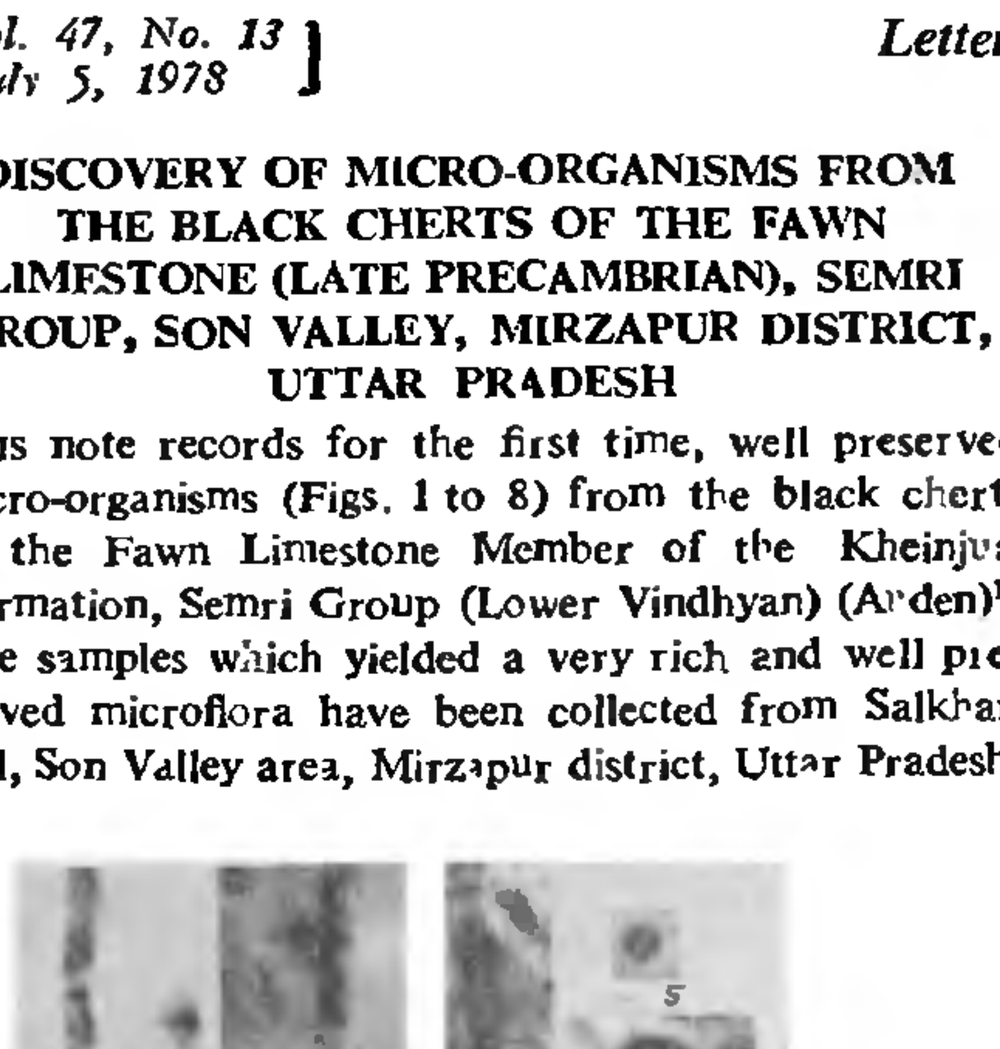
DISCOVERY OF MICRO-ORGANISMS FROM THE BLACK CHERTS OF THE FAWN LIMESTONE (LATE PRECAMBRIAN), SEMRI GROUP, SON VALLEY, MIRZAPUR DISTRICT, UTTAR PRADESH

THIS note records for the first time, well preserved micro-organisms (Figs. 1 to 8) from the black cherts of the Fawn Limestone Member of the Kheinjua Formation, Semri Group (Lower Vindhyan) (Auden)[1]. The samples which yielded a very rich and well preserved microflora have been collected from Salkhan hill, Son Valley area, Mirzapur district, Uttar Pradesh.



FIGS. 1–8. Micro-organisms in the black cherts of the Fawn Limestone. Photomicrographs from the thin sections of the chert. Enlargement is ×750 approx. Ordinary light. 1 and 2. *Eomycetopsis* Schopf. 3. *Myxococcoides* Schopf. 4. *Siphenophycus* Schopf. 5. *Sphaerophycus* Schopf. 6 and 7. ? *Globophycus* Schopf. 8. Coccoid algal cells. ×800 approx.

The Fawn Limestone is a well defined lithostratigraphic unit of the Semri Group represented by fawn to dark greyish black dolomitic and siliceous limestones to supratidal of intertidal origin. These dolomitic limestones show extensive development of both columnar and stratified stromatolites. The *Conophyton gargamicus-Colonella columnaris* assemblage has been recorded from this horizon and on this basis it has been assigned Middle Riphean age by Kumar[3] which is in accordance with the radiometric age of 1100 ± 60 million years given for the overlying Glauconitic Sandstone. (Misra)[4].

The Fawn Limestone also shows development of white to black bedded cherts. Generally the chert bands show lenticular disposition. The micro-organisms are seen only in the black fine grained microcrystalline to cryptocrystalline chert bands. In thin section, the black chert appears as yellowish brown due to presence of carbonaceous matter. The micro-organisms are studied under very high magnifications in the thin section. These are generally restricted to a few horizons and show profuse development in the yellowish brown bands parallel to bedding plane. Both filamentous and coccoid algae have been recorded. Both the types occur together but some bands show exclusive development of either filamentous or coccoid algae

The following genera of algae and fungi have been identified from the two thin sections No. SK/77/1 and 2;

Cephalophytarion Schopf, 1968[6]
Myxococcoides Schopf, 1968
Siphonophycus Schopf, 1968
Sphaerophycus Schopf, 1968
? *Globophycus* Schopf, 1968
? *Eoentophysalis* Hofmann, 1976[2]
Eomycetopsis Schopf, 1968.

The fundamental association of chert, stromatolites and Precambrian microfossils has been the basis of productive investigations of recent years (Schopf)[5]. The present discovery of micro-organisms from the cherts associated with stromatolites of the Middle Riphean age confirms the fact that these micro-organisms must have been responsible for constructing the stromatolite colonies which are so abundantly recorded in Precambrian. The present assemblage of micro-organisms shows close similarity with the microfloral assemblages of Bitter Springs and also with Belcher Island. Detailed work is in progress and will be published shortly.

The author is grateful to Dr. H. J. Hofmann of Department of Geology, Montreal University, Canada and Dr. M. R. Walter of Bureau of Mineral Investigation Geology and Geophysics, Australia, for encouragement and suggestions.

Department of Geology, S. KUMAR.
Lucknow University,
Lucknow, *February* 11, 1978.

1. Auden, J. B., *Mem. Geol. Surv. India*, 1933, 62 (2).
2. Hofmann, H. J., *Jour. Palaeo.*, 1976, 50, 1040.
3. Kumar, S., *Jour. Palaeo. Soc. India*, 1976, 19, 24.
4. Misra, R. C., *Presidential Address 56th Session Indian Sci. Cong.*, 1969.
5. Schopf, J. W., *Biol. Reviews*, 1970, 45, 319.
6. —, *Jour. Palaeo.*, 1968, 42, 651.