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Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

# MYCOTAXON

*AN INTERNATIONAL JOURNAL DESIGNED TO EXPEDITE PUBLICATION  
OF RESEARCH ON TAXONOMY & NOMENCLATURE OF FUNGI & LICHENS*

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NEW BRAZILIAN HETEROBASIDIOMYCETES

B. LOWY

Reprinted from MYCOTAXON 29: 11-19. 1987.

## NEW BRAZILIAN HETEROBASIDIOMYCETES

B. Lowy

Botany Department, Louisiana State University  
Baton Rouge LA 70803

## ABSTRACT

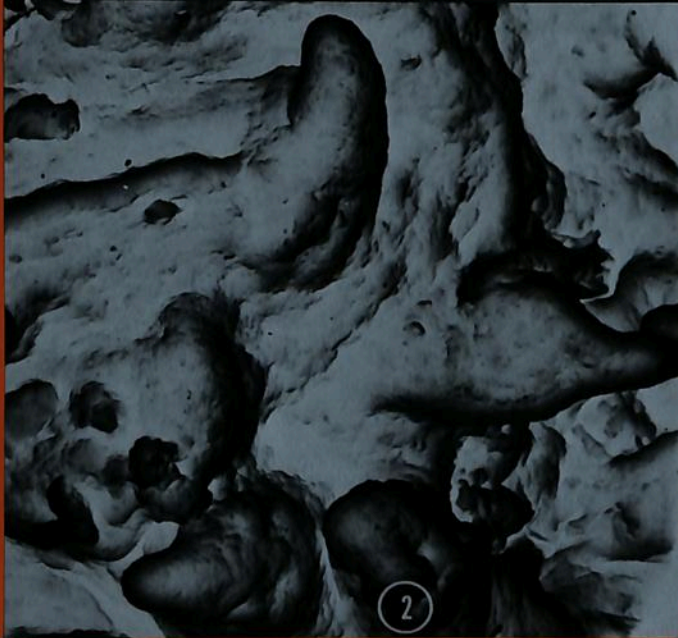
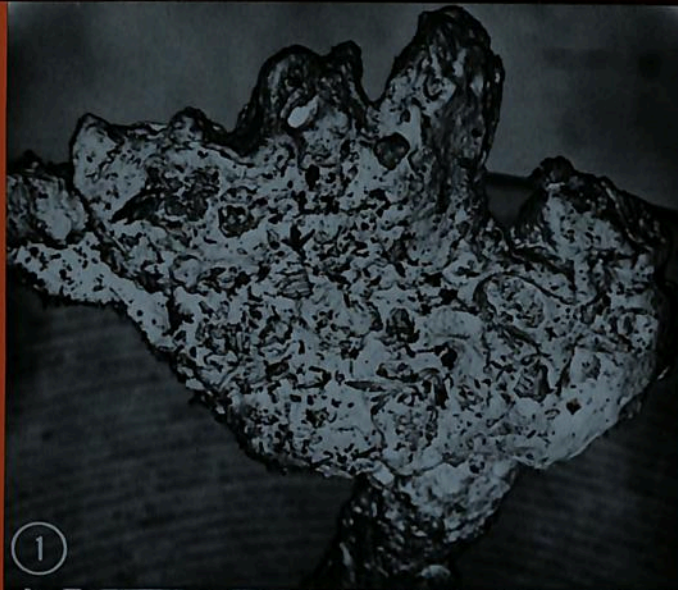
Three new species of Heterobasidiomycetes are reported from the Ilha de Maracá, Roraima, Brasil: *Dacryopinax crenata*, *Exidia maracensis*, and *Heterochaete bodmanii*. Other collections of Auriculariaceae, Tremellaceae, and Dacrymycetaceae are also listed.

Ilha de Maracá, located at 3°15'-3°35' N. Lat., 61°22'-61°58' W. Long., in the State of Roraima, is one of 16 biological stations designated by the Brazilian government as an ecological reserve. The riverine island, bounded by northern and southern branches of the Uraricoeira river, is one of the largest of such islands known, measuring approximately 65 x 25 km, constituting an area of 92,000 hectares. At present, only a small section at the eastern extremity of the island has been made accessible by trails cut through the forest. The limited access to the island, which requires special permission and carefully scrutinized credentials in order to carry out biological studies there is exemplary, and establishes a model much to be desired in many other regions of Brazilian Amazonia as well.

