

## AN EARLY LATE CAMBRIAN FAUNA FROM TOM CREEK, WESTERN TASMANIA

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(with one plate)

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A small, poorly preserved, but stratigraphically significant fauna from Tom Creek in western Tasmania contains the trilobites *Agnostardis* and *Aulacodigma* which indicate correlation with the upper part of the Brewery Junction Formation in the Dundas area and an age of very early Late Cambrian Glyptagnostus stolidotus Zone.

**Key Words:** trilobites, Late Cambrian, Tasmania.

### INTRODUCTION

A very early Late Cambrian fauna from Tom Creek, western Tasmania, is small and poorly preserved but stratigraphically important in that it is the only Cambrian fauna in the Dundas Group of the Farrell Rivulet area on which a reliable date can be obtained. The Cambrian geology of this area is being revised (Corbett & Lees, in prep.).

A. B. Gulline discovered the fossils figured herein in a cleaved, grey, laminated siltstone in Tom Creek near lat. 41° 55.5'S, long. 145° 26.3'E (Blissett 1962). The position of the fossil locality is shown on the Zeehan 1-mile geological map sheet (Blissett 1962). Gatehouse (1961) considered the fossils to be late Middle or early Late Cambrian age. The only other record of the Tom Creek fauna is that in Banks (1982).

The known fauna is limited to one agnostoid cephalon, two agnostoid pygidia, an essentially complete small polymeroid trilobite, the cephalon of a polymeroid and some polymeroid fragments. All specimens are too poorly preserved to warrant formal description. All the agnostoids are tentatively placed in the one species of *Agnostardis*. The two identifiable polymeroid specimens belong in the same species of *Aulacodigma*. In the Georgina Basin of northern Australia both these genera are confined to the very early Late Cambrian *Glyptagnostus stolidotus* Zone (Öpik 1963, 1967), which age is thus suggested for the Tom Creek fauna. This fauna is hence a correlate of the faunas found in the upper 50 m of the Brewery Junction Formation in the Dundas Group type section at Dundas (Jago 1979). All catalogue numbers refer to the collection of the Geology Department, University of Tasmania.

### PALAEONTOLOGY

Class TRILOBITA Walch 1771  
Order MIOMERA Jaekel 1909  
Superfamily AGNOSTACEA M'Coy 1849  
Family DIPLAGNOSTIDAE Whitehouse 1936  
Genus *AGNOSTARDIS* Öpik 1963

*Agnostardis* sp.  
(Plate 1, figs 1-3)

One cephalon and two pygidia are available. These specimens are placed with some hesitation in a single species of *Agnostardis*. The glabella of the cephalon is obscured. The preglabellar median furrow is only faintly developed in contrast to those in most of the cephalons of *Agnostardis* figured in Öpik (1963, 1967). However, it is similar to that shown by the cephalon of *Agnostardis* figured by Öpik (1967, pl.41, fig.9a).

Although the two agnostoid pygidia figured herein are tentatively referred to a single species of *Agnostardis*, there appear to be considerable differences in the shape of the pygidial axes. However, the pygidia of *Agnostardis amplinatus*, illustrated by Öpik (1963, pl.3), show considerable intraspecific variation as well as having different appearances depending on the preservation.

Unlike all illustrated pygidia of *Agnostardis amplinatus* there does not appear to be a well-developed post-axial median furrow in UT54926 (pl.1, fig.3). The pygidial axis in this specimen is much narrower than that in specimen UT54928 (pl.1, fig.2). The junction of the middle axial segment and the posterior bulb in specimen UT54928 is placed further back than in any other illustrated specimen of *Agnostardis* although there does appear to be considerable variation in the

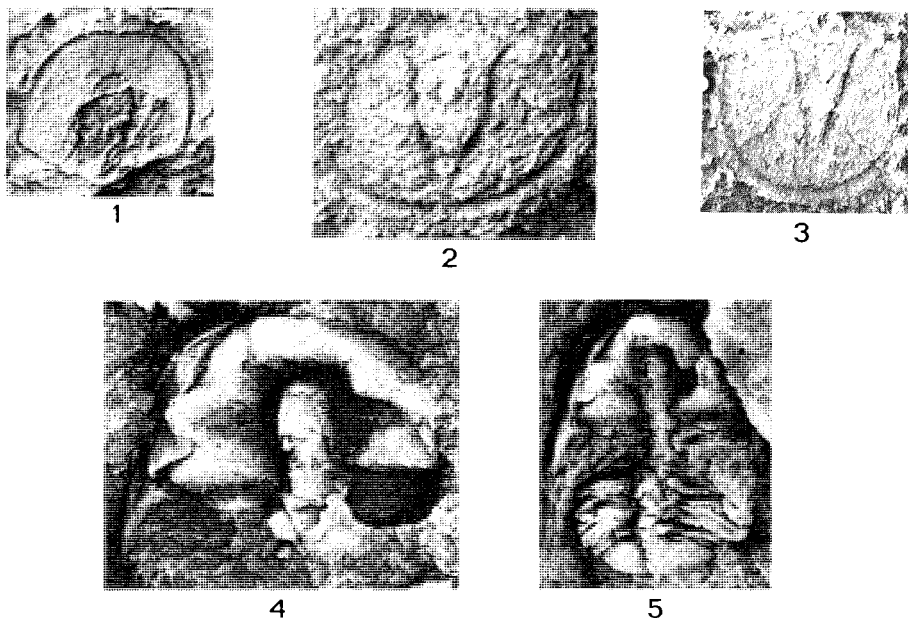


PLATE 1

Figs 1-3: *Agnostardis* sp.  
 1. UT54821, internal mould of cephalon, x8  
 2. UT54928, external mould of pygidium, x20  
 3. UT54926, internal mould of pygidium, x8.5  
 Figs 4-5: *Aulacodigma* sp.  
 4. UT54929, external mould of cranidium and librigena, x10  
 5. UT54929, external mould of almost complete specimen, x7.

All specimens were whitened with magnesium oxide prior to photography. The external moulds are silicone rubber.

position of this point in *Agnostardis amplinatus* (see Öpik 1963, pl.3; Öpik 1967, pl.67). It should also be noted that UT54928 is much smaller than UT54926 and has been distorted in a different manner.

Order PTYCHOPARIIDA Swinnerton 1915  
 Family AULACODIGMATIDAE Öpik 1967  
 Genus *AULACODIGMA* Öpik 1967

*Aulacodigma* sp.  
 (Plate 1, figs 4,5)

Two poorly preserved external moulds are available. One of these comprises the cranidium and one librigena, parts of five thoracic segments and the pygidium; the other specimen comprises most of a cranidium and a librigena. As far as can be seen from the available material, these specimens are close to *Aulacodigma quasispinale* Öpik, the type species of the genus as illustrated by Öpik (1967).

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