deep; peridial cells pale yellow, ellipsoid, 26–31·5 (–35) × 10–15 (–16·5 μm); wall exterior up to 3·5 μm thick, strongly sculptured; aeciospores globoid or polygonal (13–) 15–18·5 (–20·5) × 14–15 (– 17 μm); wall 1–2·5 μm thick, sulphur yellow to pale yellow-orange, verruculose.

Dept. of Plant Pathology, Institute of Agriculture, Yezin, Pyinmana, Burma, *August* 3, 1977.

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A NEW *TRIMMATOSTROMA* FROM SOIL

DURING the study of ecological distribution of soil fungi, a species of *Trimmatostroma* was isolated from soil samples collected from coffee plantations at Anantagiri (A.P.). On comparison (Ellis.[2,3]) it was found to be a new taxon which is described below. Earlier *T. betulinum* (Corda) Hughes (=*Coniothecium betulinum*) was reported to have been isolated from soils of Ireland (Barron)[1]. The present fungus was also found to differ from *T. cordaicis* (Sharma and Singh[5]) and *T. Hughesii* (Rao and Subedar[4]) described recently from India.

Trimmatostroma indica sp. nov. Manoharachary, Raghuveer Rao and Ramarao.

Coloniae irregulares, gregaria, erumpentia, nigra in medio solanaceo agaro sucroso, stromata erumpentia ad cellulli hyalina vel subhyalina, producenti conidiophora; conidiophora simplicia vel ramosa rarius, septata, subhyalina, brunnea vel pallide brunnea, usque 150 μm longa, 5 μm lata, usque 5-septata; conidia variabilia, 0–4 septata (7-septata rarius), septa transversalibus vel oblique-longitudinalibus, oriunda, pallide vel fusce brunnea, cylindrica vel ovalia vel triangularis vel quadrangulares, attenuata ad septa, 4·5–15·0 μm longa, 4·5–9·0 μm lata, obtusa vel truncata ad apicem, catenata, formantia catenas, irregulares, ramosa (Fig. 1).

In solo coffee (*Coffea arabica* L.), Anantagiri, Visakhapatnam District, A.P., India, 17 November 1970; pH 8·0; cultura typa posita in C.M.I., Kew, England, IMI 156719, atfue isotypa posita in Mycologia laboratoria, Osmania Universita, Hyderabad, OUF–84.

The authors are greatly indebted to Dr. M. B. Ellis, C.M.I., Kew, England, for help in the identification of the fungus and to Prof. Jafar Nizam, Head of the Botany Department, for encouragement.

