the other beetle elytra from this deposit are very much smaller it is not unreasonable to assume specific association of these two fossils. The pronotum is strongly convex from side to side and slightly so from anterior to posterior border. Close to the lateral margins there is some evidence of compression wrinkling which, at first sight, gives the impression of ornamentation. The pronotum is otherwise smooth. The lateral margins are strongly convex and the caudal margin is transverse. The postero-lateral angles are acutely produced.

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Figures 1-2: *Mesothoris westraliensis* sp. nov. Holotype elytron. F.52315. 1, X10. 2, X7.
Reversed lighting

Figure 3: ? *Mesothoris westraliensis*. F.52313. Pronotum X7.

Figure 4: Beetle elytron. indet. F.52314. X7.

Figure 5: Beetle elytron. indet. F.52317. X7.