

**Zeitschrift:** Mycologia Helvetica  
**Herausgeber:** Swiss Mycological Society  
**Band:** 4 (1990-1991)  
**Heft:** 2

**Artikel:** Two new Gasteromycetes from Madhya Pradesh (India)  
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**DOI:** <https://doi.org/10.5169/seals-1036494>

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## Two New Gasteromycetes from Madhya Pradesh (India)

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**Summary:** Two new species of gasteromycetous fungi, *Hymenogaster indicus* sp. nov. and *Hysterangium areolatum* sp. nov. are reported.

**Zusammenfassung:** Zwei neue Gasteromyceten, *Hymenogaster indicus* sp. nov. und *Hysterangium areolatum* sp. nov. werden beschrieben.

**Résumé:** Deux nouvelles espèces de gastéromycètes, *Hymenogaster indicus* sp. nov. et *Hysterangium areolatum* sp. nov. sont décrites.

The work on Gasteromycetes in India dates back to the time of Berkeley (1856) and Lloyd (1904-1919). Thereafter, important contributions were made by Butler and Bisby (1931), Mathur (1936), Ahmad (1939, 1952), Sohi et al. (1964), Gupta et al. (1974), Khare (1976), and more recently in a series of papers on the Gasteromycetes of the Himalayas, by Thind et al. (1977-1987).

Most of the above-mentioned work was done in temperate regions of this country. Since no work on Gasteromycetes has been done so far in Madhya Pradesh, which abounds with thick mixed tropical deciduous forests, a detailed study on these fungi was undertaken.

During the intensive survey of forests in the latter part of the rainy seasons of 1988 and 1989, 92 forms were collected. Two new species, one each of *Hymenogaster* Vitt. and *Hysterangium* Vitt., were found and are reported here. A review of the literature (Vittadini 1931, Dodge and Zeller 1934, Soehner 1962, Zeller and Dodge 1929, Cunningham 1942 and Coker and Couch 1928) reveals that these species differ in taxonomical characters from the species reported so far, and, therefore, are being proposed as new species. The type specimens have been deposited in the Mycological Herbarium of Govt. Science College, Jabalpur, Madhya Pradesh.

*Hymenogaster indicus* sp. nov. Plate 1, fig. 1,2; Plate 2, fig. 1

Fructificationes partem vel toto immersae in stramentum foliorum putrescentium, gregariae quinae vel senae aggregatae, subglobosae, 2.5-4.0 cm diam., extra vivide aureo-flavae, siccitate ochraceae, statu vivo intense male olentes, filis rhizomorphis fragilibus ad basim; peridium laeve, fragile, irregulariter dehiscens; gleba alba ad lutea statu vivo, maturans ferruginea; laminae tramae compressae; cavitates glebae irregulares, imprimis vacuae, deinde sporis expletas; columella nulla; basidia saepissime bispora; basidiosporae ellipsoideae ad ovoideae, pallide ad obscure fuscae, 8.5-13.5 x 8.0 - 11.5  $\mu\text{m}$ , ad apicem acuminate, pedicellatae, pedicello ad 4  $\mu\text{m}$  longo; exosporium gelatinosum, insigniter areolatum.

Fructifications partly or entirely buried in leaf litter, gregarious, 5-6 in a group, subglobose, 2.5-4.0 cm diam.; exteriorly bright golden yellow, on drying yellow-brown, having a very strong, unpleasant odour when fresh, with fragile rhizomorphic strands at base; peridium smooth, fragile, dehiscence irregular; gleba white to yellow when fresh, changing to ferruginous on maturity; tramal plates compressed; glebal chambers irregular in shape, empty at first, being filled on sporulation; columella absent; basidia chiefly 2-spored; basidiospores elliptical to ovoid, light to dark brown, 8.5-13.5 x 8.0-11.5  $\mu\text{m}$ , acuminate, pedicellate, pedicel up to 4  $\mu\text{m}$  long, exospore gelatinous, markedly areolate.

