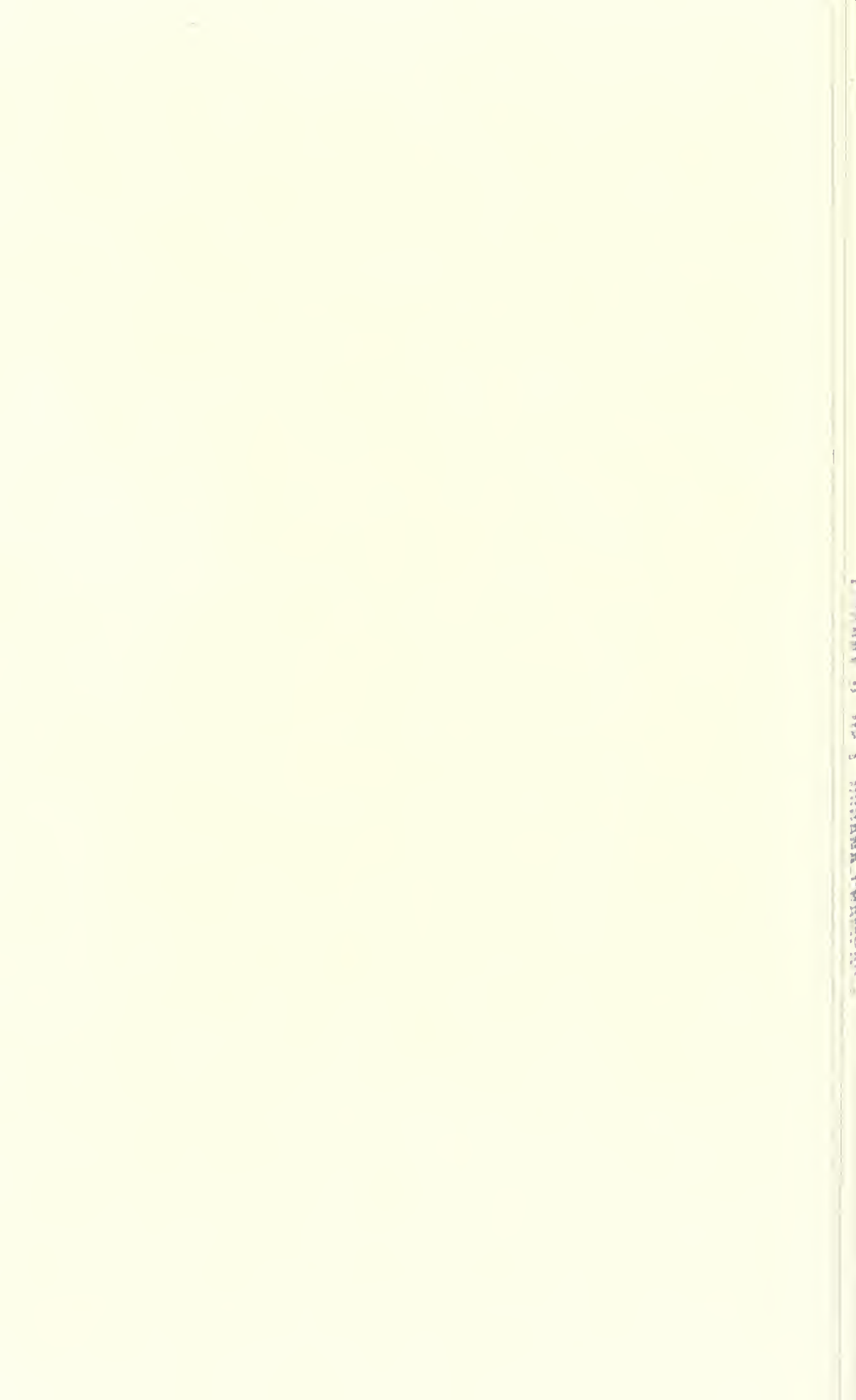


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Notes On *Calvatia* (Lycoperdaceae), I

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My studies toward a revision of the genus *Calvatia* included a re-examination of the type of *C. umbrina* Lloyd. I have concluded that this species, in reality, belongs to *Bovista* and that the corresponding transfer should be made.

The structure of the peridia of the type specimen does suggest, as Lloyd (1904) noted, that of *Bovista pila* Berk. & Curt. Lloyd, however, was misled by the dehiscence of the endoperidium, which he interpreted as being similar to that of *Calvatia*.

A re-examination of the endoperidium disclosed a leathery consistency typical of that of the genus *Bovista* (see description). The complete absence of a sterile base and the dark color of the gleba (dark umber or dark cocoa) strengthened my first impression that it was indeed a *Bovista*. The microscopic characters of the branching and intertwined, deeply colored capillitium, and the short-pedicellate, smooth spores all corroborate this conclusion and suggest the position of Lloyd's species in *Bovista* subgenus *Globaria*.

The epithet *umbrina* has been used for a different species of *Bovista* by Bottomley (1948), now called *B. fusca* Lév. I propose to adopt the specific epithet *cacao*, referring to the color of the gleba. The name of this species therefore will be *Bovista cacao*.

Bovista cacao P. Ponce, *nomen novum*. *C. umbrina* Lloyd, Myc. Writ. 1 (L1): 2. 1904. Illustrations: Zeller & Smith, The genus *Calvatia* in North America, Lloydia 27(3): 174 (plate XI), 1964.

