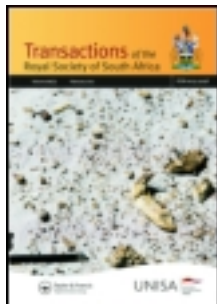


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SOUTH AFRICAN XYLARIAS OCCURRING AROUND  
DURBAN, NATAL.

BY PAUL A. VAN DER BIJL.

(With Plates VII and VIII.)

The genus *Xylaria* belongs to the *Pyrenomycetes* group of the *Ascomycetes* fungi and is included in the family *Xylariaceae*.

The members of this family are characterised by their superficial stromata, with the perithecia arranged along the periphery of the stromata and usually embedded in them, though at times more or less protruding. They have brown to dark-coloured usually 1-celled spores borne in cylindrical asci.

From other members of the family the genus *Xylaria* is distinguished by the following combined characters: (1) Stroma black, erect, branched or unbranched, globose, cylindrical or club-shaped, and with a shorter or longer sterile stalk which is rarely obsolete; (2) perithecia many, along the periphery of and embedded in the stroma or more or less protruding and rarely partly free; (3) asci cylindrical; spores brown or dark-coloured, ovoid, 1-celled, straight to slightly fusoid.

In the young stage the fertile portion or club of the stroma is covered with a whitish, felt-like conidial layer. Specimens in this stage are immature and cannot be specifically determined.

The genus *Xylaria* can for convenience be divided into two main divisions\*: (1) those with solid stromata, (2) those with the centre of the stromata pithy and becoming hollow. All the species herein dealt with belong to the first division.

*Xylaria* spp. are most frequently found growing saprophytically either in the ground or on decaying wood, fruit, etc. It is, however, interesting to note that Fomme and Thomas† and subsequently Wolf and Cromwell‡ have associated *Xylaria* spp. with a root-rot of apple trees. In 1912 the writer, on a visit to Mr. de Villiers, dist. Ermelo, Transvaal, observed invariably among the roots of dying carnation plants a rich growth of a

\* Lloyd, C. G., 'Xylaria Notes,' No. 1, 1918.

† Fomme, F. D., and Thomas, H. E., "The Root Disease of the Apple in Virginia," 'Science,' N.S., xlv, 1917.

‡ Wolf, F. A., and Cromwell, R. O., "Xylaria Root-rots of Apple," 'Journ. Agric. Res.,' ix, p. 269, 1917.

*Xylaria* sp.\*. The fungus could not actually be traced in contact with the roots, and at the time it was thought that the fungus grew primarily in the rich kraal manure with which the plants had been treated and caused the death of the plants by smothering the root system.

Though the *Xylarias* are quite conspicuous objects on the substrata on which they grow, but little is known of the South African species. Four species have thus far been collected by the writer around Durban, and of these three have not been previously recorded from South Africa. We give the undermentioned key of the species occurring around Durban and follow it with brief descriptions of each species.

*Key to Xylaria spp. occurring around Durban.*

- |  |                           |
|--|---------------------------|
| 1. Plants growing only on fallen and decaying fruits . . . . .   | 1. <i>X. multiplex.</i>   |
| 1. Plants not of above habitat.  |                           |
| 2. Surface of clubs with fine raised lines and apex usually prolonged into a distinct apiculum . . . . . | 2. <i>X. apiculata.</i>   |
| 2. Surface of clubs not as above and apex not prolonged into an apiculum.                                |                           |
| 3. Surface of clubs moriform through protruding perithecia.  | 3. <i>X. anisopleura.</i> |
| 3. Surface rugulose.   |                           |
| 4. Spores 20-30 × 7-11. . . . .  | 4. <i>X. polymorpha.</i>  |

DESCRIPTIONS OF THE SPECIES.

1. *XYLARIA MULTIPLEX* (Kze.) Fries. (Figs. 1 and 2.)

*Plants growing on various fruits, solid, black without, white within; clubs slender, cylindrical to compressed, subdivided; surface strongly moriform with the protruding perithecia and especially so the slender branches; stalk densely villous with dark hairs; perithecia globose; asci cylindrical, 8-spored; spores brown to dark, ovoid, straight to slightly fusoid, older uniguttulate, 7-11 × 4 μ.*

Common on fallen fruits of *Strychnos Gerrardi*. This fungus appears to always grow on fruits, and Lloyd records it from tropical America as particularly growing on large pods of Leguminosae. *Its habitat should aid in recognition.* My collection is the first record of the plant from South Africa.

2. *XYLARIA APICULATA*, Cke. (Fig. 3.)

Plants epixyloous, solid, black without, white within; clubs cylindrical, 5-1.5 cm. long × 2 mm. across, single or 2-4 on the same stalk, *usually with a prominent apical apiculum; surface striate with fine raised lines; stalks*

\* van der Bijl, P. A., "The Nature of Fungi, with Reference to the Life-histories of some Important Parasites," 'Agric. Journ. Union S. Africa,' vi, p. 904, 1913.

