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BRACHIOPOD FAUNA OF THE NANPANJIANG LIMESTONE OF EASTERN YUNNAN AND ITS GEOLOGICAL AGE

HOU HUNG-FEI (*Academy of Geology*) XIAN SI-YUAN (*Ministry of Geology*)

(Summary)

The Nanpanjiang Limestone of eastern Yunnan has long been known as one of the important Devonian beds in South China. It was first proposed by Prof. Y. C. Sun in 1943, and tentatively included in the upper member of the Miaokaoshan formation of Early Devonian age with *Gypidula pseudogleata* Hall as a leading fossil. Since then most geologists and palaeontologists have followed Sun's assignment, while few others have held it to be Early Middle Devonian. At the type locality near Poshi district along the Nanpanjiang Valley the Nanpanjiang Limestone is composed of yellowish-grey or dark grey limestone with an approximate thickness of 40—70 meters, and is overlain by the *Bothriolepis*-bearing beds of Lunghuashan formation.

From the Nanpanjiang Limestone abundant corals and brachiopods were collected recently by the writers.

The brachiopods described in the present paper comprise the following five species, of which one subgenus and two species are new.

1. *Eoreticularia maureri* (Holzapfel)
2. *Bornhardtina* ex gr. *uncitoides* Schulz
3. *B.* (*Parabornhardtina*) *yunnanensis* Sun et Hou (subgen. et sp. nov.)
4. *Acrothyris kwangsiensis* Hou
5. *A. nanpanjiangensis* Hou (sp. nov.)

Bornhardtina Schulz is one of the most characteristic Middle Devonian fossils of Europe. It was reported from the middle (*Campophyllum* zone) to the upper part of Middle Devonian in W. Germany and from the Givetian of Ural, Novaya Zemlya, Kuznesk Basin in the Soviet Union. In China, this genus has been recorded by Y. Wang from the Tungkangling Limestone of Kwangsi. *Eoreticularia maureri* Holzapfel is common in the Middle Devonian of W. Germany, Soviet Union and S. China where it is associated with *Stringocephalus burtini* Defrence. *Acrothyris* Hou strongly resembles *Chascothyris* Holzapfel and *Denkmenella* Schuchert et LeVene from Givetian of Europe and Soviet Union. The typical form of this genus was obtained from the Tungkangling Limestone at Shaoping in Kwangsi and the Dushan formation in Kweichow where it is in association with *Stringocephalus*.

Basing on the study of brachiopod fauna of the Nanpanjiang Limestone, the writers consider that the age of the Nanpanjiang Limestone is late or middle Middle Devonian, which might correspond to the Early Givetian of the western European scheme of stratigraphic subdivision.

DESCRIPTION OF SPECIES

Family Stringocephalidae King, 1850

Genus *Bornhardtina* Schulz, 1914

Subgenus *Parabornhardtina* Sun et Hou (subgen. nov.)

Subgenotype: *Parabornhartdina yunnanensis* Sun et Hou (subgen. et sp. nov.)

Diagnosis: Shell medium to large, strongly biconvex to subequally biconvex, with very strongly incurved and pointed ventral beak arching over dorsal valve. Deltidial plates conjunct, concave; foramen lacking. Surface smooth.

Remarks: This new subgenus differs from the *Bornhardtina* in the external characters. In *Bornhardtina* the beak is large and conspicuous, while in our new subgenus *Parabornhardtina,* it is so strongly incurved as to touch the dorsal umbo.

Parabornhardtina yunnanensis Sun et Hou (subgen. et sp. nov.)

(pl. I, figs. 2—5; pl. II, fig. 4)

Description: Shell medium-sized to large, semi-globose or rotund. Adult specimens are very large, the largest observed being approximately 80 mm long. Hinge-line narrow, curved, with the greatest width near mid-length.

Ventral valve strongly convex, highest near middle, arching strongly thence toward beak and gently curved at the front. The transverse contour is highly arched, narrowly so, with abrupt sides. Beak long, prominent, strongly incurved to touch the dorsal umbo. Deltidial plates conjunct, strongly concave, concealed by the incurved beak. Foramen not ascertainable. The dorsal valve is less convex than the ventral valve, almost regularly and uniformly arched. Neither beak nor area well defined.

Both valves marked by a narrow median depression which extends nearly to the beak. Surface of shell ornamented with fine closely crowded growth-lines.

Ventral interior marked only by thick hinge teeth. Dorsal interior with discrete hinge plates, ventrally convex (Text-fig. A).

Holotype. IV-492; pl. II, fig. 4.

Comparison: This species is distinguished by its incurved beak. In the amount of incurvature of the beak, our specimen is like *Bornhardtina onychophora* Spriestersbach figured by Cloud (1942, pl. 16, figs. 6—8) but the latter lacks the median depression on both valves.

Genus *Acrothyris* Hou, 1963

Genotype: *Acrothyris kwangsiensis* Hou, 1963 Acta Pal. Sinica, vol. 11, No. 3, p. 419, pl. 1, figs. 6a—c.

Exterior and ventral interior like *Chascothyris* but dorsal interior with large cardinal process.

Acrothyris nanpanjiangensis Hou (sp. nov.)

(Pl. I, figs. 7)

Description: Terebratuloids of elongated to subtrigonal outline; longer than wide.

Greatest width situated slightly anterior to mid-length. Anterior commissure gently sulcate.

Ventral valve longitudinally strongly convex, more so near the beak; transversely with the convexity interrupted by a pronounced ridge, sloping strongly thence toward lateral margins. Cardinal area apsacline, with erected and pointed beak. Deltidial plates conjunct; foramen submesothyrid. Dorsal valve longitudinally slightly concave with a pronounced sulcus.

Surface smooth, only ornamented with a few concentric lines.

Ventral interior with short dental plates. Dorsal interior with discrete hinge plates, supported by socket plates. Cardinal process large, bilobate (Text-fig. A-1).

Measurements (mm)

	No. IV 494	No. IV 494—1	No. IV 494—2
Length	31.8	28.0	21.1
Width	29.5	≈25.0	17.5
Thickness	11.6	10.4	7.6

Holotype: IV-494.

Comparison: This species is associated with *Acrothyris kwangsiensis* Hou. It differs from the latter in the high convexity of the ventral valve and in having a much deeper sulcus in the dorsal valve.