*Dacryopinax crenata* Lowy, sp. nov.

Fig. 1.

Fructificatio in humido elastico-gelatinosa, stipitata et pileata, aurantio-rubiginosa, sicca cornea, succina; pileo crenata, rugulosa, usque ad 4 mm late X 1 mm crassa; caulis subcylindraceus, rugosa, 10 mm alt X 1.5 mm crassa; hyphae enodosae; probasidia cylindracea, unicellularis, 15-20 x 3.0-3.5  $\mu$ m; metabasidia aseptata, bifurcata, 20-26 x 3-4  $\mu$ m; basidiosporae curvulo-cylindraceae, 8-10 x 3.5-4.0  $\mu$ m, postremo 1-septatae.



Fructification stipitate, pileate, rubbery gelatinous, rusty orange when fresh, drying dark amber, horny; pileus expanded, rugulose, up to 4 mm broad x 1 mm thick, with projecting lobules forming a crenate margin; stipe up to 10 x 1.5 mm, subcylindrical, coarsely and irregularly grooved; hyphae without clamp connections; probasidia cylindrical, unicellular, 15-20 x 3.0-3.5  $\mu$ m; metabasidia unicellular, furcate, 20-26 x 3.0-3.5  $\mu$ m, producing thick, cylindrical sterigmata; basidiospores curved cylindrical, 8.0-10.5 x 3.5-4.0  $\mu$ m, becoming 1-septate.

**HOLOTYPE:** Ilha de Maracá, Roraima, Brasil. On unidentified, decorticated wood. 9-VI-1986. Lowy 1671R. LSUM, INPA.

The genus Dacryopinax was established by Martin (1948) to include species differing from other members of Dacrymycetaceae by being "erect, stipitate and pileate, cupulate or spatulate when young, becoming fan-shaped or petaloid ...". Mature basidia of Dacryopinax, like other members of the family, are unicellular and bifurcate, the stout, elongate sterigmata (epibasidia sensu Martin) producing spore-bearing spicula (sensu Donk and Talbot; 1954, 1973) that pierce the hymenium, which is inferior. The pileus of D. crenata (Fig. 1) with its coarsely crenate margin is quite distinctive, although somewhat reminiscent of the deeply lobed, foliose pileus of D. indacocheae Lowy (1959). The pileus of D. crenata, however, is relatively small and thick, and free of hairs, whereas D. indacocheae has a thin pileus, and both pileus and stalk are conspicuously tomentose. D. indacocheae is illustrated in Flora Neotropica 6, 1971 (Fig. 28C). A key to the species occurring in the American tropics was published by Lowy (1981).

**Exidia maracensis** Lowy, sp. nov.

Fig. 2.

Fructificatio in humido cartilagineo-gelatinosa, foliosa, brunnea, 2.5 x 2.0 cm late x 1 mm crassa; sicca cornea, atrobrunnea; hymenio inferiori, convoluta, cum papillis numerosis, 105-120 x 25-35  $\mu$ m; hyphae enodosae;

Figs. 1-2. 1. Pileus and part of stipe of Dacryopinax crenata. X 25.

2. Papillae crowded on hymenial surface of Exidia maracensis. X 500.



probasidia subglobosa, 10.0-12.5  $\mu\text{m}$  diam; metabasidia cruciatim septata, 14.5-18.0 x 10.0-12.5  $\mu\text{m}$  diam; basidiosporae allantoideae, 5.5(-6.5) x 3.5  $\mu\text{m}$ , per repetitionem germinantes.

Fructification tough cartilaginous-gelatinous, foliose, up to 2.5 x 2.0 cm x 1 mm thick, light brown, drying darker, horny; hymenium inferior, convolute, bearing numerous papillae, 105-120 x 25-35  $\mu\text{m}$ ; hyphae without clamp connections; probasidia unicellular, globose to subglobose, 10.0-12.5  $\mu\text{m}$  diam; metabasidia cruciate septate, 14.5-18.0 x 10.0-12.5  $\mu\text{m}$  diam; basidiospores allantoid, 5.5(6.5) x 3.5  $\mu\text{m}$ , germinating by repetition.