Peridium single-layered, up to 250  $\mu\text{m}$  thick, composed of much entangled, densely packed texture intricata; hyphae thin-walled, 3-3.5  $\mu\text{m}$  wide, thin-walled hyphae 4  $\mu\text{m}$  wide.

The specific epithet was chosen after the name of the country.

Collections examined: From leaf litter under the natural Sal (*Shorea robusta* Gaertn.) forests Kapildhara, Sone Mudha, BALCO at Amarkantak (M.P.) India. The type specimens have been deposited in the Mycological Herbarium of Govt. Science College, Jabalpur, India under the Accession No. GSC/88/14 dated 9-9-88.

This species was noticed to occur abundantly in the Sal forests of Amarkantak area in M. P. India. It agrees closely with the description of *Hymenogaster aureus* Rodway (Cunningham 1942) in the colour of the fruit body but differs in the shape and size of the spores and having a very strong, unpleasant odour. *H. foetidus* Coker & Couche (1928) also possesses the strong and unpleasant odour but the present species differs in colour of the fruit body and the shape and size of the spores.

*Hysterangium areolatum* sp. nov. Plate 1 fig. 3,4; Plate 2 fig. 2

Fructificationes epigeae, gregariae, senae vel denae aggregatae, subglobosae, 2.5-6.5 cm diam., ochraceae, rhizomorphis singulis affixae; peridium

tenue, tenax, areolatum, more indehiscens; gleba spongiosa, morella albescens, versus maturitatem obscure ferruginea, laminae tramae 30-50  $\mu\text{m}$  crassae, hyalinae, firmae propter pseudoparenchyma dense compactum, aliquantum gelatinosae; columella valida, basalis; cavitates glebae irregularis, sporis toto expletas; basidiosporae elongatae, ellipsoideae vel ovoideae, ferrugineae, 10-15.5  $\times$  6.5-11  $\mu\text{m}$ , acuminate, pedicellatae, pedicello ad 5  $\mu\text{m}$  longo; exosporium gelatinosum, laeve, uniguttulatum.

Fructifications epigeous, gregarious, 6-10 in a group, subglobose, 2.5-6.5 cm diam. ochraceous, attached by one basal rhizomorph; peridium thin, tough, areolate, usually indehiscent; gleba spongy, whitish when young, changing to dark ferruginous brown on maturity; tramal plates 30-50  $\mu\text{m}$  thick, hyaline, firm of densely compacted pseudoparenchyma, somewhat gelatinised; columella stout, basal; glebal chambers irregular, being completely filled with spores; basidiospores elongate, ellipsoid or ovoid, ferruginous, 10-15.5  $\times$  6.5-11  $\mu\text{m}$ , acuminate, pedicellate, pedicel up to 5  $\mu\text{m}$  long, exospore gelatinous, smooth, one-guttulate.

Peridium single-layered, up to 150  $\mu\text{m}$  thick, composed of thin-walled, hyaline, septate, 3-4.5  $\mu\text{m}$  thick hyphae in a textura intricata.