·1-1·5 cm. long  $\times$  1 mm. diam., villous with dark hairs; perithecia globose, not protruding, 130-200  $\mu$  diam.; asci cylindrical; spores brown to dark, straight to slightly fusoid, 11-15  $\times$  4-6  $\mu$ ; when young with a large gutta, when old often with an indistinct septum.

On dead and decaying logs. This plant was described by Cooke from New Zealand. It also occurs in Madagascar and the American tropics and my collection is the first record from South Africa. *The raised lines on the clubs are peculiar and should aid in recognition.*

3. XYLARIA ANISOPLEURA, Mont. (Fig. 4.)

Plants epixylous, solid, black without, white within; clubs solitary or fasciculate, 1-2·5 cm., globular to oval, at times compressed, branched, and more or less lobed; *surface moriform with protruding perithecia*; stalks ·5-1 mm. long, often rudimentary, villous at base; perithecia globose, up to 780  $\mu$  diam.; spores brown to dark, ovoid, straight to slightly fusoid, uniguttulate, 22-30  $\times$  7-9  $\mu$ .

On dead and decaying wood. Distinguished from *X. polymorpha* by moriform surface.

4. XYLARIA POLYMORPHA (Pers.), Grev. (Fig. 5.)

Plants epixylous; clubs various, rarely solitary, more often fasciculate or tufted, 2-7-connate at base, simple or palmately branched, sometimes terete or globose, more often compressed, solid, black without, white within; *surface rugulose*; stipe ·7-2 cm. long  $\times$  2-5 mm. diam., at times obsolete; perithecia ovate, slightly protruding; spores brown to dark, ovoid, straight to fusoid, 20-30  $\times$  7-11  $\mu$ .

On rotting wood. Distinguished from *X. anisopleura* by rugulose surface and usually broader spores. The name "polymorpha" refers to the many and varied forms this fungus takes.

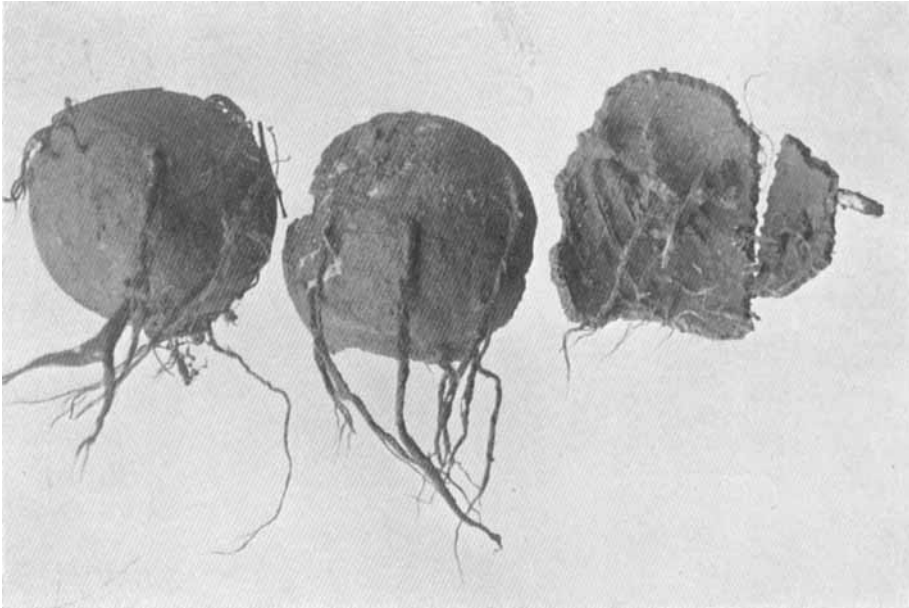


FIG. 1.



FIG. 2.



FIG. 3.

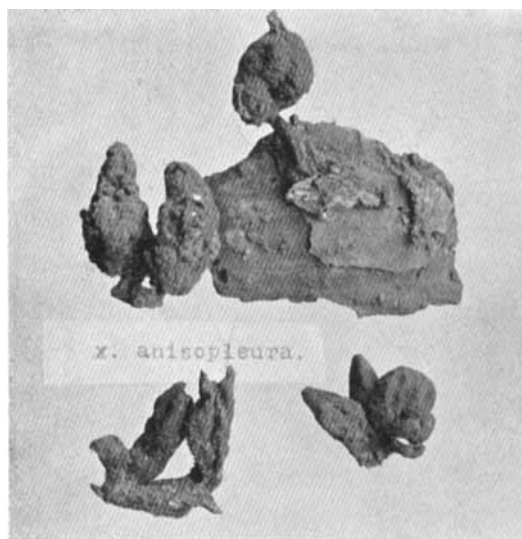


FIG. 4.



FIG. 5.