

AN UNDESCRIBED SPECIES OF *PHOMOPSIS* AND ITS ASSOCIATED ASCIGEROUS STATE

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DURING the course of investigation into the fungal diseases of ornamental plants, an interesting leaf-spot disease was encountered by the authors on *Aregelia spectabilis* Mez. incited by a species of the form-genus *Phomopsis* (Sacc.) Sacc. The same spots later showed the development of a perithecial state which was identified as a species of *Diaporthe nitschke*¹. Since these two fungi were noted for the first time on one and the same host, a detailed study was undertaken in respect of their morphology, taxonomy and identification. A review of literature^{1,2} also showed no report of these two fungi on *Aregelia spectabilis* Mez. or its related hosts of the family Bromeliaceae so far. Hence, these two fungi have been described here as new taxa based on comparative morphology and host-relationship² as under.

Phomopsis spectabilae sp. nov. (figure 1)

Pycnidia on leaves chiefly solitary, immersed, dark brown, sub-spherical to irregular, upto 151 μm in diam; opening by an apical ostiole; pycnidial cavity being unilocular; conidiophores small, hyaline, simple, lining inside wall of the cavity; conidia of two types; alpha conidia (phialospores) hyaline, uni-celled, fusiform to elliptical, guttulate, 5.5–6 \times 2–2.7 μm , beta conidia (phialospores) hyaline, elongated, filiform, curved, measure 13.5–19.6 \times 2 μm .

Maculae saepe irregulares et oblonga, ad terminibus, coalitus, melleus ad medio, et avellaneus marginum; pycnidia punctiformae, hypophyblae, solitariae, immersa, fuscaburnneae, sub-sphaerica vel irregulares, usque 151 μm diam., ostiolata, unilocularia; pycnidiosporae alphae et betae; alpha (A) sporae hyalina, unicellularia, fusiformia vel elliptica, guttulata, magnit 5.5–6 \times 2–2.7 μm ; beta (B) conidia hyalina, elongata, filiformia, curvata, magnit; 13.5–19.6 \times 2 μm .

Diaporthe spectabilae sp. nov. (figure 2)

Ascstromata (ascmata) scattered, botryose, black with long neck, upto 300 μm diam., narrowly elongated neck and opening by a narrow ostiole; asci 8-spored, fusiform, sessile, bitunicate, evanescent, measure 41.6–45 \times 8 μm ; ascospores 1-septate, guttulate, acute at ends, measure 9.9–11.6 \times 3.3 μm .

