

GLOMUS SEGMENTATUS SP. NOV.

JAMES M. TRAPPE

Pacific Northwest Forest and Range Experiment Station, Forestry Sciences Laboratory, Corvallis, Oregon 97331, U.S.A.

In 1976 M. H. Ivory, Commonwealth Forestry Bureau, Oxford, collected an unusual sporocarp in Belize. B. M. Spooner, Royal Botanic Gardens, Kew, determined it as probably an undescribed member of the Endogonaceae and sent it to me for further study. The results are presented here.

The specimen was preserved in FAA. Microscopic studies were done with thin, hand-cut sections mounted in lactophenol and lactophenol-cotton blue.

Glomus segmentatus Trappe, Spooner & Ivory sp. nov. (Figs. 1-2).

Sporocarpium 6 × 8 mm, pulvinatum, album, tessellatum. Gleba alutacea, segmentis arcte contiguis, tenacibus, radialibus, separabilibus. Segmenta sporis 52-110 × 40-90 μm, globosis, subglobosis, obovoideis vel ellipsoideis, laevibus, hyalinis, cyanophilis; parietes sporarum 4-8 μm crassi. Holotypus M. H. Ivory S/307.

Sporocarp 6 × 8 mm, pulvinate, firm with a basal attachment of tangled, pale yellowish brown hyphae mixed with soil, white, tessellated with convex, subpolygonal areas separated by grooves. *Gleba* pale yellow, formed of tightly packed, tough segments radiating outward from a basal pad, the segments separable as polyhedrons with rounded outer surfaces that form the tessellate pattern of the sporocarp surface, all segment surfaces enclosed in a tightly woven, tough peridium that encloses crowded chlamydo spores embedded in interwoven hyphae. *Chlamydo spores* 52-100 × 40-86 μm, globose to subglobose, obovoid, or ellipsoid, smooth, the walls and spore contents hyaline to subhyaline, strongly cyanophilous in lactophenol-cotton blue. Walls 2-layered, 4-8 μm thick including the outer wall, ±0.5 μm thick. Hyphal attachment 9-15 μm broad, hyaline, partially occluded by wall thickening which extends a short distance from the spore. Attached hyphae 12-20 μm diam, straight to slightly constricted at point of attachment, hyaline, thin-walled, extending 50-200 μm to the lateral origin from a glebal hypha, generally radiating from the basal pad of the sporocarps. *Peridial* and *glebal hyphae* 3-10 μm in diam, hyaline, the walls thin or occasionally thickened to 0.5 μm. Peridial hyphae tightly subparallel alongside each radial gleba segment but interwoven on the outer segment face. Glebal hyphae interwoven.

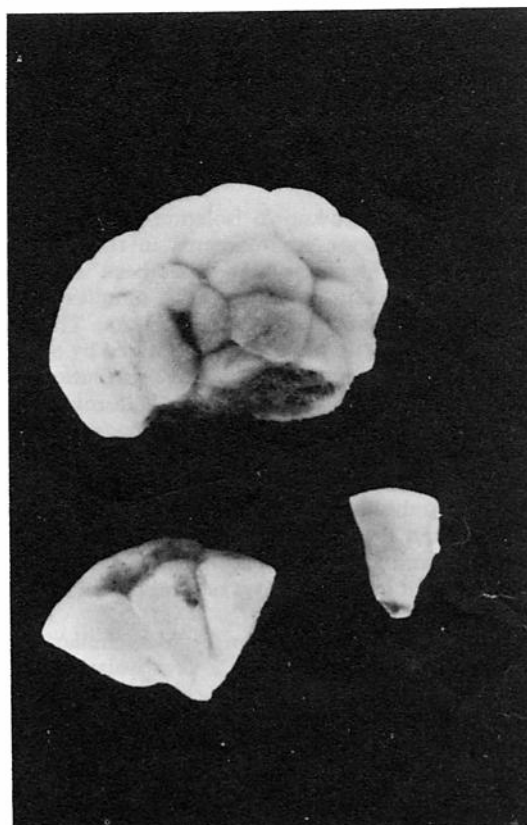


Fig. 1. Sporocarp of *Glomus segmentatus*, surface view above, segments below (×5).

Specimen examined. Solitary on bare soil surface at the edge of a bank near *Pinus caribbaea*, shrubs, herbs, and grass, Silver Creek F.S., Belize, 25 Oct. 1976, M. H. Ivory S/307 (K, holotype; OSC isotype).

The radially segmented structure of the sporocarp is unique in the Endogonaceae. The sporocarp appears solid with radial lines when vertically sectioned, but the segments are easily teased apart. In contrast to many Endogonaceae, the spores in sectioned sporocarps of *G. segmentatus* cannot be readily seen with a hand lens, because they and surrounding tissues are similar in colour.

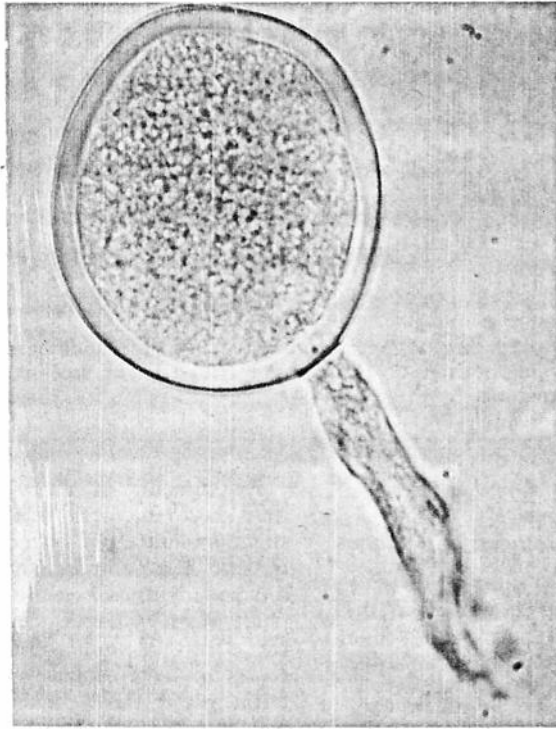


Fig. 2. Spore of *Glomus segmentatus* with attached hypha ($\times 500$).