

TABLE I
 χ_d values and NMR shifts of cobaltic complexes

Sl. No.	Formula of the complex (complexing ligand)	χ_d (Obs.) ¹	χ_d (Calc.) ³	σ % from NMR data ⁴
1.	[Coen ₂ (C ₂ H ₂ N ₄) Cl]Cl ₂ (dicyandiamide)	131.73	202.2	-0.713
2.	[Coen ₂ (C ₅ H ₅ N) Cl]Cl ₂ ·H ₂ O (pyridine)	153.24	208.3	-0.803
3.	[Coen ₂ (C ₆ H ₄ ·NH ₂ ·OC ₂ H ₅) Cl]Cl ₂ (ortho-phenetidine)	153.70	208.3	-0.822
4.	[Coen ₂ (C ₆ H ₄ ·NH ₂ ·CH ₃) Cl]Cl ₂ ·H ₂ O (meta-toluidine)	166.14	212.4	-0.818
5.	[Coen ₂ (C ₆ H ₄ ·NH ₂ ·Cl) Cl]Cl ₂ (meta-chloroaniline)	171.12	208.3	-0.821
6.	[Coen ₂ (C ₆ H ₄ ·NH ₂ ·OCH ₃) Cl]Cl ₂ ·H ₂ O (para-anisidine)	186.40	208.3	-0.821
7.	[Coen ₂ (C ₆ H ₄ ·NH ₂ ·Cl) Cl]Cl ₂ (ortho-chloroaniline)	208.39	210.4	-0.871
8.	[Coen ₂ (C ₆ H ₃ ·NH ₂ ·OCH ₃) Cl]Cl ₂ (meta-anisidine)	208.53	212.4	-0.818
9.	[Coen ₂ (C ₆ H ₄ ·NH ₂ ·OC ₂ H ₅) Cl]Cl ₂ (meta-phenetidine)	211.48	212.4	-0.830

It would be interesting to compare the relative order of ligand field strengths obtained by the three methods.

An examination of the results, given above, indicate that there is no complete agreement in the orders of ligand field strengths obtained by the three methods. Among the three methods the NMR is perhaps the most sensitive for establishing the relative order for various ligands since the accuracy of NMR measurements is much greater than the other two methods. For example, the absorption bands for the complexes of pyridine, orthophenetidine and meta-chloroaniline are all at 510 m μ ; however, the NMR shifts for the corresponding ligands are respectively 0.803, 0.822 and 0.821 for the three compounds. The magnetic method has a distinct disadvantage in the fact that a number of uncertainties are involved in obtaining the computed values by using the diamagnetic susceptibility values of the components in the complex molecule. An exact correlation in the orders of ligand field strengths by the three methods is therefore not possible. For the ligands, dicyandiamide and pyridine the agreement is good, since in every method these two ligands are heading the list. However, for the remaining ligands there is much variation. A somewhat partial agreement is indicated by the following ligands which may be expressed as

Dicyandiamide > pyridine > meta-chloroaniline > para-anisidine > meta-phenetidine.

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TWO TERRICOLOUS LICHENS FROM SOUTH WESTERN INDIA

IN the course of our investigations on the lichen flora of Western Ghats, India, we encountered two micro-lichens growing on calcareous soil in association with *Riccia* sp. at the Purandar Fort and Poona. On microscopic examination, these lichens were identified as *Dermatocarpon hepaticum* and *Endocarpon pusillum*. These two taxa constitute additions to the lichen flora of India and are therefore described and illustrated in this note specially because of their inconspicuous nature and their known distribution in the temperate regions of the northern hemisphere.

1. *Dermatocarpon hepaticum* (Ach.) Th. Fr. in *Nova Acta Reg. Soc. Sci. Upsal*, Ser. 3, 3: 555, 1861 (Figs. 1, 2).

= *Endocarpon hepaticum* Ach. *Kgl. Vetensk. Akad. Nya Handl.*, 1809, p. 156.

