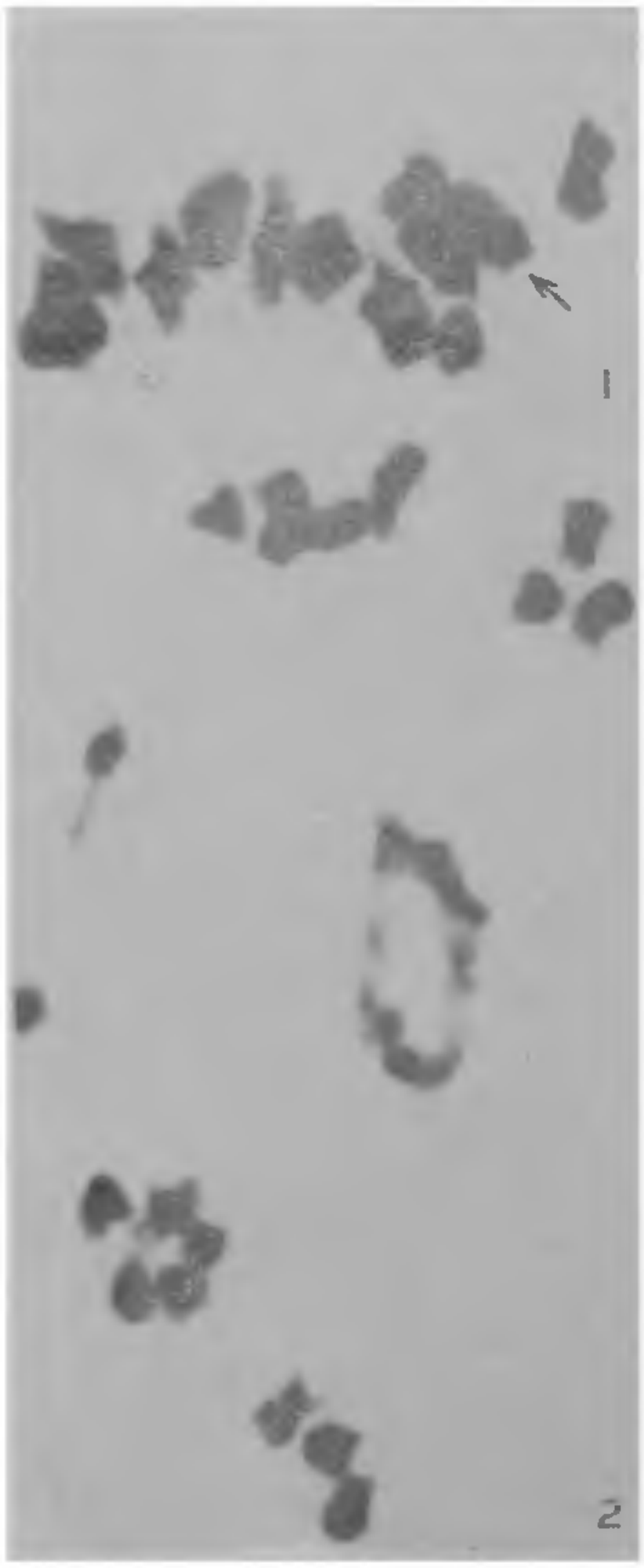
TABLE I

Chromosome associations and Chiasmata frequency in the interchange heterozygote

Associations	No. of cells	Percentage	Disjunction	Average × ta/cell
$R_4 + 9$ II	32	64·0 ± 0·3	Adjacent	18·3 ± 0·35
$R_4 + 9$ II	12	24·0 ± 0·71	Alternate	17·8 ± 0·17
$C_4 + 9$ II	6	12·0 ± 0·31	Adjacent	14·8 ± 0·9



FIGS. 1–2. Fig. 1. Metaphase I, Showing $R_4 + 9$II. The interchange multiple is marked, ×. Fig. 2. Anaphase I, 10 : 10 chromosomes and late disjunction in the interchange multiples. Note all the chiasmata in the interchange multiples are interstitial, × 1500.

The vegetative reproduction has not only conserved interchange heterozygosity in this taxon but also circumvents high level sterility.

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1. Burnham, C. R., "Chromosomal interchanges in plants," *Bot. Rev.*, 1956, **22**, 419.