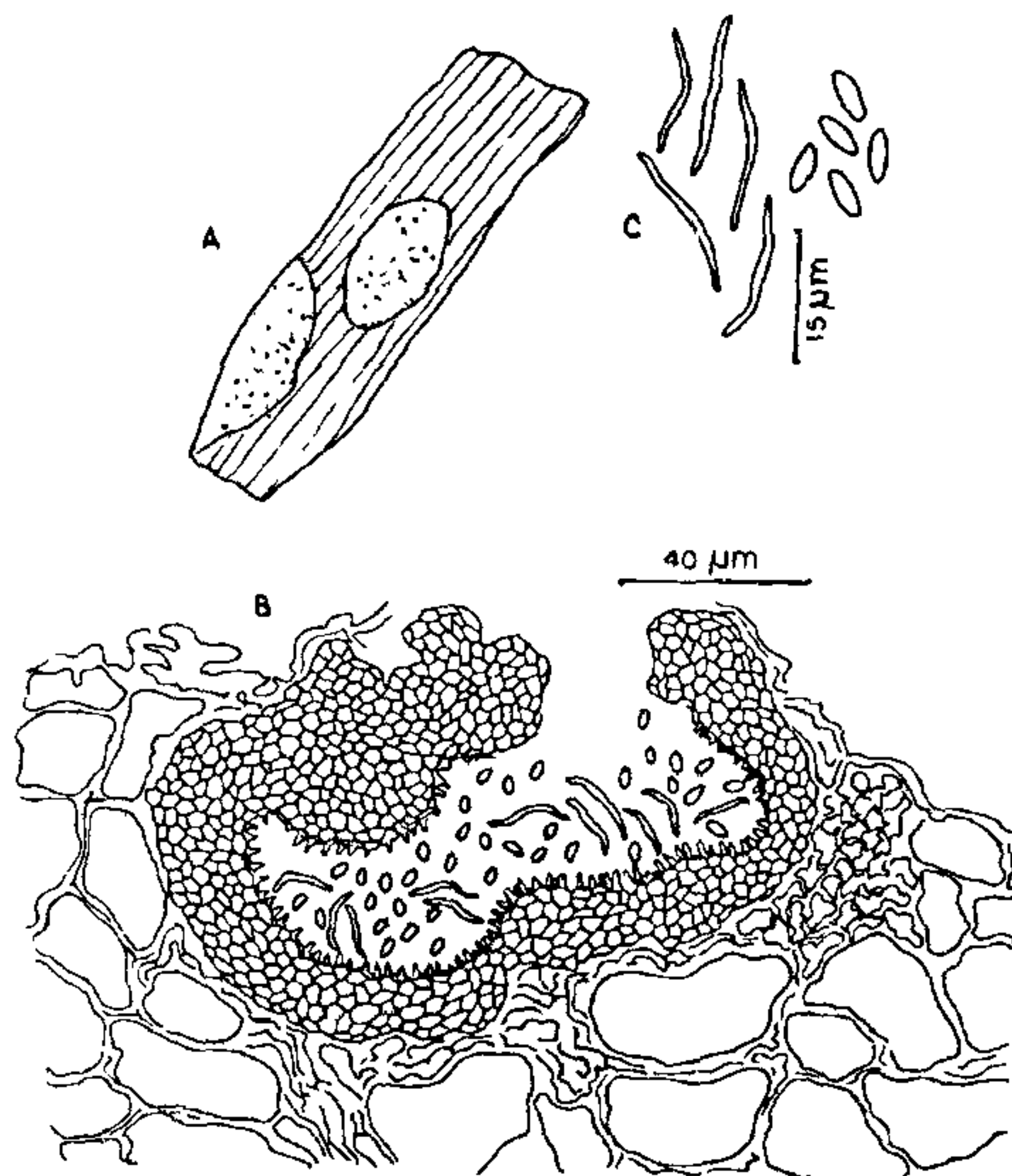


Figure 1. *Phomopsis spectabilae* sp. nov. A. Leaf spots (habit). B. V. S. of a pycnidium. C. Pycnidiospores (Conidia).