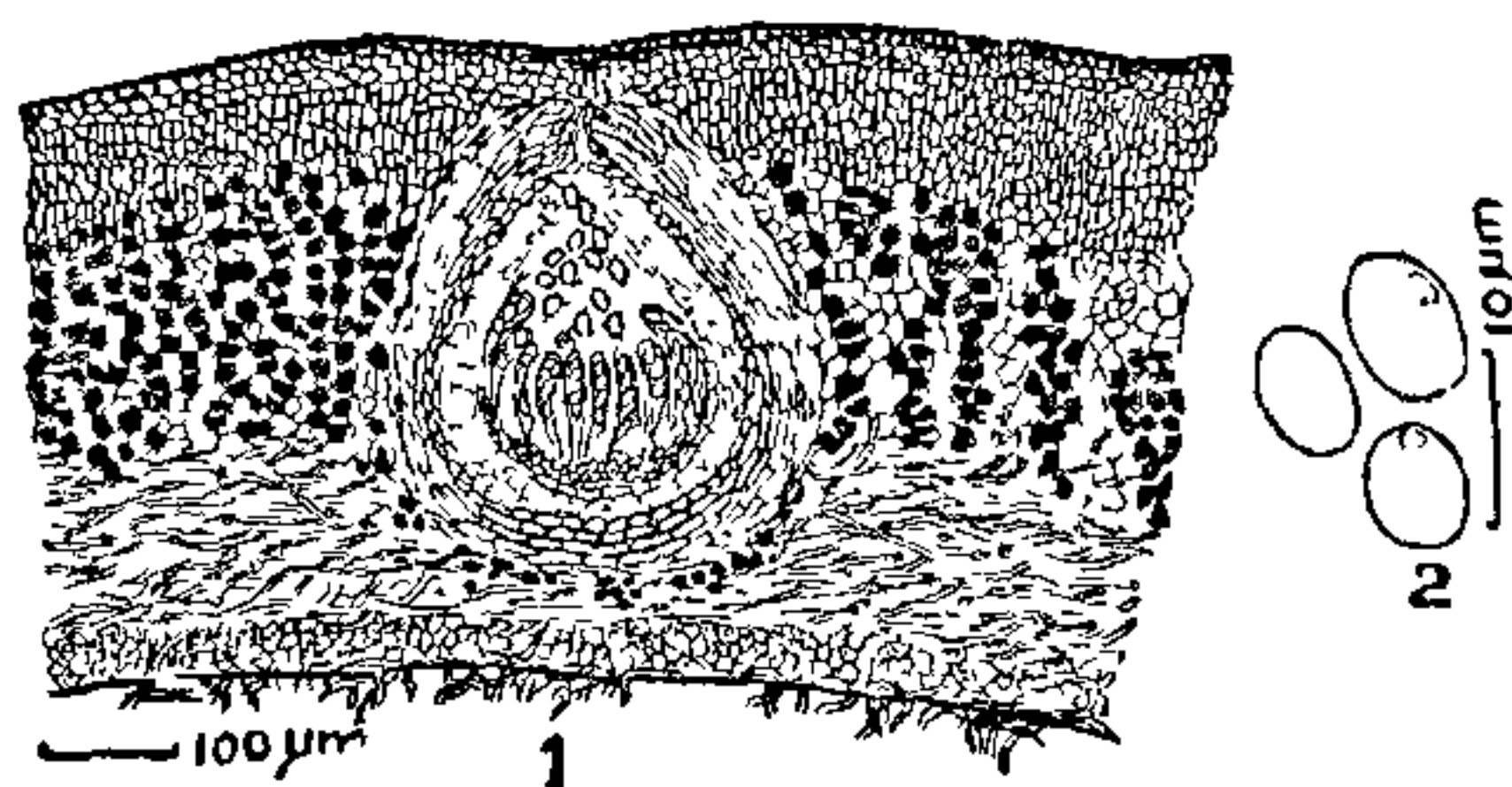
Thallus squamulose, closely adnate; upper surface dark or reddish brown, lower surface pale coloured with a few haptera like rhizoidal hyphae, distinctly corticated on both sides; upper cortex with vertical cell rows, 80–160 μ m thick, medulla cellular, hyaline; lower cortex composed of vertical row of cells, thinner than upper cortex; algae mostly in upper cortical layers; perithecia immersed, 300–400 μ m in diam., perithecial wall (exciple) thick, mostly colourless but dark brown near the dark ostiole; hymenium I–;

