

## THE ORDOVICIAN TRILOBITE GENUS *TIRESIAS* M'COY, 1846

by W. T. DEAN

ABSTRACT. The trilobite *Tiresias* M'Coy is revised and redescribed from topotype material. The genus, assigned here to the family Isocolidae, is held to be a probable synonym of the North American genus *Holdenia* Cooper.

IN his well-known pioneer work on the Silurian (*sensu lato*, including Ordovician) fossils of Ireland, M'Coy (1846, p. 43) described a new trilobite genus *Tiresias*, founded on a new species *Tiresias insculptus* from the Upper Ordovician limestone of the Chair of Kildare, where it was said to be very rare. Both genus and species were adequately diagnosed and described, and were illustrated by a rather indifferent, but nevertheless identifiable, drawing of a single cranidium with median length about 7 mm. Since that time, few references have been made to *Tiresias*. Salter (1853, p. 4), in introducing and discussing *Cyphoniscus socialis*, also from the Chair of Kildare, noted the latter species' resemblance to *Tiresias* and suggested that the two might prove eventually to be congeneric. Reed (1896), in describing the fauna of the Keisley Limestone, recorded one specimen of *Tiresias* from Keisley and assigned the genus to the Trinucleidae, believing it to be allied to *Ampyx*. Later the same year, in their paper dealing with the geology of the Kildare Inlier, Reynolds and Gardiner (1896, p. 592) listed *Tiresias insculptus* from only one horizon, which they called 'Band A', at the base of the Chair of Kildare Limestone, and this record has since been perpetuated by Harper (1948, p. 58). Generally speaking, however, the names of both genus and species have fallen into disuse, and *Tiresias* is not included in the recently published Trilobite Volume of the *Treatise on Invertebrate Paleontology*.

Dr. J. S. Jackson of the National Museum of Ireland informs me that M'Coy's holotype is not present in the collections there, and inquiries at other institutions have resulted in the finding of only three other specimens of the species. One of these, from Kildare, is the external mould of an incomplete cranidium in the Gardiner Collection at the Sedgwick Museum, Cambridge, whilst another from the same locality is an almost complete cranidium, about 6 mm. long, in the Geological Survey and Museum, London. The second specimen forms part of an old collection of material which served as the basis for Salter's original description of *Cyphoniscus socialis*, and occurs on the same block of limestone as the lectotype of the latter species. The two specimens have been made available to me by Mr. A. G. Brighton and Mr. J. D. D. Smith, to whom I extend my thanks for their help. A single cranidium from the Keisley Limestone, in the Harkness Collection at Carlisle Museum, has been loaned by Mr. R. Hogg. There seems little doubt that *Tiresias* is an extremely uncommon trilobite in Britain, though possibly it has been mistaken at times for the superficially similar isocolid genus *Cyphoniscus*. In view of the fact that M'Coy's holotype cannot be said to be definitely lost or destroyed it is not proposed to designate a neotype here, and the following account

[*Palaeontology*, Vol. 5, Part 2, 1962, pp. 340-3, pl. 49.]

is founded on the two topotypes mentioned earlier. Prof. W. F. Whittard has kindly read and criticized this manuscript.

## SYSTEMATIC DESCRIPTION

Family ISOCOLIDAE Angelin, 1854

Genus *TIRESIAS* M'Coy, 1846*Tiresias* M'Coy, 1846, p. 43.? *Holdenia* B. N. Cooper, 1953, p. 9.*Type species. Tiresias insculptus* M'Coy, 1846, by original designation.

*Diagnosis.* Isocolid trilobite with elongated semi-elliptical cranidium. Prominent, convex glabella expands forwards, bounded laterally and frontally by single, well-defined, continuous furrow representing the conjoined axial and preglabellar furrows. Glabellar furrows almost absent, represented by two or three pairs of poorly defined lateral depressions. Fixigenae quadrant-shaped, set lower than glabella and continuous frontally with preglabellar field. Genal angles prolonged backwards slightly. Presence of eyes uncertain as no palpebral lobes present, though cranial margin indented anterolaterally. Surface of test ornamented by raised anastomosing lines forming Bertillon pattern.

*Tiresias insculptus* M'Coy

Plate 49, figs. 1-8

1846 *Tiresias insculptus* M'Coy, p. 43, pl. 4, fig. 1.1853 *Tiresias insculptus* M'Coy, Salter, p. 4.1896 *Tiresias insculptus* M'Coy, Reed, pp. 408, 410.1896 *Tiresias insculptus* M'Coy, Reynolds and Gardiner, p. 592.1948 *Tiresias insculptus* M'Coy, Harper, p. 58.

*Description.* Cranidium is roughly semi-elliptical in plan, longer than broad, markedly convex both longitudinally and transversely. Glabella is tumid, sub-oval in plan, median length about 1.2 times the maximum breadth. Glabella is relatively narrow at occipital furrow, but expands forwards rapidly, both vertically and transversely, standing high above the remainder of the cranidium and attaining its maximum dimensions just forward of centre, where the breadth is about 1.7 times the basal breadth. Sides of glabella then converge frontally to give a well-rounded, swollen, frontal glabellar lobe which almost overhangs the preglabellar field. Glabella of the most complete figured specimen (Plate 49, fig. 8) shows only faint traces of glabellar furrows. Another specimen, an external mould figured here as a latex cast (Plate 49, fig. 3), indicates the presence of three pairs of glabellar furrows. Latter are represented by poorly defined, slightly depressed,

