

Figures 1 & 2. 1. Effects of TMP on the reduction of the total counts, 2. Effects of TMP on the total counts during 3 month of drug treatment.

hibitory effect of TMP against this specific enzyme is about 10,000 times more in prokaryotic system than eukariotic system, high doses may have some effect on the protein synthesis of eukariotic system⁵. It seems probable that the effectiveness of TMP against this parasitic infection may be due to the inhibition of protein synthesis of the parasitic larvae. Although TMP is effective against trichiniasis, it also caused growth retardation, anaemia and some alteration in the biochemical indices of blood and liver of the host animals used in this study (data not presented). These adverse effects of TMP administration in high doses have been earlier reported⁶.

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FIRST RECORD OF PALAEOZOIC FOSSILS FROM NAINITAL AREA, KUMAUN LESSER HIMALAYA

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PALAEOZOIC fish tooth, conodonts and bryozoan together with scolecodont fragments, foraminiferal

moulds and echinoid spines have been discovered in calcareous sediments at the base of the Blaini Formation. This lithostratigraphic unit resting on the Nagthat Formation and provisionally designated as the Gethia Member, is exposed at the Gethia road bend (29° 21'–70° 29'), on the scarp overlooking the Kuria stream, and southeast of Bhawali Sanatorium (29° 30'–79° 31'). It consists of sandy limestone with subordinate brown slate and dominant pebbly quartzite. The Gethia succession in the Kuria valley and at Gethia Sanatorium has been thrust over by the limestone and marls of the Lower Krol. The lithostratigraphic succession of the studied sections is given in figure 1.

Only cursory investigations have been carried out earlier on the paleontological aspects of the Krol belt. Some palynological and micropaleontological remains

from Birbhatti, Gethia and Bhawali in the Nainital area have been recorded but their testimony on age is contradictory. Sitholey *et al*¹ reported the presence of an assemblage of spores, pollens and wood fragments from the Infra-Krol (uppermost member of the Blaini Formation) at Birbhatti (Brewery), and suggested Permo-Carboniferous age. Sah *et al*² reassessed this assemblage and assigned a Triassic age. Shah and Merh³ noticed poorly preserved *Fenestella* indicating Middle Carboniferous age in the silicious limestone exposed near Bhawali. Dhondiyal⁴ and Acharyya and Dhondiyal⁵ suggest Eocene age for this fossiliferous horizon near Gethia on the basis of what they believe lithological resemblance with the Subathu Formation. Mathur and Sah⁶ recovered an assemblage of bivalves, foraminifera and bryozoans *Dybowskiella* sp., *Septopora* sp. *Valvulinella* sp. of Upper Carboniferous to Lower Permian age from the ferruginous gritty shale of the Blaini. Tewari⁷ and Tewari and Singh⁸ reported presence of an assemblage of *Protoretetpora*, impressions of Productids, and *Robustoschwagerina* of Lower Permian age in the lower Blaini sediments at Gethia Sanatorium. Tewari and Singh⁸ have also discovered a rich suite of Permian fossils in the Infra-Krol shales (uppermost Blaini) exposed in the Balia ravine. On the basis of earlier field observations and paleontological work, Valdiya^{9, 10} assigns a Devonian-Lower Permian age to the Blaini-Krol-Tal sequence.

The Gethia Faunal Assemblage

Genus *Protacrodus* Jaekel 1925 (figure 2A): The tooth consists of main cusp located on the terminal side and as high as the lateral cusp, and ornamented with raised ridges running from base towards the tip. A series of rounded foramina are visible at the base of the crown. The base is wide and depressed in the middle.

Genus *Strotopora* Ulrich, 1889 (figures 2B,C): In tangential sections zooecia look compressed and polygonal with thin walls and distinct lines of demarcation between mature and immature areas. In longitudinal sections (figure 2C) the zooarial tubes are parallel in immature zones but curve outward at the angle 70–90° in the mature zones. Diaphragms are also seen.

Genus *Paltodus* Pander 1856 (figure 2D) is cone-shaped, with gently curved cusp, subrounded apex, and two longitudinal costae extending from wide excavated base to near the apex.