asci cylindrical, unitunicate, shortly pedicellate; ascospores one celled, hyaline, ellipsoidal to subglobose, $4.5 \times 8-13 \mu\text{m}$ in size.

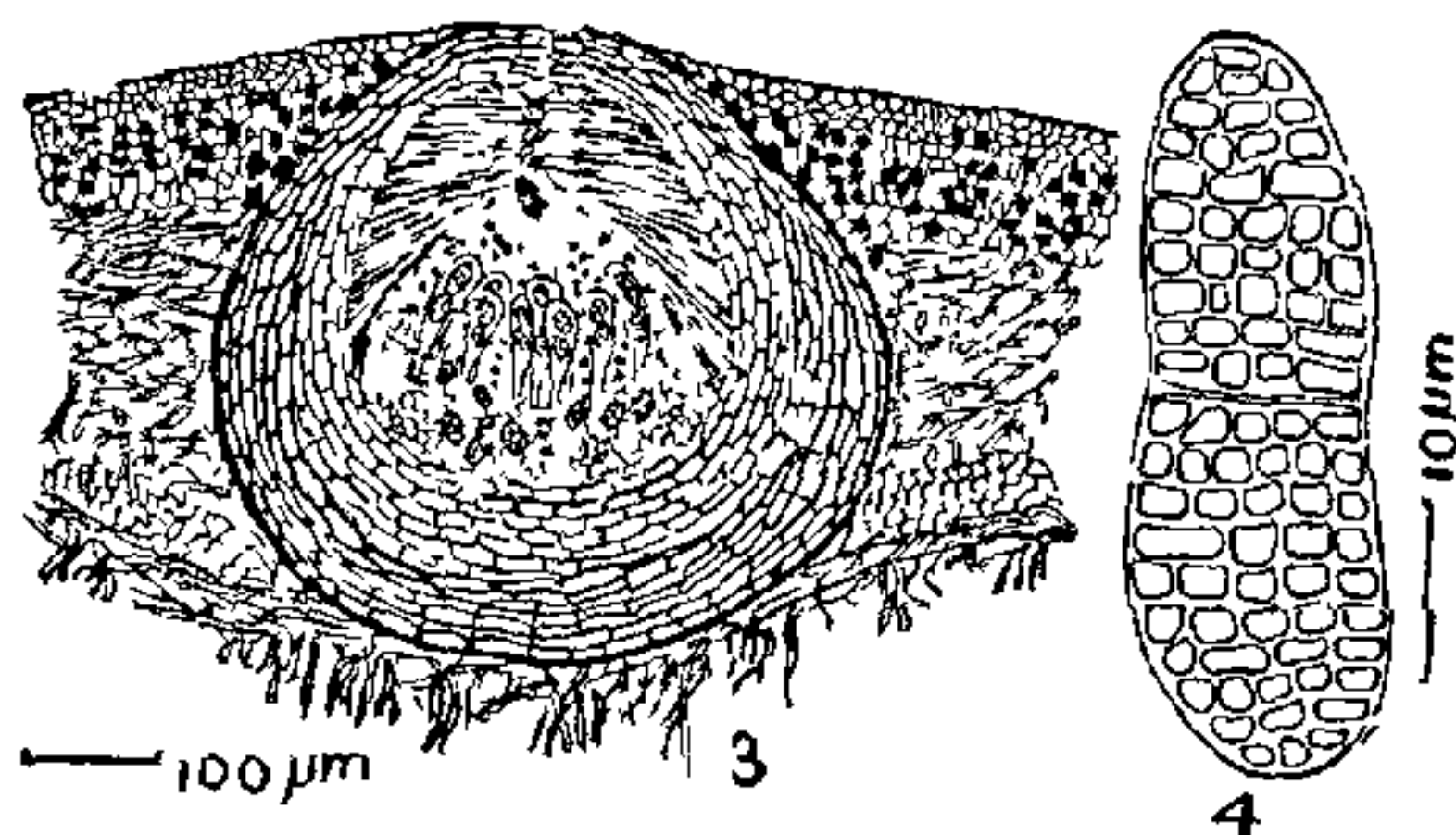
Specimens examined: Poona, P. G. Patwardhan—74-314, 315, 316, 317, 318, 319, 320—AMH.

