PLATYTUBA, ICHNOGEN NOV FROM THE INTERTRAPPEAN BED AT BAMANBOR, GUJARAT

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GENUS: *Platytuba* ichnogen nov
Type Species: *Platytuba indica* sp nov (*vide infra*).

Diagnosis: An unbranched, thin burrow, almost straight and parallel to the bedding plane; cross-section distinctly lenticular, longer diameter parallel to the bedding plane; extremely thin but distinct burrow-wall consisting of irregularly arranged tabloid pellets in a silty matrix. Lacustrine.

Remarks: The present ichnogenus appears to be a combined feeding-dwelling burrow like *Trichichnus* Frey[1] from the Cretaceous of Niobrara Chalk, Kansas, U.S.A., but differs from it in having unmineralised burrow-wall, distinctly lenticular cross-section and bigger dimensions.

Though, closely comparable with the ichnogenus *Edaphichnium* Bown and Kraus[2] from the alluvial Willwood Formation, Bighorn basin, northwest Wyoming, U.S.A., the present ichnogenus can be distinguished from it in having lenticular cross-section, smaller dimensions, and irregular arrangement of pellets.

The ichnogenus *Ophiomorpha* Lundgren (Häntzschel[1], p. W 84; Frey, Howard and Pryor[3]) differs from the present specimen in being a branched burrow with larger size. Moreover *Ophiomorpha* is a three-dimensional composite burrow system, which is not the case with the present ichnogenus.

Etymology: From its nature like a broad, thin tube

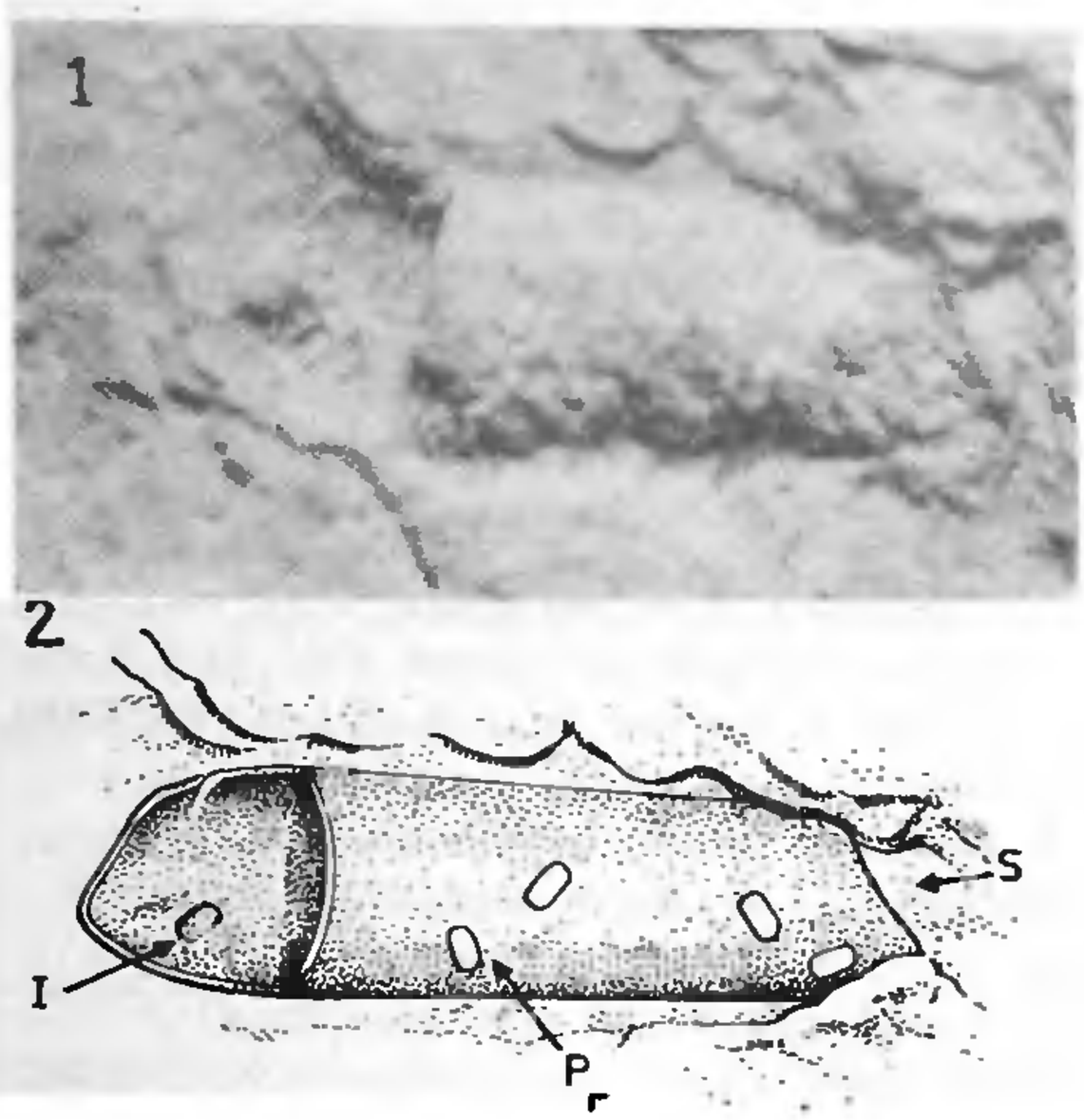
Platytuba indica ichno sp nov
(figures 1–2)