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Macroscopically, this robust species of *Exidia* bears a superficial resemblance to some species of *Tremella*, but the papillate hymenium (Fig. 2) excludes it from that genus. Microscopically, the basidiospores are typically exidioid, being curved-cylindrical, as opposed to the subglobose or ovoid basidiospores of most *Tremella* spp. Noteable, however, in this *Exidia*, are the small basidiospores which measure approximately half the length of most species of the genus I have examined, both tropical and temperate.

Among tropical species of *Exidia* that I have reported (Lowy 1971), only *E. recisa* is foliose to erect lobate, but differs from the new species in virtually all other significant characteristics. To cite the major ones: *E. recisa* dries thin and black, with relatively scattered, black papillae. Microscopically, it is characterized by its large spores (about 12-15  $\mu\text{m}$  x 4-5  $\mu\text{m}$ ), and clamp connections.

**Heterochaete bodmanii** Lowy, sp. nov.

Figs. 3-4.

Fructificatio resupinata, tenua, arida, rosaria; sicca concolorata; in sectione 60-80  $\mu\text{m}$  crassa; setulis numerosis, cylindricis, subhymenio emergentibus, 100 x 35  $\mu\text{m}$ ; hyphae

Figs. 3-4. 3. Distribution of pegs on hymenial surface of *Heterochaete bodmanii*. X 25.  
4. Peg detail. X 200.



enodosae; probasidia globosa vel subglobosa; 10.0-12.0  $\mu\text{m}$  diam; metabasidia pryformis, cruciatim septata, 20.0-25.5 x 6.0-7.5  $\mu\text{m}$ ; basidiosporae curvulo-cylindraceae, 12.0-15.0 x 6.0-7.5  $\mu\text{m}$ , per repetitionem germinates.

Fructification resupinate, arid, light pinkish when fresh, drying concolorous, 60-80  $\mu\text{m}$  thick; hymenial pegs numerous, cylindrical, up to 100 x 35  $\mu\text{m}$ , arising from subhymenium; hyphae without clamp connections; probasidia unicellular, globose to subglobose, 10.0-12.0  $\mu\text{m}$  diam; metabasidia pyriform, cruciate-septate, 20.0-25.5 x 6.0-7.5  $\mu\text{m}$ ; basidiospores curved-cylindrical, 12.0-15.0 x 6.0-7.5  $\mu\text{m}$ , germinating by repetition.

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The most reliable reference to the morphology and taxonomy of the genus *Heterochaete* is the monograph by Bodman (1952). Her diligence resulted in the acceptance of 29 species, 25 of which were originally reported from tropical habitats. Many are still known only from their type localities. *H. bodmanii* appears to be closest to *H. andina* Pat. & Lag. as described by Bodman, but differs in several key characters, among these being the lack of clamp connections and sterile subhymenial elements, the absence of gelatinization in both pegs and hymenium, and the distinctly 4-celled basidia. The pegs (Figs. 3-4) are abundant and closely spaced, about 100  $\mu\text{m}$  apart. For a comparison with the gross morphology (SEM photograph) of the pegs of *H. maculata* Lowy, reference may be made to Lowy (1977).

Sterile elements, including papillae, pegs, and cystidia are often sufficiently distinctive to assist in the identification of some *Heterobasidiomycetes*, and occasionally they may be diagnostic on the genus or species level. Scanning electron micrographs of *Auricularia fuscusuccinea* hairs (Fig. 6) and of a cystidiophore of *Heterochaetella cystidiophora* (Fig. 5), both collected on Maracá island, are

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Fig. 5. Cystidiophores with cystidia on hymenial surface of *Heterochaetella cystidiophora*. X 500.

Fig. 6. Hairs on abhymenial surface of *Auricularia fuscusuccinea*. X 500.

provided to indicate significant morphological differences among conspicuous sterile elements of the 5 genera illustrated.

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Lowy 1217R, 5-VI-1986; Lowy 1375R, 9-VI-1986; Lowy 1440R, 11-VI-1986; Lowy 1491R, 12-VI-1986; Lowy 1497R, 13-VI-1986; Lowy 1803R, 24-VI-1986; Lowy 1833R, 25-VI-1986; Lowy 1858R, 25-VI-1986; Lowy 1928R, 26-VI-1986; Lowy 2170R, 3-VII-1986; Lowy 2151R, 2-VII-1986.