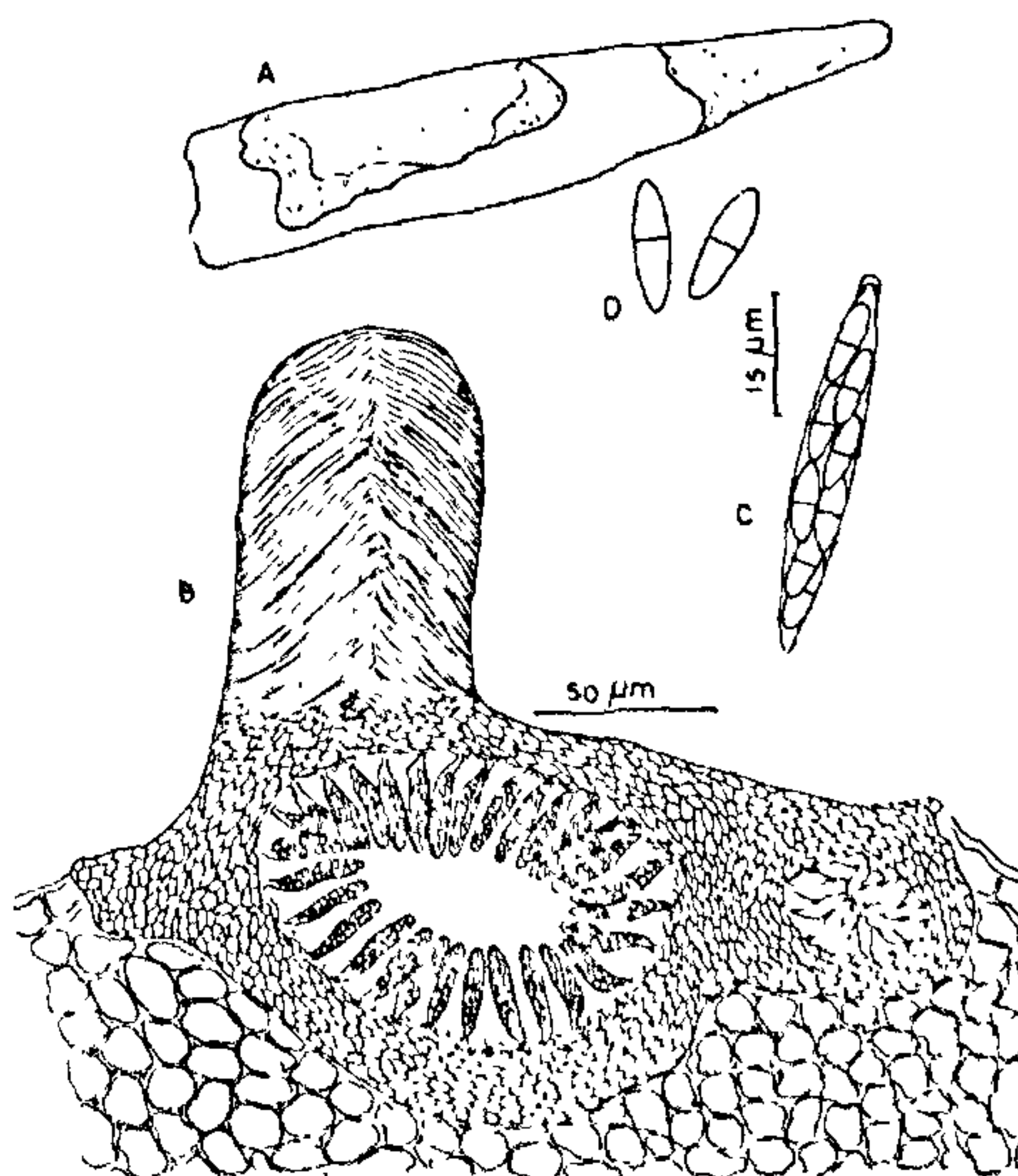


Figure 2. *Diaporthe spectabilae* sp. nov. A. Leaf spots (habit). B. V. S. of an ascocarp showing asci. C. Ascus. D. Ascospores.

Ascostramatae dispersae, botryosae, nigri, usque 300 μm diam., neck elongata, leniter ostiolata; asci octo-sporae, fusiformia, sessilis, magnit. 41.6–45 \times 8 μm . bitunicatae, evanescentate; ascosporae uniseptata, guttulata, acutae ad apices, 9.9–11.6 \times 3.3 μm .

Matrix: In foliis vivis *Aregelia spectabilis* Mez., (F. Bromeliaceae), leg. B. R. D. Yadav, in Oct. 1977, ad Pune, AMH 4082 (Holotypus).

Remarks: Both the perfect and imperfect stages were encountered in one and the same infection spot. This forms a new host record since both the fungi are reported herein for the first time on the said ornamental plant.

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2. Sutton, B. C., *The Coelomycetes*, C.M.I. Publ., Kew, England, 1980, p. 696.