THE GENUS *STILBELLULA* FROM INDIA

DURING the survey of Hyphomycetous flora of Mount Abu, Rajasthan, authors came across a synnematous fungus growing on dead twigs. The fungus has been identified as a new species of *Stilbellula*. The genus *Stilbellula* was erected by Boedijn[1] with the type species *S. pallida* and since then no other species has been added to this genus. The genus is being reported for the first time from India. The present fungus differs from *S. pallida* in having smaller and smooth walled conidia.

Stilbellula indica sp. nov. Chouhan and Panwar

Synnemata 1–2 mm longa, pale ochraccea, cum capitata, quod est globosum ad subglobosum, colore roseolum. Caulis valde compactus, 100–355 μm ad basim, 78–130 μm in medio, 55–100 μm latitudiue ad verticem, cum 1–2 μm crasis hyphis, quae sunt stricte parallelae inter se. Ad verticem hyphae conidiophora formantes quae sunt 2·5–5·5 μm latae. Conidiophora ad capitulum formantia convergentia qui capitulum est 190–330 × 90–165 μm sine conidiis. Conidia globosa ad subglobosa, hyalina, laevia, parieta 2·7–5·0 × 2·7–4 μm (Fig. 1).

Typus lectus in ligno emortuo in loco Mount Abu die August 1973 a, J. S. Chouhan et K. S. Panwar et positus, C.M.I., Kew Herb, I.M.I. 187996 typus et Botany Department, University of Jodhpur, Coll. No. 329.

Synnemata 1–2 mm long, pale-ochraceous, with a globose to subglobose, pale-rose coloured heads.

Stem very compact, 100–355 μm at the top, consisting of 1–2 μm thick hyphae, running strictly parallel to each other. At the top the hyphae forming conidiophores, converging to form the capitulum which without conidia measures 190–330 × 90–165 μm. Conidia globose to subglobose, hyaline, smooth-walled, 2·7–5 × 2·7–4 μm.