A. mesenterica Pers.

Lowy 1255R, 6-VI-1986.

Helicogloea lagerheimii Pat.

Lowy 1216R, 5-VI-1986; Lowy 1530R, 13-VI-1986.

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Exidia nucleata (Schw.) Burt

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Pseudohydnum gelatinosum (Fr.) Karsten

Lowy 1769R, 24-VI-1986.

Tremella fibulifera Möller

Lowy 1735R, 24-VI-1986; Lowy 2122R, 2-VII-1986.

## DACRYMYCETACEAE

Calocera cornea Fr.

Lowy 1978R, 28-VI-1986.

Dacryopinax elegans (Berk. & Curt.) Martin

Lowy 1907R, 26-VI-1986.

D. spathularia (Schw.) Martin

Lowy 1343R, 8-VI-1986; Lowy 1215R, 2-VI-1986.

## ACKNOWLEDGMENTS

Thanks are due The New York Botanical Garden, the Instituto Nacional de Pesquisas da Amazônia (INPA), and Louisiana State University, under whose joint sponsorship the field work was undertaken. The cooperation of Sr. Gutemberg Moreno de Oliveira, Administrator of Maracá, merits special praise. I also gratefully acknowledge the technical assistance of Dr. Sharon Matthews, Botany Dept., LSU, who provided the SEM photographs.

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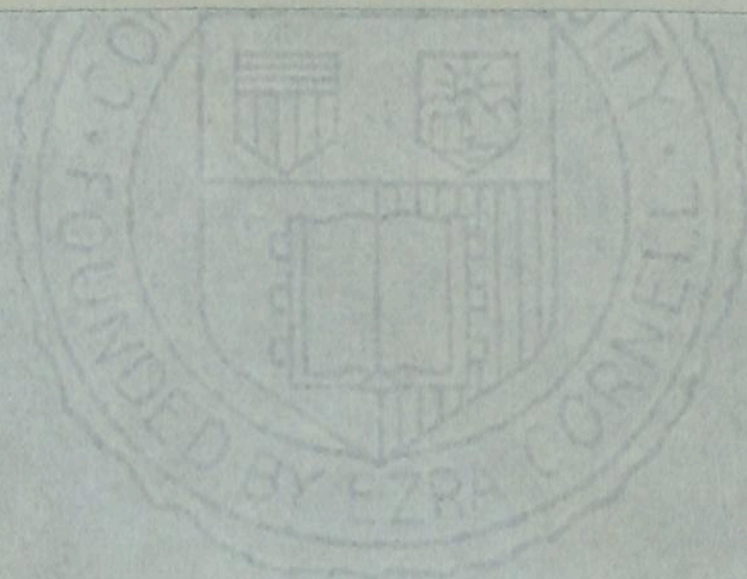
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Vol. XXIX, pp. 11-19

July-September 1987

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Fructifications stipitate, pileate, rubbery, gelatinous, rusty orange when fresh, drying dark amber, horny; pileus expanded, rugulose, up to 4 mm broad x 1 mm thick, with projecting lobules forming a crenate margin; stipe up to 10 x 1.5 mm, subcylindrical, coarsely and irregularly grooved; hyphae without clamp connections; probasidia cylindrical, unicellular, 15-20 x 3.0-3.5  $\mu$ m; metabasidia unicellular, furcate, 20-26 x 3.0-3.5  $\mu$ m, producing thick, cylindrical sterigmata; basidiospores curved cylindrical, 8.0-10.5 x 3.5-4.0  $\mu$ m, becoming 1-septate.

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probasidia subglobosa, 10.0-12.5  $\mu$ m diam; metabasidia cruciatim septata, 14.5-18.0 x 10.0-12.5  $\mu$ m diam; basidiosporae allantoideae, 5.5(-6.5) x 3.5  $\mu$ m, per repetitionem germinantes.

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Lowy 1769R, 24-VI-1986.

Tremella fibulifera Möller

Lowy 1735R, 24-VI-1986; Lowy 2122R, 2-VII-1986.

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## DACRYMYCETACEAE

Calocera cornea Fr.

Lowy 1978R, 28-VI-1986.

Dacryopinax elegans (Berk. & Curt.) Martin

Lowy 1907R, 26-VI-1986.