ULTRASTRUCTURE OF SPERMS OF HEAT STERILIZED *DYSDERCUS KOENIGII* F

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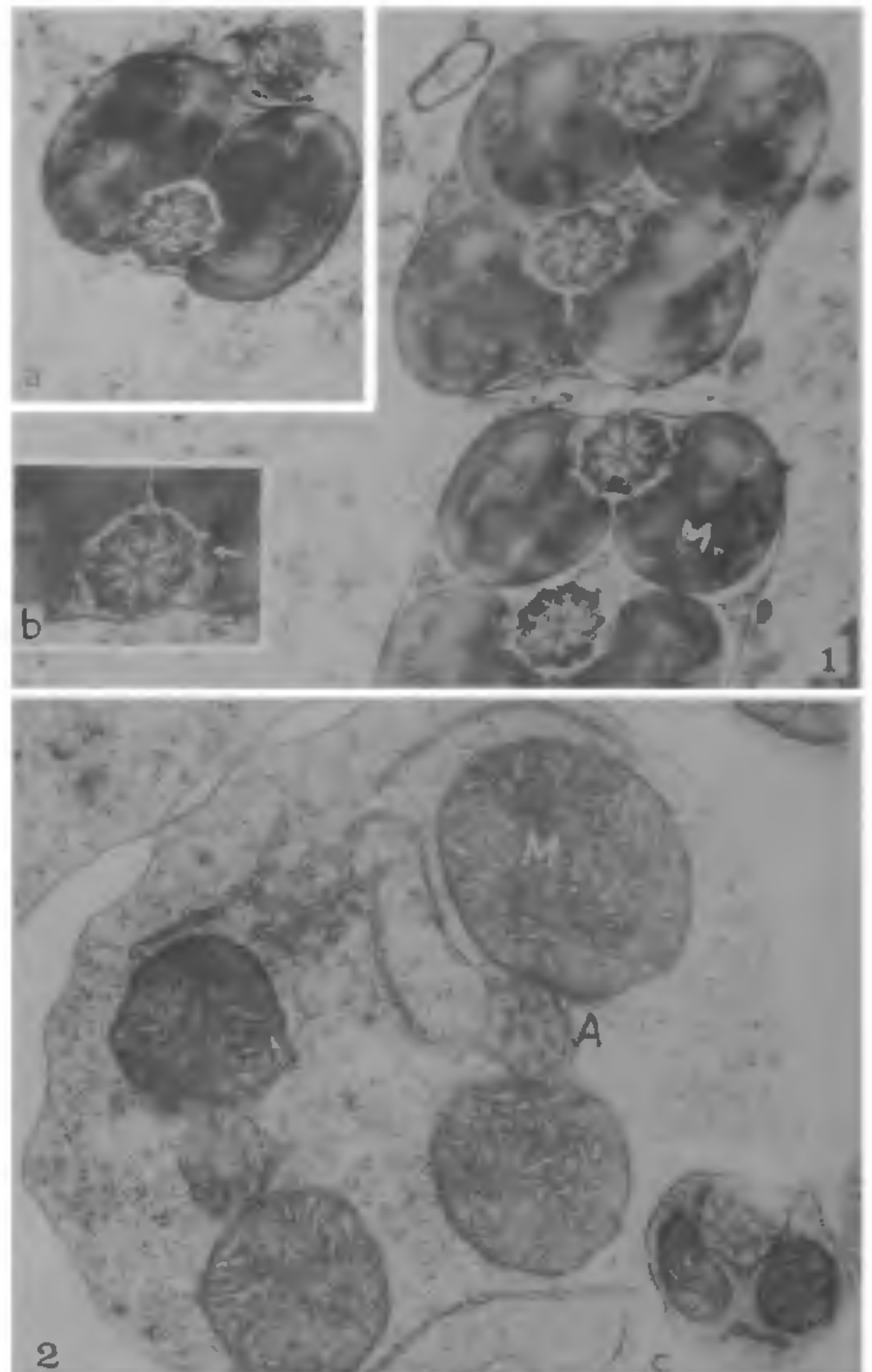
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IN laboratory cultures of the Red Cotton Bug (*Dysdercus koenigii* F) almost 100% sterility was noticed when temperature of the culture room was increased to between 35° and 40°C. Females laid what looked like normal eggs after normal copulation, but the eggs failed to hatch. Their colour also did not change from pale yellow to orange which normally indicates the developmental process of normal eggs. To determine the cause of sterility, the sperms produced by these sterile males were examined using electron microscope.

Testes were dissected out and fixed in 2.5% glutaraldehyde in phosphate buffer (pH 7.2) along with the vas deferens (testis cut into 3 portions: upper, middle & lower; vas deferens kept as whole), post-fixed in 1%

osmium tetroxide in the same buffer, dehydrated in acetone grades and embedded in Epon 812. Ultrathin sections were stained with uranyl acetate and lead citrate and examined in electron microscope (JEOL 100 CX-II).

Figure 1 shows a T.S. of mature sperms in the vas deferens of sterile adult male. Figure 2 shows the T.S.



Figures 1–2. 1. Two mature sperms (in vas deferens) having common plasma membrane ensheathment. Mitochondrial derivatives (M), each with 3 crystalline bodies, are seen surrounding the axoneme; the background has precipitated semen, $\times 29000$. 2. Two spermatids developing in the cytoplasmic matrix. Mitochondrial derivatives (M) with prominent cristae and axoneme (A) getting formed. Initial formation of plasma membrane and the free ribosomes (dark granules) can also be seen, $\times 19000$. [Insets: (a) Normal mature sperm, $\times 29000$ (b) Curved end feet (arrow) of mitochondrial bridges, $\times 36000$ (c) Tail end of a normal spermatid, $\times 19000$]