

- persistent *Aphylophorales* or coprophilous; anamorphs, where known, *Acremonium*-, *Gliocladium*-, *Stilbella*-, *Trichoderma*- or *Verticillium*-like 7
6. Part-ascospores conical or apiculate, septum median, resulting in monomorphic part-ascospores **Arachnocrea**
6. Part-ascospores irregularly globose, septum sub-median, resulting in dimorphic part-ascospores **Protocrea**
7. Stromata prosenchymatous, up to 1.5 mm diam, discrete, pulvinate to discoidal; part-ascospores monomorphic, conical to apiculate, hyaline, smooth; anamorph *Acremonium*-like **Pseudohypocrea**
7. Stromata pseudoparenchymatous, up to several centimeters diam, discrete, pulvinate to discoidal or erect and clavate; part-ascospores generally dimorphic, also monomorphic, globose, subglobose to wedge-shaped, hyaline or green, with broad tubercles or otherwise warted; anamorphs *Acremonium*-, *Gliocladium*-, *Stilbella*-, *Trichoderma*- or *Verticillium*-like 8
8. Stromata small, up to 1 mm diam, each with 3–20 ascomata, yellow-orange; ascospores one-septate, disarticulating, dimorphic, hyaline, spinulose; anamorph unknown **Dialhypocrea**
8. Stromata more than 1 mm diam, pulvinate to discoidal or erect and clavate; ascospores non-septate or one-septate, rarely three-septate, usually disarticulating, monomorphic or dimorphic, hyaline to green, smooth to spinulose or coarsely ornamented; anamorphs present (at least in culture) 9
9. Stroma erect and clavate **Podostroma**
9. Stroma pulvinate to discoidal 10
10. Ascospores one-septate, usually disarticulating, rarely three-septate, and not disarticulating **Hypocrea**
10. Ascospores non-septate **Sarawakus**

THE GENERA OF THE *HYPOCREACEAE*

APHYSIOSTROMA Barrasa, A.T. Martínez & G. Moreno, *Canad. J. Bot.* 63: 2439. 1985.

Type: *A. stercorarium* Barrasa, A.T. Martínez & G. Moreno.

Ascomata immersed in pulvinate, prosenchymatous stromata, yellow to orange or ochraceous, cleistothecial, subglobose to globose, concolorous with the stroma, KOH-, walls thin, smooth. Asci cylindrical, evanescent, 8-spored, ascospores uniseriate. Ascospores one-septate, separating into monomorphic, globose part-ascospores, coarsely ornamented at maturity. Anamorph *Verticillium*-like. On cow dung.

NOTES.— Barrasa *et al.* (1985) recognized the relationship of the cleistothecial *Aphysiostroma* to species of *Hypocrea* having *Verticillium*-like anamorphs. In their work on the relationships among pyrenomycetous fungi using 18S rDNA sequence data, Spatafora & Blackwell (1993) noted that *Aphysiostroma* grouped with *Hypocrea schweinitzii* in the *Hypocreaceae*.

Aphysiostroma stercorarium Barrasa, A.T. Martínez & G. Moreno, *Canad. J. Bot.* 63: 2439. 1985.

Anamorph: *Verticillium*-like.

Ascomata immersed in a pulvinate, prosenchymatous stroma, yellow to orange or ochraceous, reminiscent of some *Hypocrea* spp., cleistothecial, subglobose to globose, 140–250 μm diam, bright orange, KOH-; ascomatal wall of thin-walled cells, 9–20 μm diam. Asci cylindrical, 45–55 \times 3–4 μm , with obtuse apex, evanescent, 8-spored, ascospores uniseriate. Ascospores equally one-septate, disarticulating into monomorphic, globose part-ascospores, each 3–4 μm diam, hyaline, coarsely ornamented at maturity. Description modified from Barrasa *et al.* (1985).

TYPE.— SPAIN: Puerto de Somosierra, on cow dung, from pure culture JB-GM 3719 = IJFM A-121 (MA-Fungi 8059, holotype). The ex-type culture, ATCC 62321 = CBS 148.85, was used in molecular studies reported by Spatafora & Blackwell (1993).