Genus *Strachanognathus* Rhodes, 1955 (figure 2E) is small-sized, bar-type, with posterior edge making a sharp angle with the oral edge. The cusp is slightly

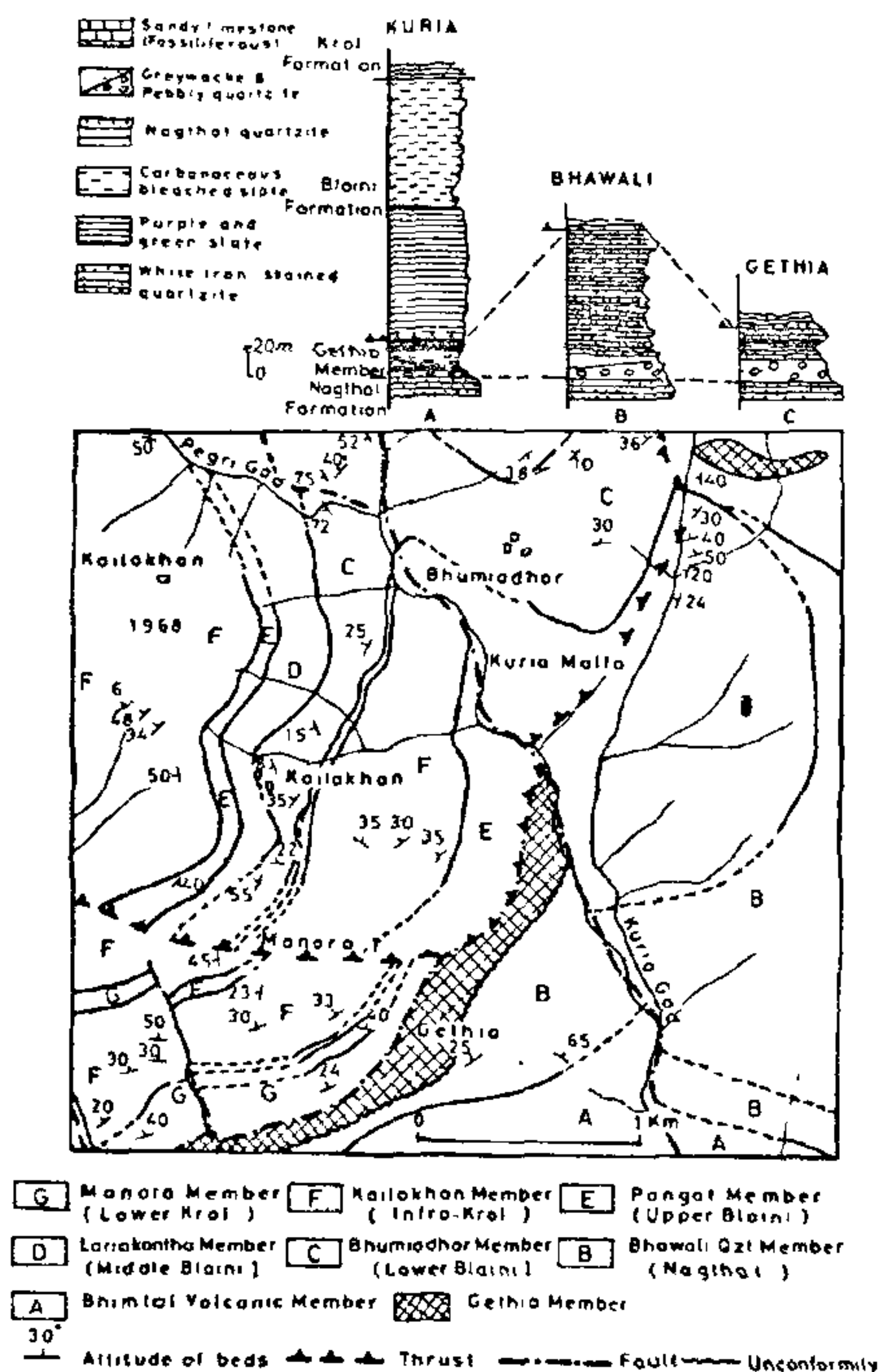


Figure 1. Lithological successions studied at Kuria, Gethia and Bhawali. Map prepared by Arun Sharma (1982).

