

- FUCHS, G. (1967): Zum Bau des Himalaya. — Österr. Akad. Wiss., mathem.-naturwiss. Kl., Denkschriften 113, pp. 211, Wien.
- FUCHS, G., & FRANK, W. (1970): The Geology of West Nepal between the Rivers Kali Gandaki and Thule Bheri. — Jb. Geol. B.-A., Sonderbd. 18, pp. 103.
- GUPTA, V. J. (1969): The stratigraphy of the Muth Quartzite of the Himalayas. — Journ. Geol. Soc. Ind., vol. 7, pp. 77–84.
- GUPTA, V. J. (1970 a): Muth Quartzite fauna from Kashmir. — Res. Bull. (N. S.), Panj. Univ., vol. 21, pp. 1–22.
- GUPTA, V. J. (1970 b): Palaeozoic Stratigraphy of Lahaul, Spiti and Kanaur Districts, H. P. — Publ. Cent. Advan. Stud. Geol. (In press).
- GUPTA, V. J., & BATES, D. E. B. (1968): A new species of *Schellwienella* from the Muth Quartzite of the Kashmir Himalayas. — Bull. Geol. Soc. Ind., vol. 5, no. 3, pp. 80–82.
- GRABAU, A. W. (1926): Stratigraphy of China. pt. I, Peking (Gout. Publication).
- HEIM, A., & GANSSER, A. (1939): Central Himalayas. — Mem. Soc. Helv. Sci. Nat., vol. 23, pt. I., pp. 1–245.
- MOORE, R. C., LALICKER, C. G., & FISCHER, A. G. (1952): Invertebrate Fossils. McGraw Hill Book Co., London, pp. 766.
- REED, F. R. C. (1908): The Devonian fauna of Northern Shan States Burma. — Pal. Ind., Geol. Surv. Ind., N. S., vol. 2, pt. 5, p. 1.
- SCHUCHERT, C., & COOPER, G. A. (1932): Brachiopod Genera of the suborders Orthoidea and Pentamerioidea. — Mem. Peabody Mus. Nat. Hist., vol. 4, pt. 1.
- STRACHAN, I., BODENHAUSEN, J. W. A., DEBOUY, T., & EGELER, C. G. (1964): Graptolites in the Tibetan Zone of the Nepal Himalayas. — Geologie en Mijnbouw, vol. 8, jg. 43, 380–382.
- ZITTEL, K. A. V. (1937): Invertebrate Fossils. — McMillan & Co., London.

Note on the Age of the Kalhel Limestone, Chamba Dist., H. P.

V. J. GUPTA *)

The present note is important in that it defines the stratigraphic position of the Kalhel Limestone and associated rocks exposed around Kalhel ($32^{\circ} 45' 00''$ N : $76^{\circ} 11' 28''$) on fossil basis. This note may be read as a supplement to the detailed paper published by FUCHS & GUPTA (1971) on the Palaeozoic stratigraphy of Kashmir, Kishtwar and Chamba regions. The Geological section as worked out by FUCHS on the basis of his field observations is given in the abovementioned paper.

The blue and grey limestone succession in the area around Kalhel conformably overlies the Agglomeratic Slates and trap succession of the Chamba syncline (FUCHS & GUPTA, 1971, p. 94). McMAHON (1883, p. 40) reported the occurrence of crinoid ossicles from the limestone succession and considered it to be of Upper Silurian age. GUPTA & BEDI (1970) on the basis of a poorly preserved ammonite assigned Lower to Middle Carboniferous age for it. FUCHS (personal communication) on the basis of his field observations considered this limestone in parts to be equivalent of Zewan Series and in parts to the Triassic succession of Kashmir.

Address: V. J. GUPTA, Centre of Advanced Study in Geology, Panjab University, Chandigarh.

The abovementioned field observations of FUCHS have been proved by the find of fossils from the Agglomeratic Slates and Kalhel Limestone exposed between Tissa and Kalhel.

The fossils from the Agglomeratic Slates from the road section north of Mandwal on the Tissa-Kalhel road include *Spirifer nagmarensis*, *S. spitiensis* and a poorly preserved bryozoan. All these forms are known from the Agglomeratic Slate succession of the Kashmir Valley.

The fauna from the blocks of Kalhel Limestone lying near Sathiala on the foot path between Kalhel and Tissa has yielded a few poorly preserved brachiopods and one fairly well preserved specimen of a pelecypod. Among the forms identified from these limestones are *Lyttonia* sp., *Enteletes* sp., *Productus* sp. and *Bakewellia parva*.

Lyttonia is a characteristic Permian genus known from China, Japan, Indo-China, Salt Range, Kashmir etc. In Kashmir this genus is found in the *Protorepora* Zone of Zewan Series. *Bakewellia parva* has been reported from the Permian rocks of Kansas (MOORE et al., 1952, p. 424).

On the basis of the fossils found in the succession under discussion it can be concluded that the Kalhel Limestone corresponds to the Zewan Series of Kashmir. The dolomitic and quartzitic portions of the limestone succession exposed along the road SW of Kalhel may correspond to the lower part of the Triassic of Kashmir.

The author is grateful to Dr. G. FUCHS for giving details of his field observations, going through the manuscript and for the useful suggestions which he gave from time to time.

Literature Cited

- FUCHS, G., & GUPTA, V. J. (1971): Palaeozoic Stratigraphy of Kashmir, Kishwar and Chamba regions. — Verh. Geol. B.-A. Wien.
- GUPTA, V. J., & BEDI, R. S. (1970): A new fossil find from the Chamba District, H. P. — Bull. Ind. Geol. Assoc., vol. 3, nos. 1 & 2, p. 32—33.
- MCMAHON, C. A. (1883): Some notes on the Geology of Chamba. — Rec. Geol. Surv. Ind., vol. 16, p. 35—42.
- MOORE, R. C., LALICKER, C. G. & FISCHER, A. G. (1952): Invertebrate Fossils. — McGraw Hill Book Company Inc., London, p. 766.

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Verhandlungen der Geologischen Bundesanstalt](#)

Jahr/Year: 1971

Band/Volume: [1971](#)

Autor(en)/Author(s): Gupta V.J.

Artikel/Article: [Note on the Age of the Kalhel Limestone, Chamba Dist., H.P 646-647](#)