



1, 2, Sections through pycnidia; 3, section of conidiogenous base or cushion; 4, runner hypha beside thinner aerial hyphae; 5, crystalline material often associated with runner hyphae; 6, germinating conidia; 7, conidiophores with attached conidia; 8, gelatinous matrix that surrounds conidiophores; 9-14, conidia; 10, 12, showing gelatinous 'appendages' in water. 9, 13, from type material in slide WINF(M) 2408; 14, DAOM 15013; remaining from DAOM 146648. 1, 2, $\times 100$; 3, $\times 400$; 4-14, $\times 1000$.

Coniella pulchella von Höhnelt, Ber. deutsch. bot. Ges. 36: 316. 1918.

PYCNIDIA depressed subspherical, mainly $100\text{--}350\mu$ wide, $65\text{--}250\mu$ high, smooth, appearing dark brown from contained conidia, with a circular ostiole $15\text{--}25\mu$ diam. surrounded by a yellowish brown

thicker wall area up to 100μ diam., without a beak. Wall a light brown textura epidermoidea in surface view of thin-walled cells $14-21\mu$ long and $7-10\mu$ wide fitted like pieces of a jig-saw puzzle; in section a textura angularis of 4-7 layers of polygonal cells $6-15\mu$ diam., thickest ($30-40\mu$) at base and lower sides, thinner above ($12-18\mu$) then thickened to $30-40\mu$ towards the pore. A conspicuous and characteristic central cushion $20-50\mu$ diam. is composed of cells like those of the wall, but these cells become collapsed and distorted as the conidiophores develop on the sides and top of the cushion. CONIDIOPHORES thickly crowded on the cushion, slender, rigid, simple, subulate, $10-16(-20)\mu$ long, $1.5-2.5\mu$ wide near base, $1.0-1.5\mu$ near apex, surrounded by a gelatinous coating. CONIDIA acrogenous, broadly oval or ellipsoidal, inequilateral, apex usually conical to rounded, base narrowed and truncated, medium to dark brown, moderately thick-walled, with several small guttulae when young and two large guttulae when mature, with one longitudinal germ slit, terminal gelatinous 'appendages' sometimes observed in water mounts of fresh conidia, $(8-9.5-11(-12.5) \times (5.5-6-7.5(-8)\mu$.

COLONIES on 1.25% malt agar have a thin aerial mycelium and profuse pycnidium production on characteristic coarse runner hyphae composed of barrel-shaped cells $10-20\mu$ long \times $10-14\mu$ wide that form a wiry mat that is difficult to cut. Colony diameter 2.6 cm after 3 days at 25°C in the dark. On PDA, pycnidium formation is less, white aerial mycelium more abundant, and the colony diameter reaches 2.8 cm in 3 days at 25°C . On autoclaved leaves of *Paeonia lactiflora* Pall., the fungus grows and fruits rapidly. With detached living leaves of peony, infection is very slow, often beginning at the leaf tip and progressing about 1 mm per day giving a series of V-shaped zones of pycnidia in a diurnal sequence. The pycnidia on the living or senescent leaves were smaller than on the sterilized media and substratum.

SUBSTRATE: seeds of *Pisum sativum* L., leaves and roots of *Vicia faba* L.

DISTRIBUTION: Ontario, Saskatchewan, and Alberta.

COLLECTIONS: On *Vicia faba*, Ont., C.E.F., Ottawa, 12.VII.1974, DAOM 146648 (V.R. Wallen). Sask., Laird, 13.VIII.1973, DAOM 145517 (R.A.A. Morrall), Outlook, 26.VII.1974, DAOM 145518 (R.A.A.M.), 29.VI.1973, DAOM 145450, 145516 (D.L. MacKenzie and R.A.A.M.). On *Pisum sativum*, Alta., Duchess, 20.II.1943, DAOM 15013 (J.W. Groves).

NOTES: The type specimen (on killed, blackened leaves of *Paeonia officinalis* L., Königstein, Sachsen, Sept. 1916 and 1917, W. Kreiger) was used for a redescription by Petrak and Sydow (Repertorium Specierum Novarum Regni Vegetabilis, Beihefte, 42(3): 459-460. 1927) that accords well with von Höhnel's original description and the amplified description by Weese (Mitteil. bot. Lab. techn. Hochsch. Wien, 2(1): 2. 1925). Both descriptions indicate that in nature the pycnidium wall is only one cell thick and the pycnidium sizes are smaller than we found in culture.

Sutton (Can. J. Bot. 47: 603-608. 1969) recognized five species of *Coniella* and included *C. pulchella* in subgenus *Coniella* (as *Euconiella* Petrak & Sydow) along with *C. diplodiella* (Speg.) Petrak & Sydow. Sutton's illustration of *C. pulchella* (Fig. 1A) agrees well with the conidial dimensions he gave. However, the drawing of *C. diplodiella* (Fig. 1B) is not in accord with the dimensions Sutton reported for this related species, and illustration 1B may prove confusing. A photomicrograph of WINF(M) 2408 (a slide made from the type of *C. pulchella* ex FH by Dr. Sutton, and now conserved at Northern Forest Research Centre, Canadian Forestry Service, Edmonton, Alberta) is included here, though from Kreiger's collection in Europe.

Sutton reduced *Anthasthoopa* Subramanian & Ramakrishnan and *Cyclodomella* Mathur, Bhatt & Thirumalachar apud Mathur & Thirumalachar to synonyms of *Coniella*. Our observation of gelatinous material on the ends of some fresh conidia of *C. pulchella* tends to support Sutton's inclusion of the species with 'appendages' on the conidia in *Coniella*. However, the gelatinous material was not consistently present and could not be demonstrated on old conidia of *C. pulchella* in culture. What we saw may not have originated from the conidium but rather from the slime-coated conidiophores.

Marasas and van der Westhuizen (Bothalia 10(3): 411-416. 1971. Figs. 7-9) gave a good account of *C. pulchella* in culture from an isolation from roots of *Ananas* sp. (pine-apple), East London, Cape Province, South Africa. They found the pycnidium wall in cultures to be more than one cell thick. Von Höhnel stressed the single layer wall character in the description of *Coniella pulchella* but apparently it is not applicable to the fungus in culture.

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