139-141°, lit. m.p. 142-43°; 5,7,4′-trimethoxyflavone, m.p. 154-55°, lit. m.p. 156° and 7,8,4′-trimethoxy-
flavone, m.p. 192-4°, lit. m.p. 189-90°, have been synthesesed from the corresponding dibenzoylmethanes.
The structures of these compounds have further been confirmed by NMR.

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   Res. (India), 1957, 16B, 116.
   Indian Acad. Sci., 1949, 30A, 151.
7. Gupta, K. C. and Venkataraman, K., Ibid., 1936,
   p. 267.
8. Badhwar, J. C., Kang, K. S. and Venkataraman, K.,
   Ibid., 1932, p. 1107.

OCCURRENCE OF PSEUDO-MUDCRACKS IN
TALCHIR SEDIMENTS, NEAR AMBIKAPUR,
MADHYA PRADESH

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DURING the course of geological investigation on
Talchir sediments near Ambikapur, Madhya Pradesh,
the authors recorded the occurrence of pseudo-
mudcracks, a rarely found sedimentary structure.
In geological literature, the same structure was des-
cribed by Druley and Walton¹ as a characteristic
feature of flysch deposits, occurring in the form of
a network of short dykes penetrating upwards in
finitely laminated, fine grained sediments. In India,
except for the reported occurrence of one from flysch
deposits of Aravalli supergroup², there seems to be
no record of this structure. The present paper
reports, for the first time, the occurrence of pseudo-
mudcracks from the Gondwana rocks.

The pseudo-mudcracks are found in thinly laminated
sandstone-shale sequence of Talchir Formation exposed
on the right bank of Gungata river about 300 meters
downstream from the bridge on Ambikapur-Darima
Road. The structure occurs in the form of a network
of small ridges penetrating upwards into dark coloured
shales from the underlying sandstone layer. In plan,
these dykelets show an incomplete polygonal pat-
tern and, therefore, on exposure they may be mistaken for
true mudcracks (Fig. 1). The maximum measure-
ments of their length, width and height are 10 cm, 1 cm
and 0.5 cm respectively. In true mudcracks it is
generally found that the fractures are always vertical
to the bedding plane and their width gradually decreases
downward. In the present case, the small dykelets
always penetrate into upper shale layer with an angle
ranging from 20° to 45° and their width decreases
upward; therefore show a pattern reverse to that of
true mudcracks (Fig. 2).

The formation of pseudo-mudcracks has been
explained in two ways¹. First, by horizontal expan-
sion of liquefied sandy layer without comparable
expansion of fine-grained shale bed, and second,
directly by the action of earthquake shocks coupled
with transient liquefaction of sand. Sharma et al.³
while describing a similar structure from Aravalli
flyschs, have suggested even the liquefaction of sandy
layer as a result of seismic shocks. In the present
case the inclined penetration and upward tapering
of small ridges are the evidence which indicates the

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FIG. 1. Pseudo-mudcracks showing incomplete polygonal shape, Gungata river, M.P.

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FIG. 2. Pseudo-mudcracks in section, note the upward penetration of sandy dykelets.
Till early seventies the development of the conical arrangement of the Conophyton laminae was unexplainable and at the same time not much was known about the microbiota responsible for its formation. The only available reference till then on its microbiota was by Licari and Cloud who had described one filamentous form of Cyanophyta from the Paradise Creek Formation, Northwestern Queensland, Australia. Much insight on the morphogenesis of Conophyton was developed due to the work of Walter et al. who studied the modern Conophyton from the hot springs of the Yellowstone National Park, U.S.A., and reached on the conclusion that the gliding mobility, phototaxis and interfilament cohesion are essential characteristics that enable Cyanophytes (Phormidiun tenue var. granuliferum) to form the conical laminae. Following the theory of uniformitarianism, it is presumed that the same mechanism could have also operated in the Precambrian in building morphology of the Conophyton.

The Conophyton shows much varied forms in the Precambrian in comparison to recent and almost no information is available about the community of microorganisms which constructed them. In this context, the present discovery of fossil microbiota from the Conophyton garganicus is significant; the other reports of fossil microbiota from the Conophyton are from the Paradise Creek Formation, Northwestern Queensland, Australia (Licari and Cloud) and from a Vendian form Conophyton gumbetta, South Kazakhstan, U.S.S.R. (Schopf and Sovetov).

The microbiota yielding samples of chert were collected from Salkhan hill on the Markundi-Chhapar motor road, Mirzapur District, U.P., where the Fawn Limestone member of the Khainjua Formation is well developed. It attains a thickness of about 10 m. It conformably overlies the Olive Shale and is overlain by the Glaucolithic Sandstone member (Auten). The glauconitic sandstone gives radiometric age of 1110 ± 60 m.y. (after Vinogradov and Tugarinov; see Misra). Kumar has suggested Middle Riphean age to the Fawn Limestone on the basis of the presence of stromatolites.

The fossil-bearing cherts are associated with Conophyton garganicus (Figs. 1 and 2). The cherts are greyish black to black and gradually form the outer margin of the Conophyton laminae (Fig. 2). The filamentous forms have been recorded in the petrographic thin sections of the black chert. These forms are made up of calcitic calcite and are seen in cryptocrystalline silica matrix. It could not be established whether calcitic nature of the filaments is due to calcification, or it is a relic structure after the replacement of the rock by cryptocrystalline silica due to metametalization.