D. spathularia (Schw.) Martin

Lowy 1343R, 8-VI-1986; Lowy 1215R, 2-VI-1986.

## ACKNOWLEDGMENTS

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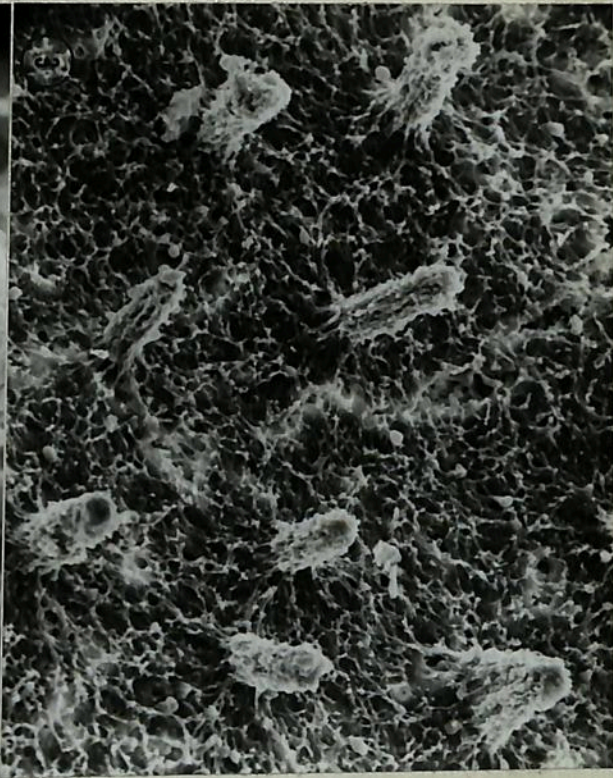
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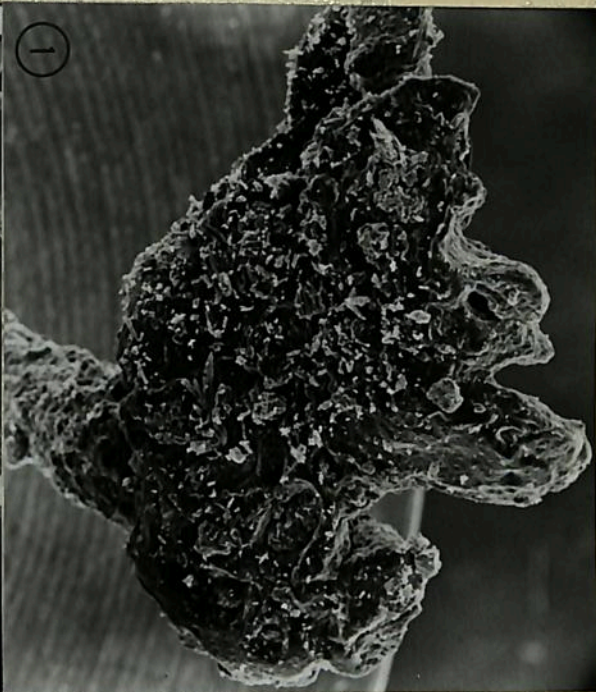
Fig. 5. Cystidiophores with cystidia on hymenial surface  
of Heterochaetella cystidiophora. X 500. Fig. 6.  
Hairs on abhymenial surface of Auricularia fuscosucci-  
nea. X 500.



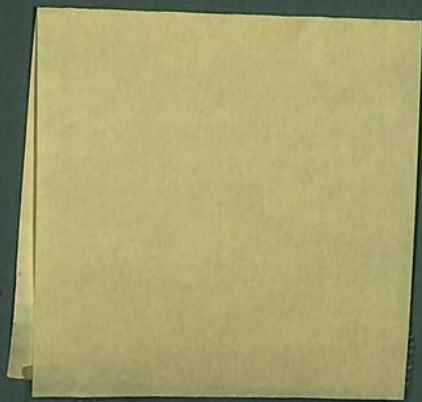
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Figs. 3-4. <sup>3</sup> Distribution of pegs on hymenial surface of  
Heterochaete bodmanii. X 25. 4. Peg detail.  
X 200.



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- Figs. 1-2. 1. Pileus and part of stipe of Dacryopinax crenata. X 25.  
2. Papillae crowded on hymenial surface of Exidia maracensis. X 500.