## EXPLANATION OF PLATE 49

Figs. 1-8. *Tiresias insculptus* M'Coy. Figs. 1-4, 6, 8, Ashgill Series, Chair of Kildare Limestone, Kildare, Eire. Figs. 1, 2, 4, 6, Geological Survey and Museum 35535, an almost complete cranidium with most of the test preserved.  $\times 9$ . Fig. 8, same specimen.  $\times 17$ . Fig. 3, Sedgwick Museum, A. 13931, latex cast from external mould.  $\times 13$ . Figs. 5, 7, Ashgill Series, Keisley Limestone, Keisley, Westmorland. Harkness Collection, Carlisle Museum, an incomplete cranidium with part of test intact.  $\times 3.5$ . Photographs by the writer.

oval-shaped areas which, unlike the remainder of the glabellar test, are completely smooth. First glabellar furrows are sited opposite the mid-point of the glabella, and extend adaxially and slightly backwards for a short distance from just inside the axial furrows. Second and third pairs of glabellar furrows are grouped close together, roughly mid-way between the first glabellar furrows and the occipital furrow. Axial furrows broad, well defined, diverging forwards for rather more than half their length and then curving forwards and inwards to encompass the swollen, frontal glabellar lobe, in front of which they unite with the undifferentiated preglabellar furrow. Preglabellar field, analogous to what Whittington (1956, p. 1194) has called the frontal area, is narrow (*sag.*) and steeply declined in front of the glabella. Occipital furrow is well defined, moderately deep, transversely straight, delimiting an occipital ring which is uniformly broad (*sag.*), longitudinally flat and strongly convex transversely: the occipital ring is not known in its entirety, but the most complete specimen, although partly broken, shows a suggestion of a poorly defined, median tubercle. Pleurooccipital furrow is deep and transversely straight for the most part, in line with the occipital furrow, but becomes shallower distally, at the same time curving forwards slightly and dying-out without attaining the lateral margins. Posterior border is narrow (*exsag.*) and transversely straight for half its length (*tr.*), after which it is turned down through almost a right angle and expands towards the genal angles which are produced backwards to form rounded genal prolongations, moderate in size and almost spatulate in plan. Fixigenae are roughly quadrant-shaped, narrowing frontally where they unite with the preglabellar field. Lateral margins of the fixigenae are smoothly curved, each with a small indentation situated anterolaterally, and the general appearance is highly suggestive of a cephalic suture. No palpebral lobes are developed, but it is possible that the anterolateral indentations mentioned above may mark the position of eyes. With the exception of the axial, pleurooccipital, and glabellar furrows already described, the entire dorsal surface of the test is covered with thin, raised, anastomosing ridges forming a conspicuous Bertillon pattern. The ridges on the fixigenae and posterior border are subparallel to the lateral margins and concentric about the proximal posterior angles, whilst those of the glabella and occipital ring are concentric about a centre situated medially a short distance in front of the occipital furrow.

Librigenae, hypostoma, thorax, and pygidium are as yet unknown.

#### DISCUSSION

Perhaps the most interesting feature of the cranium of *Tiresias insculptus* is its striking similarity to that of the North American isocolid trilobite *Holdenia typa*, described originally by Cooper (1953, p. 9, pl. 2, figs. 11-14) and since redescribed by Whittington (1956, p. 1197). The two cranidia are almost indistinguishable, but *T. insculptus* may perhaps be separated by its somewhat more swollen glabella, slightly wider (*sag.*) preglabellar field, and narrower fixigenae, though insufficient material is available to indicate whether these differences might be accounted for within the limits of variation in the species. A final decision on the identity of *Tiresias* and *Holdenia* must await the discovery of the pygidium of *Tiresias*.

*Holdenia typa* was described from the Effna Limestone of Virginia, an horizon which is of early Black River age and therefore probably equivalent to part of the lowest Caradoc Series (Twenhofel *et al.*, 1954, chart 2). *Tiresias insculptus* is undoubtedly of

Ashgill age but, like *Holdenia* and other Isocolidae, it has been found only in a reef limestone facies. Certain other trilobite genera, including Raphiophoridae and Pterygomotopidae, are represented in the earlier Caradoc Series of both eastern North America and the Scots-Irish area, but do not appear in the Anglo-Welsh area until Ashgill or late Caradoc times, and *Tiresias* may well be an American genus which has behaved similarly.

## REFERENCES

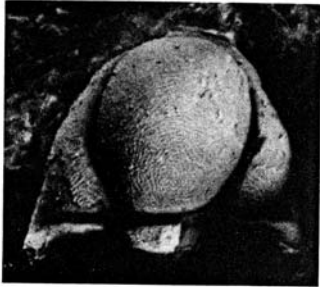
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Manuscript received 11 October 1961



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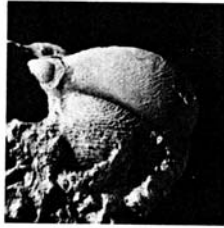
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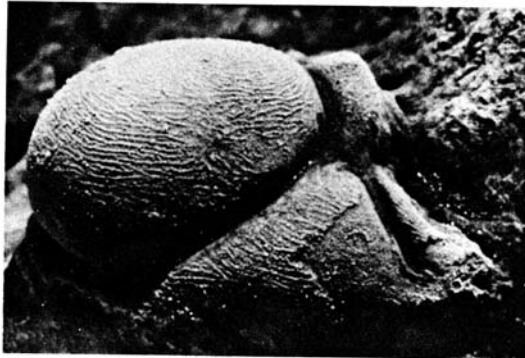
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DEAN, *Tiresias*