Material: One specimen.
Holotype: No. MACS G-2258

Occurrence: Shaly intercalations within the intertrappean limestone bed at Bamanbor (22° 25′: 71° 1′)

Dimensions: Length of the preserved portion of the burrow—8.6 mm. Width (= longer diameter of the cross-section)—2.7 mm. Height (= shorter diameter)—0.8 mm. Thickness of the burrow-wall—less than 0.1 mm.

Description: The burrow is straight, unbranched, thin and with a distinctly lenticular cross-section. It is lying parallel to the bedding plane. The burrow has a very thin but conspicuous lining (burrow-wall), consisting of silty material and reinforced by rather sparsely distributed and irregularly arranged tabloid pellets. One end of the burrow is concealed within sediment. Exposing it is not done to avoid possible damage. The other end is partly broken where only the lower burrow-wall is exposed exhibiting marks produced by tabloid pellets. The external surface is fairly smooth. There are no signs of crushing and cracking, hence the flattening must be original and is not produced due to the weight of the overlying sediment.



Figures 1, 2. **1.** Photograph of the holotype, specimen No. MACS G-2258 × 5. **2.** Line drawing of the same × 5. (I-impressions of the pellets on a portion where only lower burrow-wall is seen; P-Pellets strengthening the burrow-wall; S-Sediment concealing part of the burrow.)

Remarks: After detailed field observations[4] and study of fossil fish fauna[5-7], it was shown that the Bamanbor intertrappean bed is Palaeocene in age and was deposited in a lacustrine condition. It follows that the present ichnospecies (and also the ichnogenus) belongs to the Palaeocene epoch and lacustrine conditions.

Etymology: The specific name is derived from the country of occurrence, India.

Repository: The specimen is deposited in the Museum of Department of Geology and Palaeontology, Maharashtra Association for the Cultivation of Science, Pune

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2. Bown, Thomas. M. and Kraus, M., *J. Palaeogeogr. Palaeoclimatol. Palaeoecol.*, 1983, **43**, 95.
3. Frey, Robert W., Howard James, D. and Pryor, W. A., *J. Palaeogeogr. Palaeoclimatol. Palaeoecol.*, 1978, **23**, 199.
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5. Borkar, V. D., *Proc. Indian Acad. Sci.*, 1973, **77(B)**, 181.
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ULTRAMAFIC XENOLITHS (?) IN LAMPROPHYRE DYKES FROM MURUD-JANJIRA, RAIGARH DISTRICT, MAHARASHTRA, INDIA.

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THE ultramafic xenoliths described in the present paper occur in lamprophyre dykes from Murud-Janjira (18°16′N and 18°21′N and 72°55′E and 73°E) situated about 160 km south of Bombay. Though earlier workers have reported occurrence of lamprophyres from Bombay[1,2] and from Murud-Janjira[3], there has so far been no report of ultramafic xenoliths in lamprophyres from this area.

The area is predominantly occupied by tholeiitic basalts which have been classified as Upper Traps[4]. The exposed basalt flows have a total thickness of 304 m within which four flows varying in thickness from 50 to 100 m can be recognised. The basalts are intruded by a dyke swarm represented by dolerites, lamprophyres and nepheline syenites[5]. The lamprophyres are exposed along a wave-cut platform developed in the second flow from the bottom and they are not seen to traverse the overlying flow. They are best exposed around Bacon Hill and Rajpuri where they can be traced for hundreds of metres. They trend in general in N-S direction and vary in thickness from 10 cm to a maximum of 1.5 m. Pinching and swelling along the trend is common. In all, six lamprophyre dykes have been mapped. The thicker dykes show the presence of xenoliths (figure 1). Within the same dyke xenoliths of felsic and ultramafic material have been encountered. The xenoliths of felsic material range in size from 2 cm to a maximum of 15 cm. The ultramafic xenoliths vary between 2 cm and 8 cm.

