OCCURRENCE OF THE TRACE FOSSIL
HIRMERIA FUCINI 1936, IN THE
INTERTRAPPEAN BED OF NINAMA,
SURENDRANAGAR DISTRICT, GUJARAT

We wish to report the first occurrence of a trace fossil from the Intertrappean Bed at Ninama (22° 18' : 71° 20') which adds significantly to our knowledge about the depositional conditions of this bed.

By its narrow sharp crested ridges running sub-parallel and criss-crossed by similarly narrow canals, to produce an intricate pattern, the present material can be easily identified with Hirmeria khadluensis Chiponkar and Ghare reported from the cherty limestone of the Lameta Beds around Khadlu, 2 km south of Mongra (22° 00' 38'' : 74° 02' 30'') ; the only observable difference is that the ridges in the specimens from Khadlu are slightly less sharp crested than in the present material.

The burrow ("A" in Fig. 1), associated with the present trace fossil, is inclined to the bedding plane at a very low angle, suggestive of the animal moving in just sub-surface position, and, collecting food from the sediment surface where it was accumulating under conditions of retarded sedimentation.

While Hirmeria Fucini, 1936, comes from (?) Lower Permian, of Itali (Verra Cano), the occurrences of Hirmeria in India are from cherty limestones of fresh water lacustrine deposits (Lameta and Intertrappean Beds) of much higher horizons, viz., late Cretaceous to Palaeocene as indicated by the conventional fossils 1-2.

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A NOTE ON THE PSEUDO-COLITES FROM
THE GREAT LIMESTONE OF LAIN,
UDHAMPUR DISTRICT, JAMMU PROVINCE,
J AND K STATE (INDIA)

The present note deals with the finding of pseudo-colites from the Great Limestone of Lain (Lat. 32°. 59' 30" N and 75° 02' 00" E, 43p/1). The Great Limestone of Lain is the oldest formation in the area and its base is not exposed in the area covered. It is overlain by the Eocene and other late Tertiary formations.

Fig. 1. Location Map.

The Great Limestone portrays variation both in physical and chemical traits within wide limits. At places, the limestone is partly or completely dolomitised. It is massive, hard, dense, usually non-
crystalline extensively jointed, fissured and fractured in an irregular pattern. While making a sedimentological studies of the rocks of the area, the author came across some samples of the limestone which exhibited pseudo-oölites for the first time.

The pseudo-oölites are light grey to brown and dark brown in colour. The intensity of colour decreases from centre outward, towards the periphery. Areas in which the grains are exceedingly fine or impure appear dark, whereas those in which the grains are coarser and purer have a distinctly lighter shades. The fine grained pseudo-oölites are mostly oval in outline and are dark and embedded in a clearer and coarser calcite. The oöleys may represent fecal pellets of organisms that lived in the muds when they were being deposited. The colouring pigment is generally of organic origin. The average size of the pseudo-oölites varies from 0.086 to 1.5 mm and they have no genetic relation with the number of rims or the nuclei, which ordinarily control the size of the normal oölites.

In a few sections, some of the pseudo-oölites appear to be deformed. The deformation is due, either to corrosion in situ, contraction of certain individuals in a matrix which would permit a relatively easy movement of the materials, or due to strong agitation in the environments. Since the pseudo-oölites have no concern with agitated waters, as they are formed mostly in an epeiric environment of quiet sedimentation, it appears plausible that the deformity was due to algal activity, at the time of sedimentation. The algae was blue green belonging to colenia group. The deformation resulted in perforation, punctuation and break up of the original set up of the pseudo-oölites.

The pseudo-oölites appear to have been formed in marine, shallow, quiet water environments. The algae played a vital role for the entrapment of precipitated carbonate.

The Great Limestone of Jammu has a close resemblance to that of the Krols, from which the algal oölites have been reported. The presence of fossil “Oncolite” (C. Gundu Rao, 1970) from the Krols has established their upper Pre-Cambrian age. It is thus obvious that the pseudo-oölites have thrown much light on the diagenetic history of the Great Limestone. The Great Limestone of Jammu from which the pseudo-oölites have been found now are of algal origin and are of an upper Pre-Cambrian age.

Department of Geology... SATISH KUMAR CHADHA. Government O.M.S. Science College, Jammu, July 11, 1975.


DISCOVERY OF DEVONIAN SCOLECODONTS IN THE LESSER HIMALAYAN ZONE OF GARHWAL, U.P.

The find of bryozoans, brachiopods and other fossils from the shaly horizon of the Boulder State Member forming part of the "Lower Bijnor Tectonic Unit" exposed on the southern limb of the Garhwal Synclise has aroused much interest among those working on Himalayan Geology. On the basis of fossils collected from different localities, Middle Carboniferous to Permian ages were assigned to the fossiliferous beds. According to Ravi Shanker and Ganesh, the beds yielding Upper Palaeozoic fossils are conformably overlain by the gritty quartzite and sandy limestones.

One of us (B. S. T.) visited the Dogada (29° 48' 24" : 78° 36' 48") area of Garhwal and collected rock specimens from different stratigraphic horizons. One of these samples, collected from a locality about 1.5 km north of Dogada from the sandy limestone horizon on maceration in N/10 acetic acid has yielded fairly well preserved scolocodont assemblage (Fig. 1) of probable Devonian age. The fauna includes *Nereidavus aff. ontarioensis* Stauffer, *Nereidavus aff. planus* Stauffer, *Kermitrites cf. kosovienstze* Zebra, *Eunicites* sp. In addition to these, specimens of worm tubes referable to *Protoscolepus* sp. were also obtained. All the scolocodont forms referred to, above have close affinity with Devonian scolocodonts.

The find of Devonian scolocodont fauna from the beds conformably lying above the Boulder State