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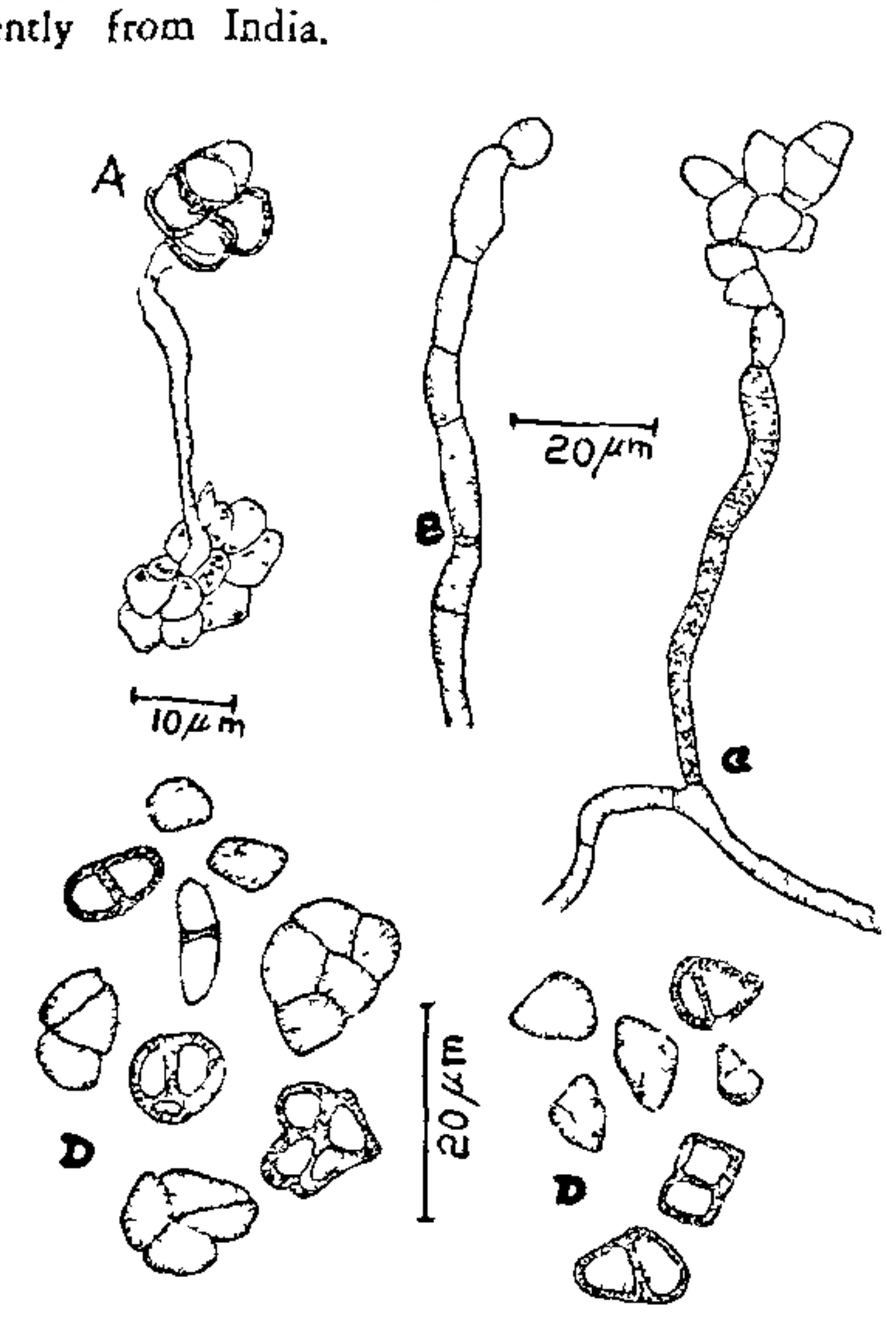

FIG. 1. *Trimmatostroma indica* sp. nov. A. Part of stroma with conidiophore and conidia; B and C. Conidiophore, mycelium with conidiophore and conidia; D. Conidia.

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DETERMINATION OF CAPTAFOL IN ITS FORMULATIONS AND RESIDUES ON CROP PLANTS

CAPTAFOL * (Cis-N-(1, 1, 2. 2-Tetrachloroethylthio), 4-cyclohexene-1, 2-dicarboximide) a broad spectrum fungicide, is generally estimated gas chromatographically or by using a T.L.C. procedure[1]. For routine laboratory analysis of the fungicide and its residues on crops we have attempted to evolve a simple, but sensitive colorimetric method. The method is based on the

* Difolatan is the registered trade name of M/s. Chevron Chemical Company for Captafol.

principle that captafol reacts under alkaline conditions with N, N-dimethyl-*p*-phenylene diamine (DPD), yielding a brownish orange coloured compound that has an absorption maximum at 440 nm. Baumler and Rippstein[2] used this as a spray reagent for identification and estimation of sulphur and chlorine containing organic compounds on T.L.C. plates. It has been possible to use this reagent for quantitative estimation of captafol colorimetrically, as given in this article.

Reagents:

(*i*) DPD reagent—Freshly prepared solution of N, N-dimethyl-*p*-phenylene diammonium dichloride—5 mg/ml of 0·5 N methanolic NaOH.

(*ii*) Standard captafol solution—one μg/ml in benzene.

Procedure:

(*a*) *For formulations*: A weighed quantity (100 mg) of the active ingredient is diluted to one litre with benzene and 5 ml of this solution is pipetted out into a 50 ml test tube, evaporated slowly to dryness on a water bath and the content of captafol is determined by the same procedure as for the preparation of standard curve.

