Thus the longer columns with slow flow-rate has allowed better separation of variably sized molecules. Therefore the use of ion exchange-cum-molecular filtration is highly advantageous in the fractionation of venoms. Details of these findings are discussed elsewhere.

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SCANNING ELECTRON MICROSCOPIC STUDIES OF ARCHAEAN LIFE FORMS FROM KARNATAKA, INDIA

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OFTEN, an investigator engaged in the study of Archaean life forms, faces the problem of whether a morpho-type preserved in a rock specimen under study in thin sections, is really a structurally preserved organism or is related to other natural inorganic processes. As the scanning electron microscope (SEM) can produce high magnification, high resolution, and depth of field, it aids in identifying the true nature of the morphotype under examination. It also helps in establishing the relationship between the matrix and morpho-type. The purpose of this paper is to present the results of a study, using the SEM, aimed at elucidating the real nature of some suspected organic life forms.

Samples of chert from Dodguni (Long: 76°45'E and Lat. 13°15' N: Survey of India toposheet No. 57 c/14) situated within the Chitradurga schist belt of Archaean age in the Tumkur district of Karnataka, were considered ideal for the study, because of the presence of algal life forms in them reported by Pichamuthu[1] and Gowda[2], but considered by some to be mineralogic artifacts[3,4]. The samples were polished and etched with HCl for 5 to 6 hr and then treated with HF for 10 to 12 hr and the etched surfaces were washed thoroughly with distilled water and given a gold coating 200 to 300 Å thick. Photomicrographs were taken under a JEOL scanning electron microscope.

Figures 1,3,5 are thin section photomicrographs of the chert taken under microscope. Figures 1 and 3 are filamentous forms and figure 5 is a globular structure. Figures 2 and 4 are SEM micrographs of filamentous algae taken from etched surface of the chert. Figure 6 is a spheroidal type. SEM micrographs clearly distinguishes between the filaments and the matrix as well as between the globular bodies. The syngenetic nature of the algal filaments are quite obvious from the SEM photomicrographs. These observations negate the possibility of these features being mineralogic artifacts. Had they been mineralogic artifacts, they would have been lost during the strong HF etching and HCl etching and would have appeared as a part of matrix rather than standout predominantly as filamentous and globular structures amidst the etched out matrix material.

Scanning electron microscopic studies clearly establish, that the algal filaments reported earlier by Pichamuthu[1] and Gowda[2] in the Archaean Dodguni cherts of Karnataka are real microfossils but not mineralogic artifacts as considered by Schopf[3] and Prasad[4].

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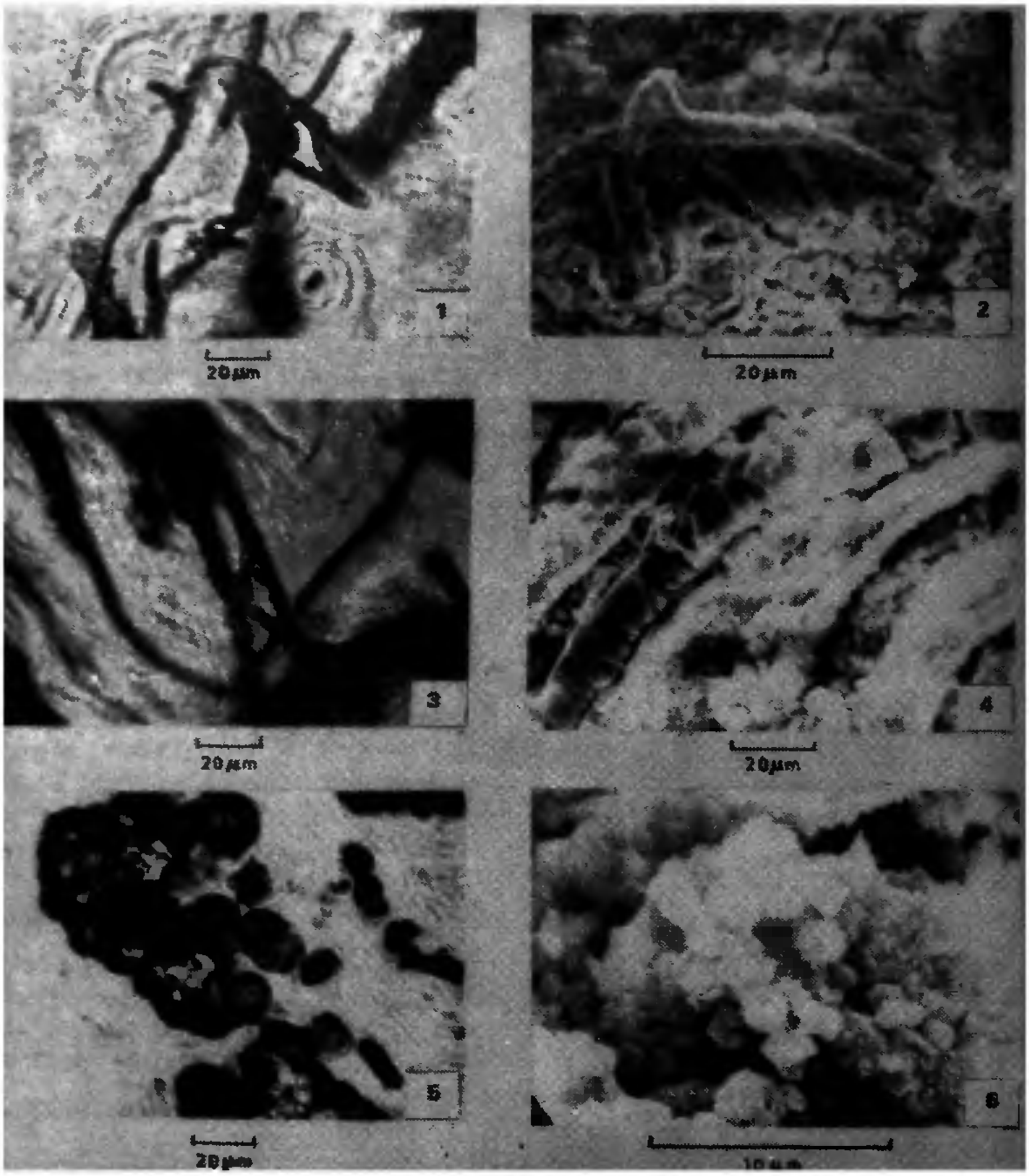

Figures 1–6. 1. Thin section photomicrograph of Dodguni-chert resembling filamentous structure of *Gunflint minuta* Barghoorn. **2.** SEM micrograph resembling branched filament of *Oscillatoria*. **3.** Thin section photomicrograph of filamentous structure resembling *Oscillatoria*. **4.**SEM micrograph of filamentous structure resembling *Oscillatoria*. **5.** Globular structures seen in thin section resembling *Huroniospora macro reticulata* Barghoorn Quit. **6.** SEM micrograph of globular structures resembling unidentified spheroidal object from the Archaean Onverweacht Group of the Barberton Mountain Land of South Africa.

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