The lamprophyre is a dark-coloured, hard and compact rock composed of a very fine grained matrix. Three dykes out of the six mapped, were found to contain big rounded flakes of biotite in a fine grained matrix. In microsections, the former exhibit porphyritic texture with microphenocrysts of diopside, biotite and brown amphibole-kaersutite? in a matrix made up of the same mineral species in addition to analcime and some glass. The remaining dykes show panidimorphic texture with idiomorphic prisms of diopside, kaersutite, biotite and in some cases serpentinised olivine in a groundmass of microlites of diopside, kaersutite, granular iron ore and analcime (figure 2).

Three distinct types of phenocrystic phases can be recognised. These can be broadly designated as microphenocrysts, xenocrysts and late stage topometasomatic minerals. The microphenocrysts of clinopyroxene have a resorbed, green pleochroic core that may be rich in iron, and a colourless border zone. Such crystals are idiomorphic and have sharply defined contacts with the enclosing groundmass. Under xenocrysts, are included all types of phases that are apparantly out of equilibrium with the enclosing groundmass judged by the presence of resorption with rounded, embayed outlines and/or spongy texture. Out of the six lamprophyres examined in thin section, two contained easily identifiable xenocrysts. On the basis of modal composition, the lamprophyres can be classified as monchiquites.

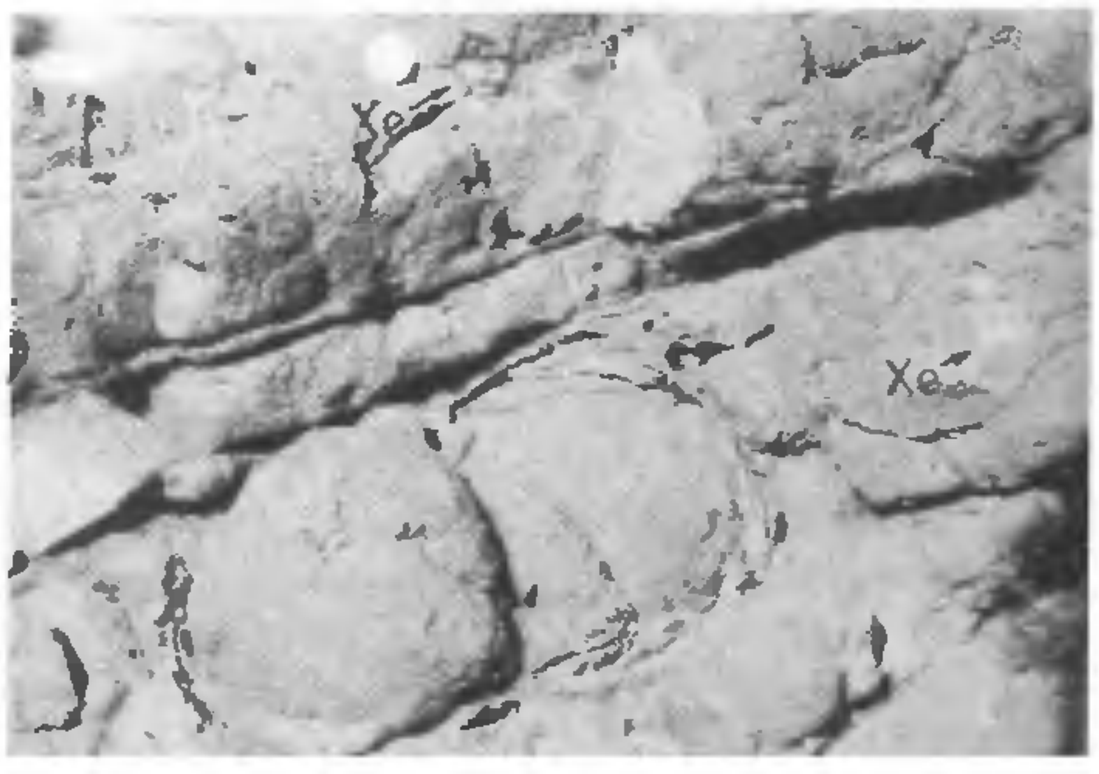

Figure 1. Lamprophyre dyke from Murud-Janjira showing felsic and ultramafic xenoliths.