

(pars sporif.), arising in a basal cluster, growing up into the dense filamentous centrum tissue, clavate, very long-stipitate, 8-spored; ascus stipe tapering, 30–70 μ long; *ascospores* 12.5–15.5 \times 9.0–11.2 \times 7.0–8.5 μ , ellipsoidal, flattened on two sides and thus appearing narrower in one view than in the other, slightly umbonate at both ends, with a single apical germ pore at one end, light brown by transmitted light, nearly black in mass, smooth, forming an ovoid mass in the ascus; *conidia* lacking.

On an old rug. CALIFORNIA. Los Angeles Co.: La Verne, 27 Dec., 1953; R. K. Benjamin; TRTC 46368.

Cultures of TRTC 46368 have been sent to ATCC, CBS, IMI, and RSA (204).

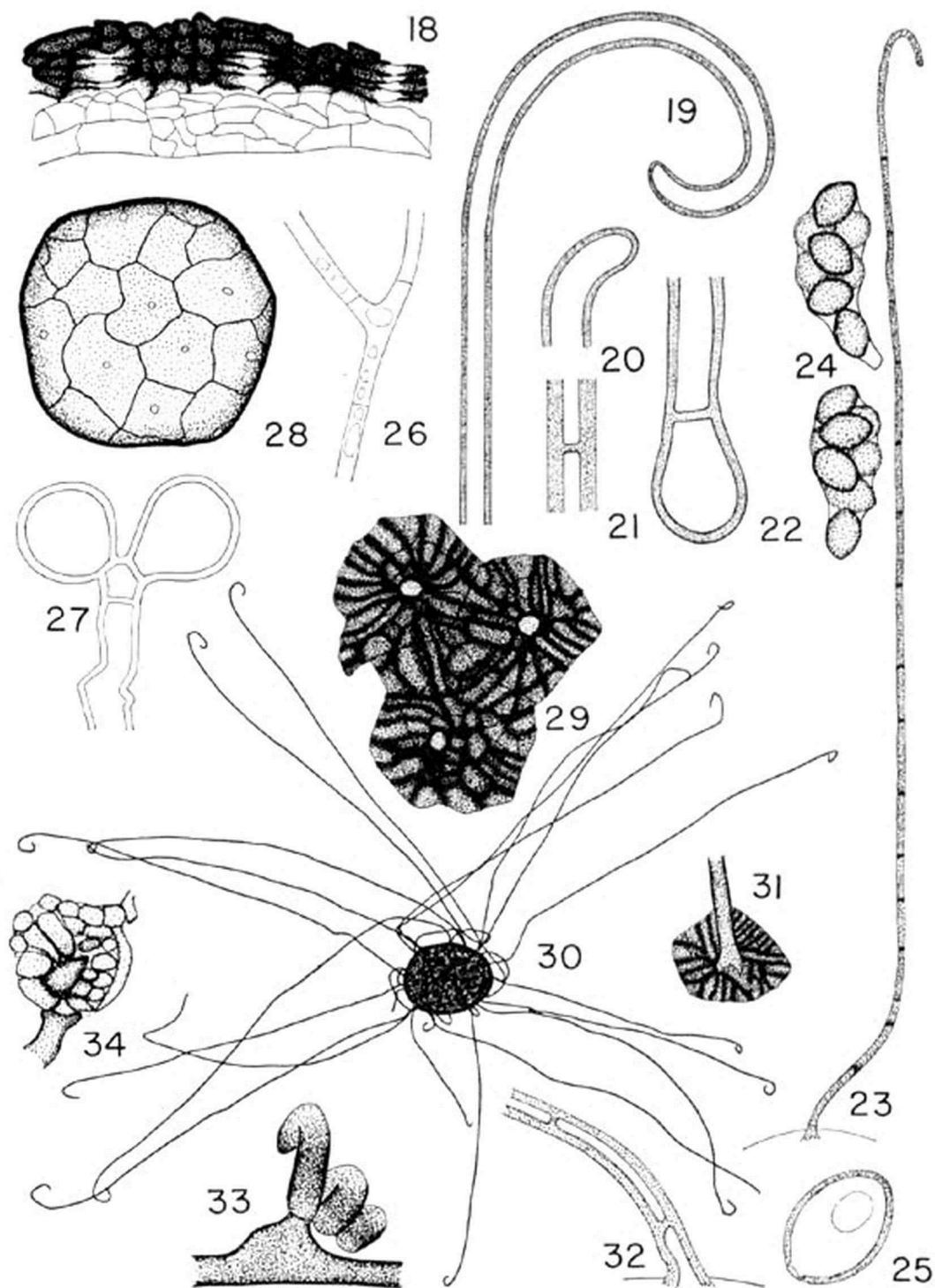
Thielavia californica is most similar to *T. peruviana* (Gochenaur) Malloch & Cain and *T. hycaniae* Nicot ex Nicot & Longis. It differs from both in having ascospores that are flattened on two sides. It is also similar to *T. fimeti* (Fckl.) Malloch & Cain, but differs in having only one type of ascocarp hair.

