

Revision of the Silurian and Early Devonian Chonetoidean Brachiopods of Southeastern Australia

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ABSTRACT. Thirty-eight species of ostensibly chonetoid brachiopods (some under open nomenclature) have been described from the Silurian and Lower Devonian rocks of southeastern Australia, although most are neither widely distributed nor abundant. Descriptions of many have been based on inadequate material, and in one significant case (*Johnsonetes australis*) the original material is lost, necessitating selection of a neotype to resolve formally the identity of that species in comparison with the similar species *J. culleni*. In this systematic revision the known species are redescribed and where possible their generic positions and possible synonymy determined; three are rejected from the Chonetoidea.

Silurian taxa include *Strophochonetes melbournensis*, *S. kemezysi* n.sp. and “*Protochonetes*” cf. *minimus*. Early Devonian faunas are much more diverse. Lochkovian species are *S.?* *savagei* n.sp., *S.?* *psiloplia*, “*S.*” *cresswelli*, *Parachonetes robustus*, and the poorly known “*Chonetes*” *ruddockensis*. “*Strophochonetes*” *cresswelli* and *P. robustus* are also found in the Pragian, along with *Asymmetrochonetes?* *planata*, *Parachonetes baragwanathi*, *P.?* *bowieae*, *P.?* *suavis*, *Septachonetes micrus*, “*Chonetes*” *taggertyensis* and “*Chonetes*” *foedus*. The youngest species in the region are Emsian: *Johnsonetes australis*, *J. culleni*, *J. latus*, *Septachonetes melanus*, *Parachonetes buechanensis*, *P. spooneri*, *P. konincki* and *P. flemingi*. No species is currently known to be sufficiently widely distributed geographically and sufficiently restricted stratigraphically to be of clear biostratigraphic use.

Several former species are junior synonyms. *Strophochonetes melbournensis* includes *Chonetes infantilis*, and *Johnsonetes australis* includes *Chonetes teicherti*. *Parachonetes robustus*, the name-bearer for Gill’s “*robustus gens*”, certainly includes both *Chonetes killarensis* and *C. productoida*. It is likely that the two other species of this group, *P. baragwanathi* and *P. buechanensis*, are also synonymous but, for lack of appropriate specimens, this cannot be conclusively established.

The Cambrian *Chonetes concinna*, subsequently (and wrongly) referred to *Eoorthis*, is refigured and confirmed as not being a chonetoidean. *Chonetes gaskini* is shown to be the ventral valve of a spiriferid, and *Chonetes bipartita* has already been assigned to the sowerbyelloid *Plectodonta*.

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The superfamily Chonetoidea is a group of distinctive Palaeozoic spiny brachiopods, in which the spines are restricted to the posterior margin of only one valve. Its representatives are distributed worldwide, and have been

shown to be useful environmental and palaeobiogeographic indicators at least in the Silurian and Devonian (Racheboeuf, 1990). Although not a major component of the brachiopod faunas described from the Silurian and Devonian of