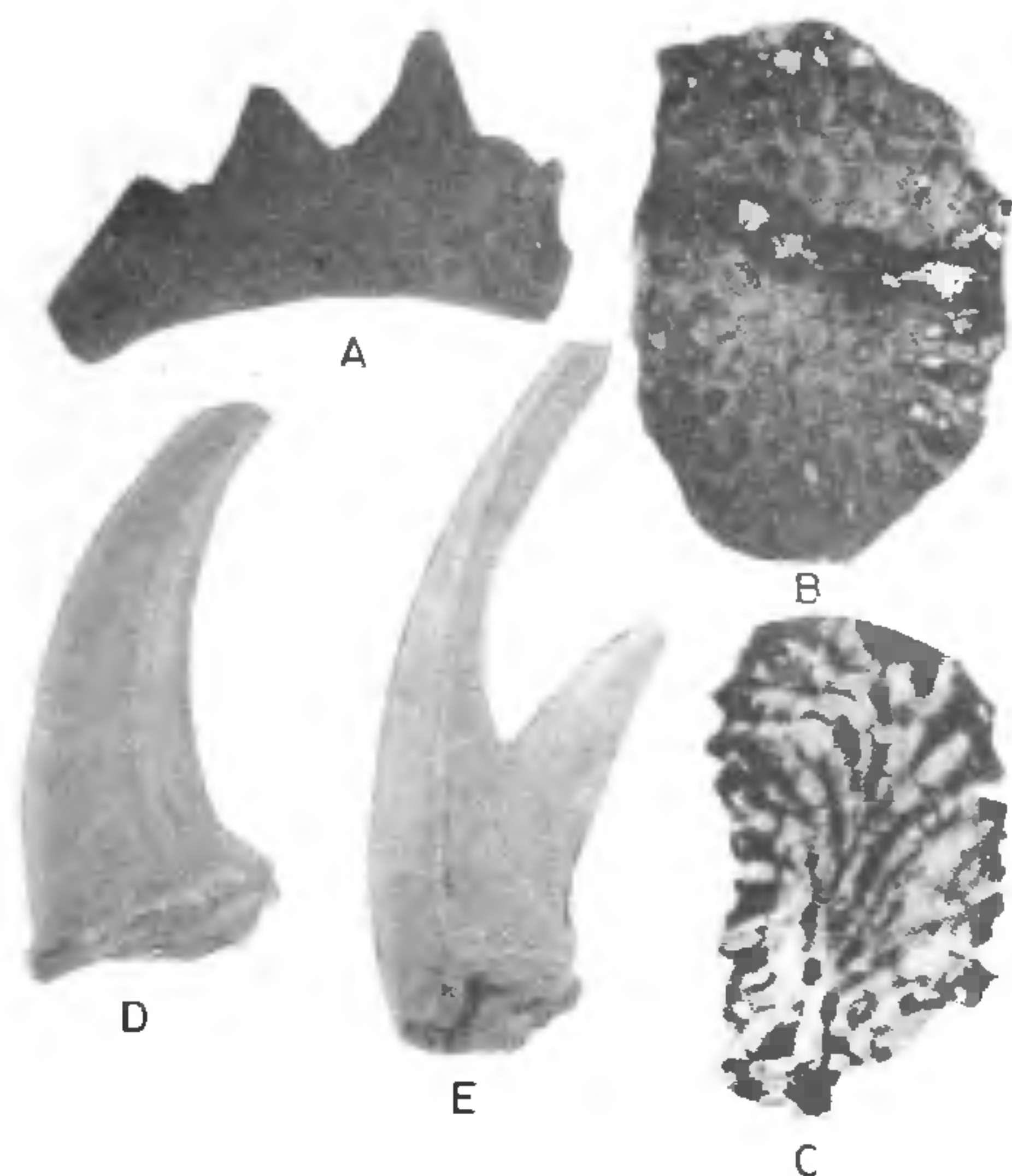


Figure 2. A—*Protacrodus* ($\times 50$). Locality-Gethia. B—*Strotopora* Tangential section ($\times 40$). C—*Strotopora* Longitudinal section ($\times 40$). Locality-Bhawali. D—*Paltodus* ($\times 50$). Locality-Gethia. E—*Strachanognathus* ($\times 250$). Locality-Bhawali.

curved posteriorly and has acute apex. The base is hollow and wide.

The stratigraphic age of the genus *Protacrodus* is late Devonian¹¹. *Strotopora* ranges from Devonian to Mississippian¹² and *Paltodus* from Ordovician to Silurian^{13,14}. Although the bryozoans constitute the most abundant fossils in the Gethia member, the state of their preservation is far from good due to diagenetic changes suffered by the limestone. On the basis of general size and apparent habit, they seem to belong mostly to the Palaeozoic *Fistuliporoidae*. Thus the microfaunal assemblage, on the whole, indicates a Middle Palaeozoic age—somewhere between Ordovician age to Devonian.

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VECTOR-BORNE MLOs OF BRINJAL LITTLE LEAF

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LITTLE leaf disease in brinjal comes under the Yellows group. This disease was first reported from Coimbatore by Thomas and Krishnaswami¹. It has been proved to be MLO disease by electron micrographic evidence² and chemo³ and thermo⁴ therapeutic tests. Characteristic symptoms of this disease are reduction in leaf size, stunting of plant growth, phyllody and virulence of floral parts. The growth of the fruits after