CHESTER INDEX OSTRACODES[1]

CHALMER L. COOPER

Illinois State Geological Survey, Urbana, Illinois

The ostracodes constitute one of the most persistent orders of microfossils. Although many genera are extremely long lived, careful study reveals many species of value as index fossils. These forms have been found in all types of marine sediments throughout most of the Paleozoic era. Freshwater forms appeared with the change of the sedimentary conditions that resulted in the deposition of alternating marine and freshwater beds in the Pennsylvanian and Permian systems. The non-marine forms become important only in post-Paleozoic formations.

As shown by recent work[2] the Chester series has furnished one of the most diversified ostracode faunas of the Paleozoic era. Nearly 360 species are known and all but 35 are found in Illinois. This is a very marked increase over the number of species found in the lower Mississippian formations.

A few holdover genera from the Devonian period are present, but in greatly decreased numbers, namely *Beyrichia* and *Primitia*. The Chester series is characterized by a great increase in the number of species of *Bairdia*, *Cavellina*, *Glyptopleura*, *Healdia*, and *Paraparchites*. Genera restricted to the series are *Bairdiolites*, *Chesterella*, *Deloia*, *Geffenites*, *Glyptopleuroides*, *Lochriella*, *Paracavellina*, *Perprimitia*, and *Tetratylus*. Genera which continue into the Pennsylvanian era with little or no change in the number of species represented, are *Amphissites*, *Bythocypris*, *Ectodemites*, *Kirkbya*, and *Paraparchites*.

However, genera alone are of little value as stratigraphic indices. Only eight of the 67 genera known to occur in the Chester series are restricted to one formation, and five of these are represented by only one species each. More diagnostic species are found in the New Design (lower Chester) group than in the Homberg (middle Chester) and Elvira (upper Chester) groups. In the New Design group about half of the known species are restricted to one formation, whereas, approximately only a third of the species in each of the two higher groups are so restricted. The greatest change in the ostracode faunas occurs at the Homberg-Elvira boundary, dividing the Chester series into an equal number of formations above and below.

Some of the restricted species may not be good index fossils. Many of them are new and further work will no doubt increase their range. In some genera the species are so nearly alike that they are readily confused, and for this reason they are of little value for correlation. These include species of *Bairdia*, *Healdia*, *Cavellina*, and many species of the Amphissitinae.

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[2] Cooper, Chalmer L., Chester ostracodes of Illinois: Illinois Geol. Survey, Rept. Inv. 77, 101 pp., 14 pls., 1941.