Basidiocarps 4-6 cm. in diameter, globose to subglobose, attached below by a single, small cord; exoperidium thin, smooth, yellowish brown, of slender, cyanophilous hyphae, these ribbon-shaped, 7-10 μ wide with very thin walls which
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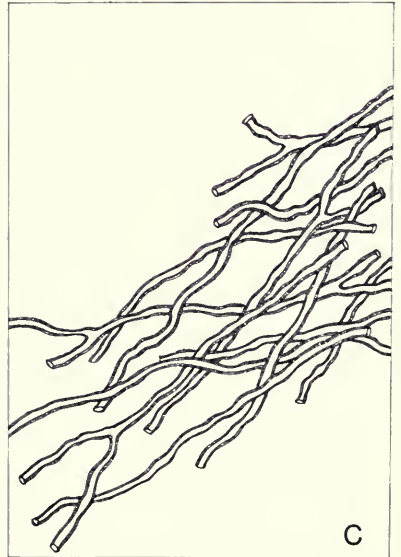
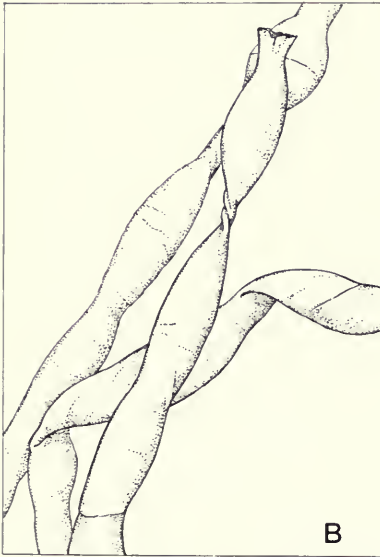
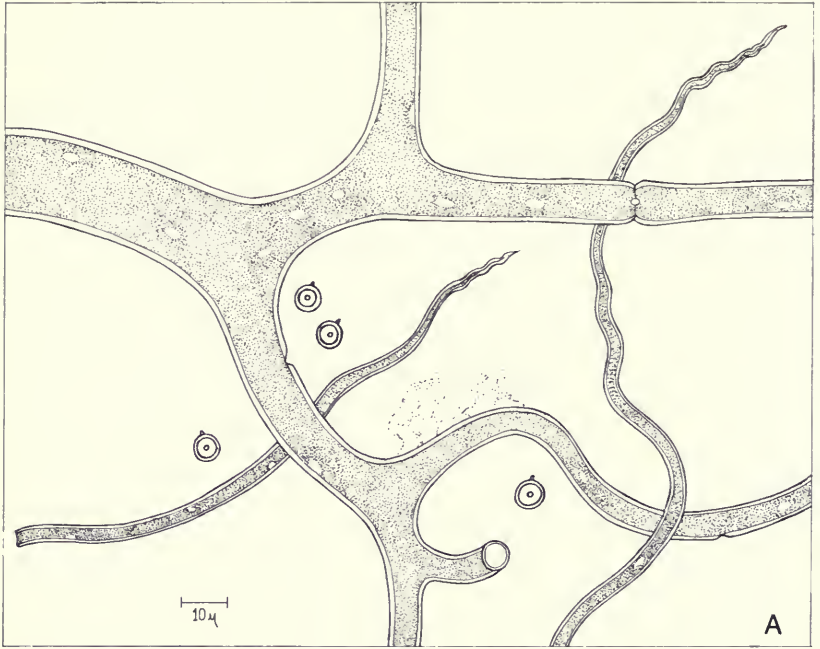


FIG. 1. *Bovista cacao*. A, capillitium and spores; B, exoperidium hyphae; C, endoperidium hyphae.

disappear promptly, leaving only partial remnants; endoperidium thin, smooth, dark brown, almost black, and somewhat reminiscent of the endoperidium of *Bovista pila*, composed of slender hyphae, 3-4 μ wide, cylindrical with very thick walls and irregular ramifications; these hyphae interwoven in a very close mesh, causing the leathery consistency of the endoperidium; dehiscence is by a large, irregular opening; gleba without sterile base, dark umber or cocoa color, not powdery; capillitium threads brown, slowly cyanophilous, broken into large fragments, very much branched, forming independent units very difficult to separate because the long, tapering branches are intertwined, each unit composed of some central pieces 15-20 μ wide with branches which become gradually narrower, from 10 to 5 μ wide, these also branching into very slender, tapering ramifications ending in subacute apices, the slender branches very irregular and interwoven, the walls about 1 μ thick, smooth and pitted, the pits more or less round and small, threads septate, some broadened at the septa; spores 4-9 μ in diameter, globose to subglobose, smooth, pale brown, with a thick wall and a stump of a pedicel; in the preparation it is possible to observe several broken pedicels among the spores as well as some strongly cyanophilous fragments of probable hymenial origin.

Type species. — *Erhorn s.n.* Mountain View, California, Lloyd catalog no. 20679 (BPI).

Distribution. — Known only from the type locality.

Habitat. — On the ground.

Discussion. — This species was compared with *Calvatia hesperia* by Lloyd (1904), but, in my view, there is no similarity between these two species. Although the peridia resemble those of *Bovista pila*, the capillitium is different, belonging to another subgenus in Kreisel's (1967) classification of the Bovistas.

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