

## A NEW SCLEROTIGENIC SPECIES OF *PENICILLIUM*: *P. PULVILLORUM*

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(With Plate IV)

DURING an investigation of the soil flora responsible for the degradation of sterols, a species of *Penicillium* was encountered which was characterized by the production of a great abundance of sclerotium-like masses on all ordinary culture media. Although cultures have been maintained upon various media with frequent subcultures during eighteen months, these pseudoparenchymatous masses have, throughout this time, remained soft and quite unlike the hard typical structures of, for example, *P. Thomii* Maire, *P. Raistrickii* G. Smith (1933), or *P. pusillum* G. Smith (1939). They have, moreover, shown no evidence of becoming ascogenous, although their production has continued through successive subcultures apparently undiminished.

The soil sample from which the mould was isolated was taken from an area in Middlesex which had recently been converted for building purposes; it was quite unworked, and consisted of a very acid clay. After the lapse of a year, during which time the land had been treated with dressings of lime and various synthetic fertilizers, attempts to isolate the mould were, without exception, unsuccessful. The mould has not been encountered in any other soils examined, although these have included samples of widely varying types taken not only from the neighbouring district, but also from various other parts of the country.

The penicilli are of more or less divaricate type, and the mould is probably to be included among the other soil *Penicillia* of Thom's "Lanata-Divaricata" (1930). The "soft sclerotia" constitute such an outstanding feature of this mould, whilst the other morphological and cultural characters are together so divergent from those of the known sclerotigenic forms, that the proposal of a new species, *P. pulvillorum*, would seem to be justified.

### DIAGNOSIS

***Penicillium pulvillorum* sp. nov.**

Coloniis in agarō Czapekii late crescentibus, floccosis, compactis, saepe rugosis, primo virideolis, zonatis, dein brunneolis, marginibus albis deinde fulvis 3-5 mm. latis; reverso primo incolorato, subzonato et fulveolo in cultis senibus; conidiophoris ex hyphis repentibus,

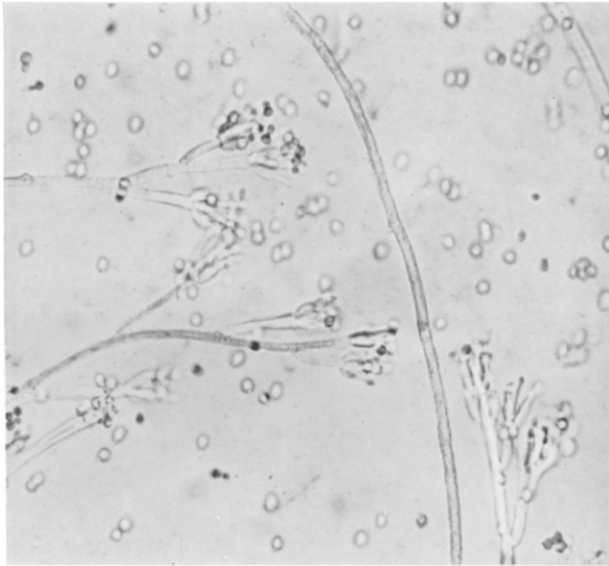


Fig. 1.

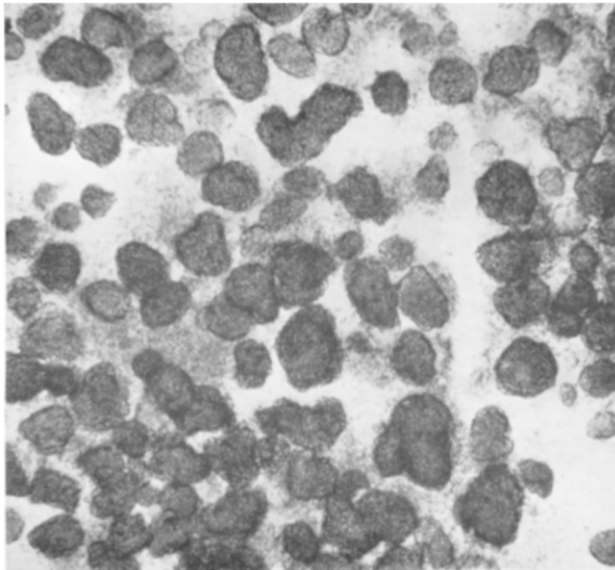


Fig. 2.

*Species of Penicillium: P. pulvillorum. G. E. Turfitt 187*

brevibus, asperulis,  $1.5-3\ \mu$  crassis; penicillis plerumque divaricatis raro non ramosis, saepe cum penicillis secundariis monoverticillatis; metulis  $3-3.5 \times 12-25\ \mu$ ; sterigmatibus acuminatis  $2.5-3 \times 8-10\ \mu$ ; conidiis globosis, glabris,  $2.5-3\ \mu$  diam.; sclerotiis abundantibus, fulveo-brunneis, mollibus, inequalibus, circiter  $700\ \mu$  diam.

Habitat in terra, Londonii.

The fungus grows almost equally well on wort and Czapek agar, and the appearance of the colonies on both media is closely similar.

Colonies on Czapek agar at  $24^\circ$ , matted floccose, often radiately wrinkled, spreading, becoming  $35-40$  mm. in diameter,  $0.5-1$  mm. deep in 8 days; marginal zone raised, white, passing later to brownish shades,  $3-5$  mm. wide; conidial areas at first pale green, becoming deeper green, clearly zonate towards growing edge with zones about 2 mm. apart, gradually turning brownish from centre outwards with development of sclerotia; reverse colourless at first, then somewhat zonate in pale yellow shades, becoming deeper yellow and brownish in age; odour none; conidiophores commonly arising as short branches from trailing hyphae,  $1.5-3\ \mu$  in diameter, with walls markedly roughened; penicilli occasionally as single verticils of sterigmata, usually divaricate with terminal groups of 2-3 metulae, and with secondary penicilli, mostly monoverticillate, arising from lower nodes of main axis; metulae mostly  $3-3.5\ \mu$  in diameter, varying greatly in length,  $12-25\ \mu$ ; sterigmata  $8-10 \times 2.5-3\ \mu$ , sharp-pointed, with conidial chains roughly parallel or more or less divergent, becoming tangled in age; conidia  $2.5-3\ \mu$  in diameter, smooth, globose; sclerotia very abundant, forming early amongst superficial growth of trailing and anastomosing hyphae, yellow-brown, irregular in shape, very variable in size, averaging  $700\ \mu$  in diameter, consisting of compact hyphal masses, remaining soft; development of asci not observed.

I am much indebted to Mr G. Smith for his opinions on the diagnosis, and for the photographs taken from my slides.

REFERENCES

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THOM, C. (1930). *The Penicillia*.

EXPLANATION OF PLATE IV

Both figures are from photographs of specimens mounted in lacto-phenol-picric acid.

Fig. 1. *P. pulvillorum*. Penicilli.  $\times 500$ .

Fig. 2. *P. pulvillorum*. Sclerotial masses.  $\times 100$ .

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