A FILAMENTOUS ALGA FROM TERTIARY COAL OF METING, WEST PAKISTAN

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Microfossil analysis of coal furnishes important information regarding the past flora of a region and their phylogenetical relationships. With this object in view an analysis of the coal collected from Meting mines was undertaken. In following is reported an algal specimen found during the course of this investigation.

The specimen of coal was collected from Ghulam Ali Qasim Ali coal mines situated in Meting (68°-69° E, 25°-26° N about 25 miles away from Hyderabad, West Pakistan). This specimen is dark brown, lignite and belongs to tertiary age.

A small amount of the lignite was washed in boiling water and broken into small pieces in 10 per cent KOH solution taken in a flask which was fitted to a condenser. The mixture was heated for three hours at a constant temperature of 100°C. It was then passed through a series of meshes starting from 2 mm. Finally the solution obtained through 0.25 mm mesh was centrifuged at 2000 r.p.m. The residue collected in tubes was washed with distilled water. The centrifuged material was treated with nine parts glacial acetic acid and one part of 80 per cent sulphuric acid for five minutes. In the end the material was centrifuged and washed with distilled water and was mounted in glycerine jelly after having stained it with safranin.

Analysis of coal for microfossil contents showed not only the pollen grains as expected but also an algal specimen which is described below:-

Filamentous, unbranched, measuring 98.8μ, uniseriate and 16 celled (Fig. 1); individual cells rectangular or square in shape except the basal and apical cells which are different in shape from the rest of the cells (Fig. 1), the apical cell more or less rectangular. Cells measure (6.5—8.4)/(6.0-9.6)μ. The cell is composed of two distinct layers, cross wall measuring 1.2μ in thickness and longitudinal wall 0.6-0.9μ (Fig. 2).

The above described specimen shows characteristic features of the genus *Ulothrix* Kuntzing. The presence of unbranched filament, square cells, thin longitudinal walls and transverse septa is strongly indicative of a close relationship between the specimen described here and the present day *Ulothrix* spp.

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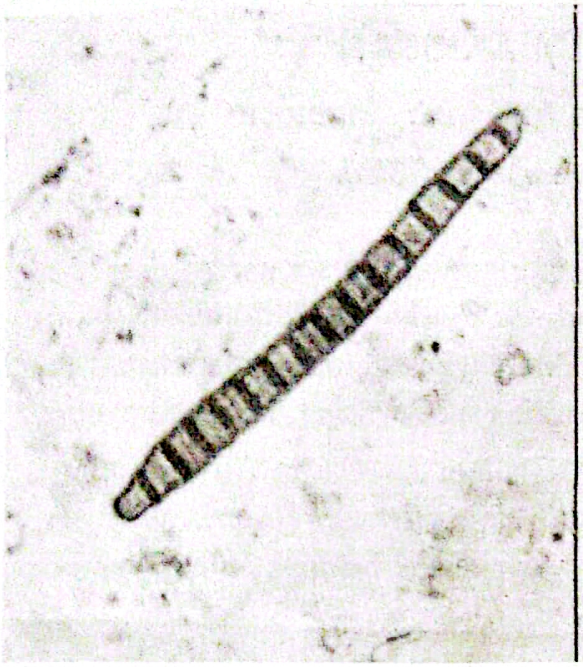


Fig. 1. The filament showing the shape of the apical cells. (X 10).

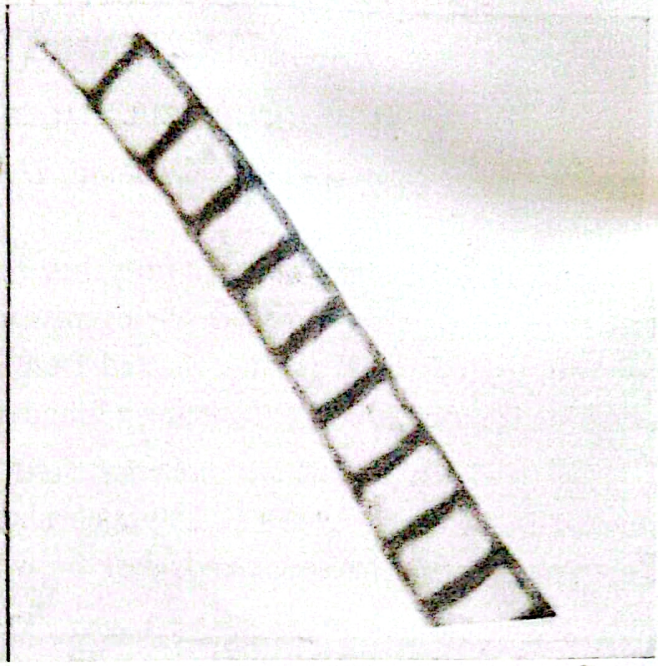


Fig. 2. A portion of the filament showing the thickenings of the cell wall (X 40).

The coal of Meting is of Allochthonous and of the drift type, and therefore the occurrence of the specimen in this coal cannot be accounted for with certainty. Probably the specimen is of fresh water origin and might have been transported and was preserved during the coal formation.

References

Crookshank, H. 1961. 'Reconnaissance Geology of part of West Pakistan', A report published for the Government of Pakistan by the Government of Canada.

Fritsch, F.E. 1935. 'The structure and reproduction of the Algae', Vol. I, p. 199, Cambridge University Press.

Smith, G.M. 1950. 'The fresh water algae of the United States', pp. 140-44, McGraw Hill Book Co. Inc.

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