The yellow seed colour is known to be positively associated with high oil content of superior quality[4] and is attributed to the homozygous recessives of one or more genes[2]. High oil content and high iodine value have been shown to be associated with seed colour as conditioned by the b_1 locus[4,5] and by the *g* locus[3]. The change of seed colour from brown to yellow could, therefore, be due to a gene mutation. By inducing such mutations it is possible to develop desirable characters in plants without disrupting seriously the otherwise superior gene combinations.

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OCCURRENCE OF ALGAL STROMATOLITE FROM LOWER KALADGI LIMESTONES (PRECAMBRIAN) NEAR NIDGUNDI, BIJAPUR DISTRICT, MYSORE STATE

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THE algal stromatolites are the only organic activity so far found in the Kaladgi sediments (Precambrian). Different types of algal stromatolites have been described from Lower Kaladgi limestones by Viswanathiah, Govinda Rajulu and Sathyanarayan[8] (1964) and Govinda Rajulu and Chandrasekhara Gowda[3,4] (1966) (1968), Viswanathiah and Chandrasekhara Gowda[5] (1970). During the recent investigations around the village Devalapur, about 2·4 km northwest of Nidgundi (Lat. 16° 22′, Long. 75° 44′) an interesting stromatolite band was traced. It consists of algal colonies which show peculiar configuration hitherto not described from the Kaladgi area.

The stromatolitic band occurs in the dolomites of the Lower Kaladgis trending north 80° east with a northerly dip of 25°. The band which is 2 to 3 metres in width can be traced for about 12 metres in the field before it disappears in the soil. The stromatolitic rock is greyish-white, hard and compact with thin veins of calcite.

The stromatolite under study shows prominently both horizontal and vertical colonies. In vertical section, the colonies consist of a number of hemispheroidal laminae, which are closely spaced and convex upwards. The laminae of one are not linked with the laminae of the adjacent ones. The growth appears to have begun from a point on the substratum expanding upward by the addition of crude hemispheroidal laminae. On the average 6 to 8 laminae can be counted per centimetre. In horizontal section the colony consists of closely spaced circular but crenulated laminae which are disposed around a nucleus. Four to six laminae can be counted per centimeter. The colony is ovoidal in outline and measures 28·5 cms in longer diameter and 25·6 cms in shorter diameter.

Thin sections of intracolonial dolomitic limestone associated with stromatolitic band are medium to fine-grained sparites with occasional grains of micrites. Patches of coarse-grained interlocking crystals of calcite, a few grains of quartz, white mica and tourmaline are also observed in association with the matrix. Similarly, the thin sections of stromatolitic band show fine-grained micrites with intergranular sparry dolomites, which are elongated and oriented according to the laminae observed in the specimens. In some sections medium-grained chert also occurs in the form

of thin veins parallel to the lamination. The maximum and minimum thickness of the fine-grained layers of micrites measures 0·98 mm to 0·48 mm. The coarse-grained layer measures 1·34 mm to 0·48 mm. The maximum and minimum thickness of the chert veins range from 0·19 mm to 0·38 mm. Black opaque carbonaceous material occurs in abundance. The thin section study of stromatolitic limestone has not revealed the presence of distinctive cellular structure. The presence of chert veins reveals that it has undergone the process of silicification. The diagenesis and silicification might have destroyed the remains of cellular structure.

Among stromatolites genus *Collenia* and *Cryptozoon* are the two important types generally resembling fossil algae. The stromatolite traced near Devalapur is very similar to *Cryptozoon proliferum* described by Hall[7] (*op. cit.* Logan *et al.*, 1964) which consists of discrete columnar of club-shaped structures composed of vertically stacked hemispheroids. The stromatolite under study may also be clubbed under SH-type (Logan *et al.*, 1964) where the colony consists of discrete, vertically stacked hemispheroids.

Colonies of *Cryptozoon proliferum* have been reported by Logan, B. W.[6] (1961) from the Recent of Sharkbay, West Australia, by Auden and Mathur (1958) from the Fawn limestones of the Semri series of the Lower Vindhyan formations, by Govinda Rajulu and Chandrasekhara Gowda[3] (1966) in the limestones of the Lower Kaladgis near Lokapur, Bijapur District, from Cuddapah formations near Mutssukota, Ananthapur District, Andhra Pradesh, by Viswanathiah and Aswathanarayana Rao[9] (1967), by Viswanathiah and Chandrasekhara Gowda[5] (1970) from Algundi, Bijapur District, Mysore State. But the interesting feature of the stromatolite *Cryptozoon proliferum* under study is that it exhibits peculiarly crenulated spheroidal laminae in horizontal section and possesses irregularly shaped hemispheroidal laminae in vertical section (Fig. 1).

The ortho quartzites associated with the stromatolitic limestones exhibit typical shallow water features like current bedding and ripple marks. It is apparent that the stromatolites have also formed in the same shallow water marine environment. According to Clarke and Wheeler (1921) warm climate favours the algal growth. The shallow water and warmed environment allow light which is essential for photosynthesis and accelerates the growth of the algal body. The occurrence of slate as thin intercalations in the dolomitic limestones suggests normal marine environment. Thus it seems shallow water marine environment in intertidal zone is favourable for the growth of algal stromatolites (Ginsburg[2], 1960).

FIG. 1. Cryptozoon proliferum

The present finding of stromatolites in Kaladgi group is important because they serve as distinct biostratigraphic horizons, which are of great signficance for purpose of correlation in the Precambrian formations, with more certainty.

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