

APPARATUS COMPOSITION AND STRUCTURE OF THE PENNSYLVANIAN
CONODONT GENUS *GONDOLELLA* BASED ON ASSEMBLAGES OF
GONDOLELLA SP. NOV. FROM THE DESMOINESIAN OF
NORTHWESTERN ILLINOIS, U.S.A.

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Gondolella sp. nov. assemblages recovered from
Desmoinesian black shales in Illinois have permitted a
reassessment of the apparatus composition and structure
of the Pennsylvanian conodont genus *Gondolella*.
Reanalysis confirms that the initial apparatus
reconstruction of the genus was incomplete and supports
later reconstructions based on discrete elements.

Gondolella sp. nov. is the first species of a
biostratigraphically important conodont genus to be
placed within a known phylogeny and to be based
primarily on assemblage material. Despite probably
being fecal, the 43 assemblages preserve remarkably good
information. The *Gondolella* apparatus was linear and
contained 15 elements--five pairs each of Pa, Pb, M₁, M₂
and M₃ elements, two pairs of Sc elements and one
unpaired Sa element. The seven elements are
morphologically distinct and are dominated by their
anterior process(es); they either have abbreviated
posterior processes or lack them altogether. The
element composition of the genus is equally distinct
because several of the normal S elements have been
replaced by a symmetry transition of paired M₁, M₂ and
M₃ elements. Finally, the apparatus structure, the
arrangement, orientation and sequence of elements within
the apparatus may be unique, possibly consisting of
alternating P, M and S elements.

The Family Gondolellacea survived the Permian
extinction event and was wide ranging and abundant for
about 100 million years. Our observations regarding the
element morphology, apparatus composition and apparatus
architecture of *Gondolella*, the key genus, support the
often-repeated, but poorly documented, view that the
Gondolellacea are 'different' and are taxonomically
distinct from other ozarkodinid conodonts.