Distribution: Europe, Egypt, Cape of Good Hope, Israel and now India.

2. *Endocarpon pusillum* Hedw. in Descript. et Adumbrat. Muscor. Frondos. 2: 56, 1789 (Figs. 3, 4).



FIGS. 1-2. Fig. 1. *Dermatocarpon hepaticum* (Ac.) Th. Fr. V.S. of thallus through perithecium. Fig. 2. Ascospores.



FIGS. 3-4. Fig. 3. *Endocarpon pusillum* Hedw. V.S. of thallus through perithecium. Fig. 4. Ascospores.

Thallus squamulose, closely adpressed, pale green when fresh, 1.0-2.0 mm broad; squamules 0.4-0.6 mm broad, 400-500 μm thick, corticated on both sides; upper cortex paraplechtenchyamator's, 70-100 μm thick, lower cortex 80-100 μm thick, dark brown to black at lower part; algal layer continuous below upper cortex; perithecia immersed, scattered, 400-500 μm in diam., hymenium hyaline I-, containing algae; perithecial wall thick, hyaline; asci cylindrical to clavate, unitunicate, bisporous; ascospores oblong to ellipsoid, slightly constricted at the centre, muriform, hyaline, ends obtuse, $12-26 \times 35-60 \mu\text{m}$ in size.

Specimens examined: Purandar Fort, M. B. Nagarkar—77-802, 813—AMH.

Distribution: North America, Europe, Pakistan and now India.

Remarks: This genus is characterised by (muriform ascospores and presence of algae in the hymenium. It was previously reported from Indian subcontinent—from Gujranwala, Punjab, Pakistan—by Smith² and Chopra¹.

We are thankful to Prof. M. N. Kamat, M.A.C.S. Research Institute, Pune 4 and Dr. Mason E. Hale, Smithsonian Institution, Washington, D.C., U.S.A., for their keen interest in this work. The work was supported by a National Science Foundation, Washington, D.C., U.S.A. grant (GF-36745) to the M.A.C.S. Research Institute, Pune 4.

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A NEW REPORT ON THE COPROPHILOUS ASCOMYCETES FROM INDIA—I

Mycoarachis inversa

DURING the investigation of the Coprophilous Ascomycetes from India, the author collected *Mycoarachis inversa* Malloch and Cain, on the dung of buffalo. This genus was erected by Malloch and Cain¹ to accommodate a cleistothecial fungus in the family Pseuderoeciaceae. The characteristic features of the fungus as reported by Malloch and Cain¹ are: Non-stromatic, non-ostiolate, sub-globose to globose ascocarps; colour of the ascocarp varies from olive green to black; asci 8-spored, irregularly disposed, sub-globose to globose; ascospores two-celled, hyaline, smooth, without germ pore or slit.

HABITAT: On buffalo dung, Delhi, April 8, 1976, Meera Sharma (RUBL No. 2565).

The author is grateful to Prof. B. Tiagi and Dr. B. L. Jain for encouragement and suggestions, University of Rajasthan for awarding scholarship.

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