(*b*) *For residues*: The procedures for extraction of captafol residues from crops and subsequent clean up given by Pack[1] is used, keeping in mind that certain crops like apples, celery, peaches, spinach and tomatoes need no clean up. The finely chopped plant parts (100 g) are extracted twice with 400 ml of benzene in a waring blendor, filtering each time under suction. The extracts are evaporated to dryness, dissolved in acetonitrile and transferred to a 125 ml separatory funnel. The acetonitrile extract is washed thrice with 10 ml portions of *n*-hexane and the hexane washings are discarded. The acetonitrile solution is made upto 100 ml. An aliquot of this solution is evaporated to dryness in a vacuum evaporator, the residue dissolved in a small volume of pentane and passed through a 10 cm column of silicic acid. The column is washed 5 times with 5 ml portions of pentane and the fungicide is eluted with six 5 ml portions of ether-pentane (1:1) mixture. The eluate is evaporated in a vacuum evaporator. The residue is dissolved in 10 ml benzene, transferred to a 50 ml test tube and captafol is estimated as under preparation of standard curve.

Preparation of Standard Curve:

To a series of 50 ml test tubes, 0 to 10 ml of standard (1 μg/ml) captafol solution is transferred, the solvent is evaporated slowly to dryness on a water bath. After cooling, one ml of the DPD reagent is added and the test tubes are rotated to bring the residue in contact with the reagent. The mixture is allowed to stand for three minutes and 10 ml of methanol is added. After mixing the absorbance of the solution is measured at 440 nm after 10 minutes.

The method is quite sensitive and the limit of detectability is one μg. By suitably increasing the sample size, for residue analysis the sensitivity can be increased upto 0·02 ppm. The recovery of captafol from this method varied from 85 to 110% which is well within the generally accepted limits.

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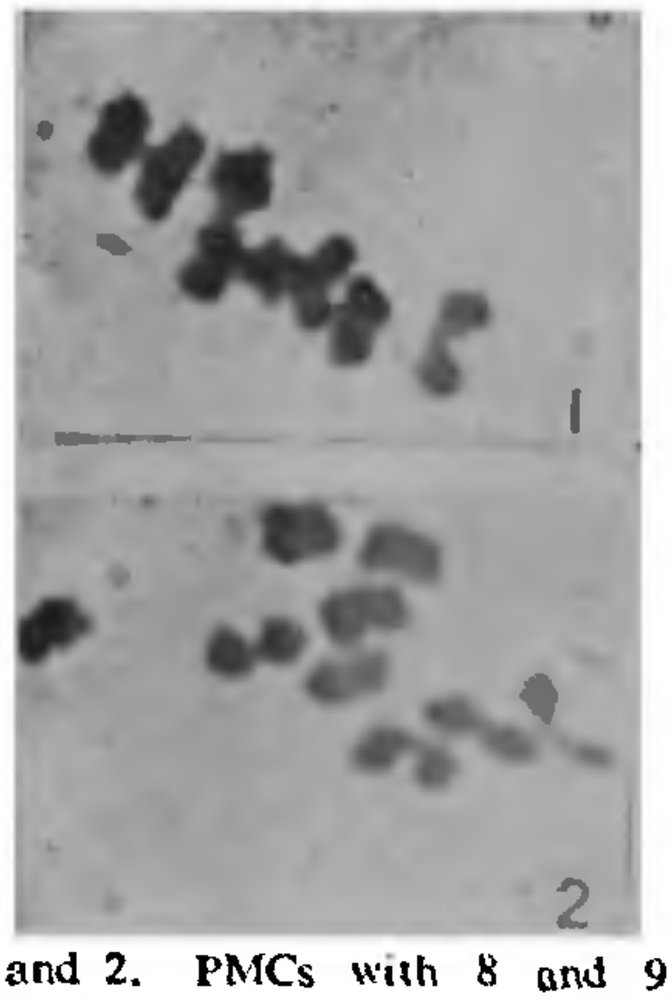
A NEW CATEGORY OF B-CHROMOSOMES IN *TRIGONELLA FOENUM-GRAECUM* L.

B-CHROMOSOMES smaller than the normal complement have already been reported in *Trigonella foenum-graecum* from this laboratory (Raghuvanshi and Joshi[1]). A new category of B-chromosomes indistinguishable from normal complement is being reported for the first time in this species. The chromosome number of this species is $2n = 16$. In one of the strains carrier plants have two types of PMCs, one having 16 chromosomes (Fig. 1) and other with 18 chromosomes (Fig. 2). These 2 B-chromosomes are



FIGS. 1 and 2. PMCs with 8 and 9 bivalents respectively.