***Thielavia cephalothecoides* Malloch & Benny, sp. nov. FIGS. 18–34**

Coloniae in agar YpSs secundum diametrem aetate 10 dierum 7–9 cm, ad floccosae arachnoideae, ad griseae hyalinae, azonatae. Hyphae 1.5–6.3 μ crassae, ad brunneae hyalinae. Ascocarpaceae 100–215 μ crassae, globosae, fusco-brunneae, nonostiolatae, crinitae. Pili ascocarparum amplius 2 mm longi, 4.5–8.0 μ crassi, fusco-brunnei, ad apicis circinati. Peridium ascocarparum cephalothecoideum. Asci 38–50 \times 13–23 μ , in fasciculo ad basam dispositi, octospori, evanescentes, clavati. Ascosporae ellipsoideae, 12.0–15.5 \times 8.0–10.5 μ , fusco-brunneae, laeves, ad extremum uniporosae. Status imperfectus instar *Botryotrichum-Staphylotrichum* productus. Conidiophorae ad 2 mm longae, 3.5–4.5 μ crassae, ad apicis ramosae, septatae, ad hyalinae subbrunneae. Conidia 8–25 μ crassa, instar aleurioconidia producta, hyalina, unicellares, laeves, ad solitaria geminata, ad apicis conidiophoris adsociata.

Holotypus: In fimo muris, 4 miles N. of Cajon Pass, San Bernardino Co., California, 2 Jan., 1970; G. L. Benny; TRTC 46367. In Cryptogamic Herbarium, University of Toronto.

Colonies on YpSs medium attaining a diameter of 7–9 cm in 10 days at room temperature, cottony to arachnoid, hyaline to dark gray, azonate, becoming sectored; reverse cream-colored, with radiating black lines corresponding to the edges of the sectors; *hyphae* hyaline to brown, branched, abundantly septate, frequently with conspicuous septal pores, 1.5–6.3 μ in diam; *ascocarp initials* consisting of irregularly coiled or contorted side branches of the vegetative hyphae, soon branching and forming a compact mass, usually accompanied by well-developed ascocarp hairs; *ascocarps* 100–215 μ in diam, globose, black by reflected light, dark brown by transmitted light, covered with numerous (30 or more) dark brown hairs, nonostiolate; *ascocarp hairs* 2 mm or more long, 4.5–8.0 μ broad, dark brown by transmitted light, black by reflected light,