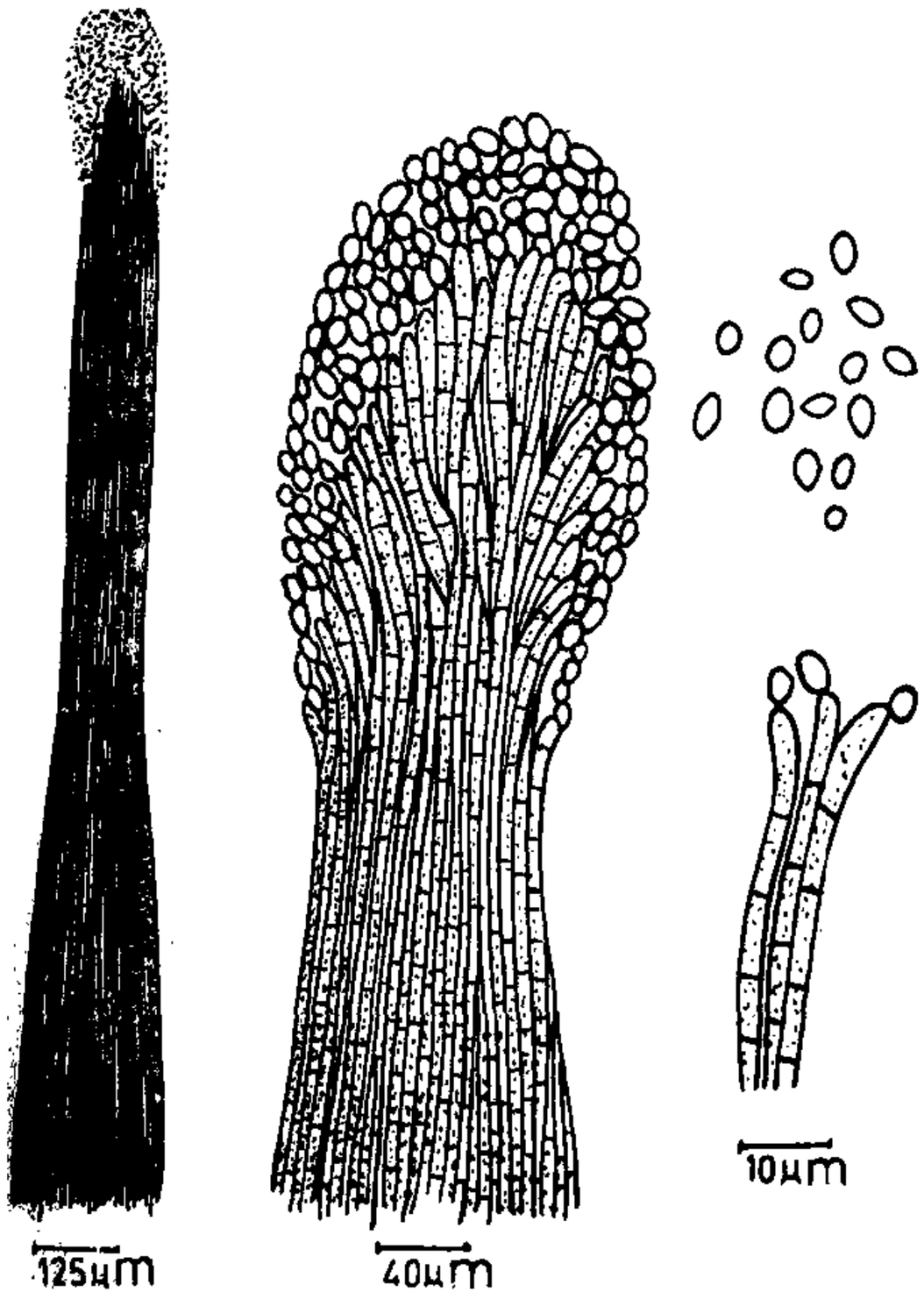

FIG. 1

Collected on dead twig from Mount Abu by J. S. Chouhan and K. S. Panwar in August 1973 and deposited in C.M.I., Kew, Herb., I.M.I. 187996 and Botany Department, University of Jodhpur, Coll. JU. M. L. 329.

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1. Boedijn, K. B., *Sydowia*, 1951, **5**, 227.

INCREASED LYSOSOMAL MEDIATED PROTEIN DEGRADATION IN THE LIVER OF 'VACOR' FED *BANDICOTA BENGALENSIS*

LIVER by virtue of its position and metabolic role plays an important role in the detoxification and elimination of several toxic substances. Enhanced lysosomal activity has been observed in liver cells exposed to noxius environments such as administration of hepatotoxins, burning and freezing of liver parenchyma and partial hepatectomy in protein depleted rats[1]. Lysosomal changes have been demonstrated in several cases of drug induced cholestesis[2]. Although hepatopathological changes are documented for norbormide treated fish[3], crimidine[4], zinc phosphide[5] and vacor[6] treated rats, there does not seem to be any histological or biochemical evidence for altered lysosomal activity of rodenticide treated animals. This note records lysosomal and extra lysosomal mediated protein degradation in the liver of lesser bandicoot rat, *Bandicota bengalensis* treated sublethally with vacor (N-3-pyridylmethyl-N[1]-*p*-nitrophenylurea). The rat is a notorious pest on food grains both during their production and storage while the chemical employed is a new rodenticide, being evaluated throughout the world against a wide variety of species.

Laboratory acclimated, *Bandicota bengalensis*, after being starved for 24 hr, were fed on 10 g rice bait (rice flour with 10% groundnut oil) containing vacor at a concentration of 1·5 mg/100 g body weight. The dosage was considered sublethal based on our earlier study[7]. Animals fed on non-poisonous rice bait constituted controls. Next day both the categories of subjects were sacrificed and their liver was excised, weighed and utilised for the study.

The total proteins of aqueous tissue homogenates were precipitated by adding equal amounts of 10% TCA and centrifuged. The protein content was estimated by Biuret method[8]. The total amino acid of the supernatant were determined according to Moore and Stein[9]. The rate of autolytic, proteolytic and cathepsin mediated degradation of liver proteins were measured as described by Krishnamoorthy *et al.*[10] and Krishnamoorthy[11]. The rate of protein breakdown was expressed as μ moles of amino acids liberated/mg protein/h. Cathepsins are the main agents in the disintegration of protein into amino acids, a process considered as the most important one occuring inside the lysosomes[12]. Autolytic changes in cell constituents are also attributed to lysosomal enzymes while proteolysis as studied in the present experiments may represent extra-lysosomal proteinase since such an enzyme activated by cat has been reported earlier[13].

The total protein levels decreased with a consequent increase in the free amino acid pool in the liver of