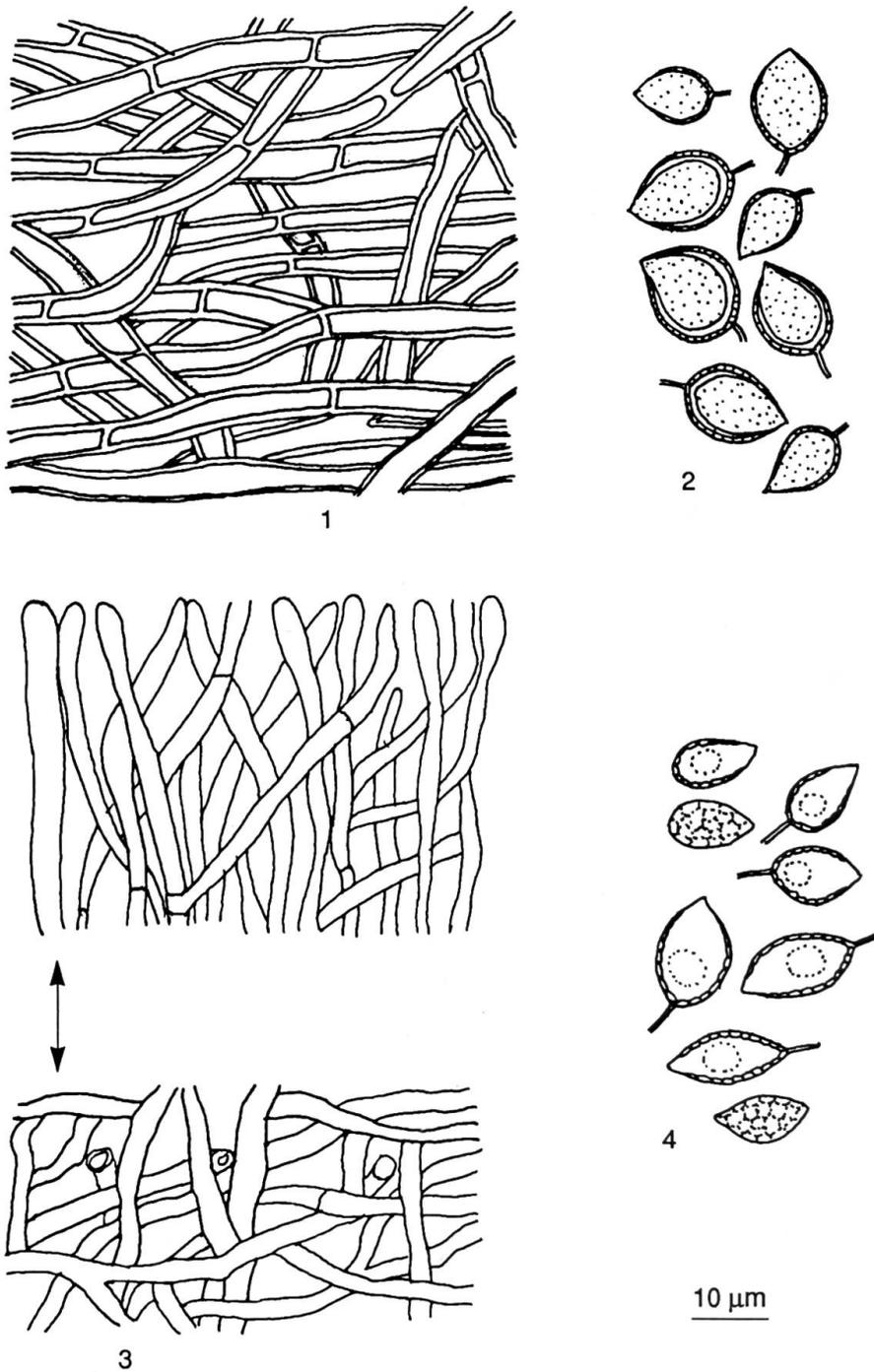
The specific epithet was chosen for the areolate peridium.

Collections examined: From soil under natural Sal forests (*Shorea robusta*) at BALCO, Jagatpur, Kaber chabutra, Amarkantak (M.P.), India. The type specimens have been deposited in the Mycological Herbarium of Govt. Science College, Jabalpur, India under Accession number GSC/88/18 dated 8-9-88.

This species was noticed to occur abundantly in the Sal forests of the Amarkantak area in M.P., India. It resembles *Hysterangium moseley* (Berk. & Br.) Zeller & Dodge and *H. tunicatum* G. H. Cunningham in having a single-layered peridium but differs with the former in having a well-defined columella and in spore characters and with the latter in having ferruginous gleba and in spore characters.

#### Acknowledgements

Financial assistance received from the Madhya Pradesh Council of Science and Technology, Bhopal, India in the form of a mini research project No B-83/87 is thankfully acknowledged.



## Plate 1

Fig. 1,2: *Hymenogaster indicus* sp. nov., Hyphae from the peridium and basidiospores.  
 Fig. 3,4: *Hystgerangium areolatum* sp. nov., Hyphae from the peridium and basidiospores.



Fig. 1: *Hymenogaster indicus* fruit bodies, 1:1



Fig. 2: *Hysterangium areolatum* fruit bodies, 1:1

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