FIGS. 18-34. *Thielavia cephalothecoides*. 18. Cross section of ascocarp peridium, $\times 490$. 19-22. Optical sections of appendages. 19. Apical portion of appendage, $\times 700$. 20. Appendage tip, $\times 1,200$. 21. Median portion of appendage showing septum, $\times 1,200$. 22. Appendage base, $\times 1,200$. 23. Typical appendage, $\times 135$. 24. Asci, $\times 525$. 25. Optical section of ascospore, $\times 1,200$. 26. Hyphal segment, $\times 1,200$. 27. Conidial state, $\times 1,200$. 28. Ascocarp showing arrangement of cephalothecoid plates, $\times 300$. 29. Three cephalothecoid plates, $\times 1,200$. 30. Ascocarp, $\times 45$. 31-32. Attachment of the appendage to the cephalothecoid plates. 31. Surface view, $\times 320$. 32. Optical section, $\times 525$. 33-34. Ascocarp initials. 33. Early stage, $\times 1,200$. 34. Later stage showing enveloping hyphae, $\times 1,200$.

septate, smooth to finely roughened, frequently with small kinks, thick-walled, rarely branched, usually circinate or hooked at the apex; *ascocarp peridium* cephalothecoid, consisting of polygonal cellular plates 16–50 μ in diam, of two distinct tissue layers in cross section; peridial cells of the outer layer dark brown, thick-walled, isodiametric to rectangular in surface view (depending upon their position in the plate), 2.0–8.5 μ in diam at the center of the plate, 3.5–14 \times 2.8–5.0 μ at the margins of the plates, 2.0–3.5 μ deep, forming a layer 1–2 cells deep in cross section; peridial cells of the inner layer hyaline, thin-walled, mostly evanescent at maturity, 7–18 \times 2.0–5.6 μ , several cells deep in cross section; *asci* 38–50 \times 13–23 μ , arising from croziers in a basal fascicle, narrowly to broadly clavate, 8-spored, early-evanescent, short-stipitate; *ascospores* ellipsoidal, 12.0–15.5 \times 8.0–10.5 μ , uni- to multiseriate in the asci, light olivaceous brown by transmitted light, dark brown in mass, with apical germ pore at one end, smooth; *conidial state* consisting of long branched conidiophores bearing clusters of aleurioconidia at the apex, occasionally represented by simple arthroconidia; *conidiophores* up to 2 mm long, 3.5–4.5 μ wide, hyaline to pale brown, thin-walled, septate, branched abundantly at the apex but less frequently so below; *conidia* solitary or in pairs at the apex of the conidiophore branches, hyaline, thin-walled, 1-celled, smooth, globose to broadly pyriform, 8–25 μ in diam (*Botryotrichum* or *Staphylotrichum*).

On mouse dung. CALIFORNIA. San Bernardino Co.: 4 miles N. of Cajon Pass, 2 Jan., 1970; G. L. Benny; TRTC 46367.

Cultures of TRTC 46367 have been sent to ATCC, CBS and IMI.

Thielavia cephalothecoides, with its cephalothecoid peridium, long hooked ascocarp appendages, and *Botryotrichum-Staphylotrichum* conidial state is unique in its genus. *Aporothielavia leptoderma* (Booth) Malloch & Cain is a superficially similar species with a cephalothecoid peridium, but is probably unrelated to species of *Thielavia* [the structure and taxonomic significance of the cephalothecoid peridium type is discussed by Malloch and Cain (1970)]. *Chaetomium piluliferum* Daniels—an ostiolate form with hooked ascocarp appendages, nearly identical ascospores, and a similar conidial state—is probably the taxon most closely related to *T. cephalothecoides*. These two species appear to be more closely related to each other than to other species in their respective genera, and, as pointed out by Malloch and Cain (1973), illustrate one of the major weaknesses in the current concept of *Thielavia*.

EOTERFEZIACEAE

***Lasiobolidium orbiculoides* Malloch & Benny, sp. nov.** FIGS. 35–46

Coloniae in agar YpSs secundum diametrem aetate 4 dierum 5.0–5.5 cm, ad appressae arachnoideae, ad hyalinae rufobrunnea. Ascogonia helicoidea, gregaria.