

Rajasthan (Jodhpur—Collector?; Marwar—King), Gujarat (Rajkot—Santapau; Dwarka, Okha, Chotila, Jamnagar—Santapau) and Kutch (Stoliczka) in India. The plant has recently been collected during a botanical exploration of the Nagarjunakonda valley in Andhra Pradesh. Since the Nagarjunakonda valley and its surroundings will be submerged under water as soon

and Rich, *Fl. Senegamb. Tent.*, 1831, 1, 71; Masters in *Fl. Brit. Ind.*, 1872, 1, 323; Cook, *Fl. Pres. Bomb.*, 1901, 1, 98.

The plant is an undershrub, with a thick root-stock and is one of the rare plants collected from the valley.

Fruit.—July.

Andhra Pradesh.—Nagarjunakonda valley, Nalconda District, 16-7-1961—*Thothathri* 9724 (Herb. CAL).

Distribution.—Punjab, Rajasthan, Gujarat, and Kutch. The plant grows profusely in Sind, Karachi and West Punjab in Pakistan.

My sincere thanks are due to Dr. H. Santapau, Director, Botanical Survey of India and Dr. S. K. Mukerjee, Keeper, Central National Herbarium, for encouragement.

Central National Herbarium, K. THOTHATHRI,
P. O. Botanic Garden, Howrah,
March 10, 1964.

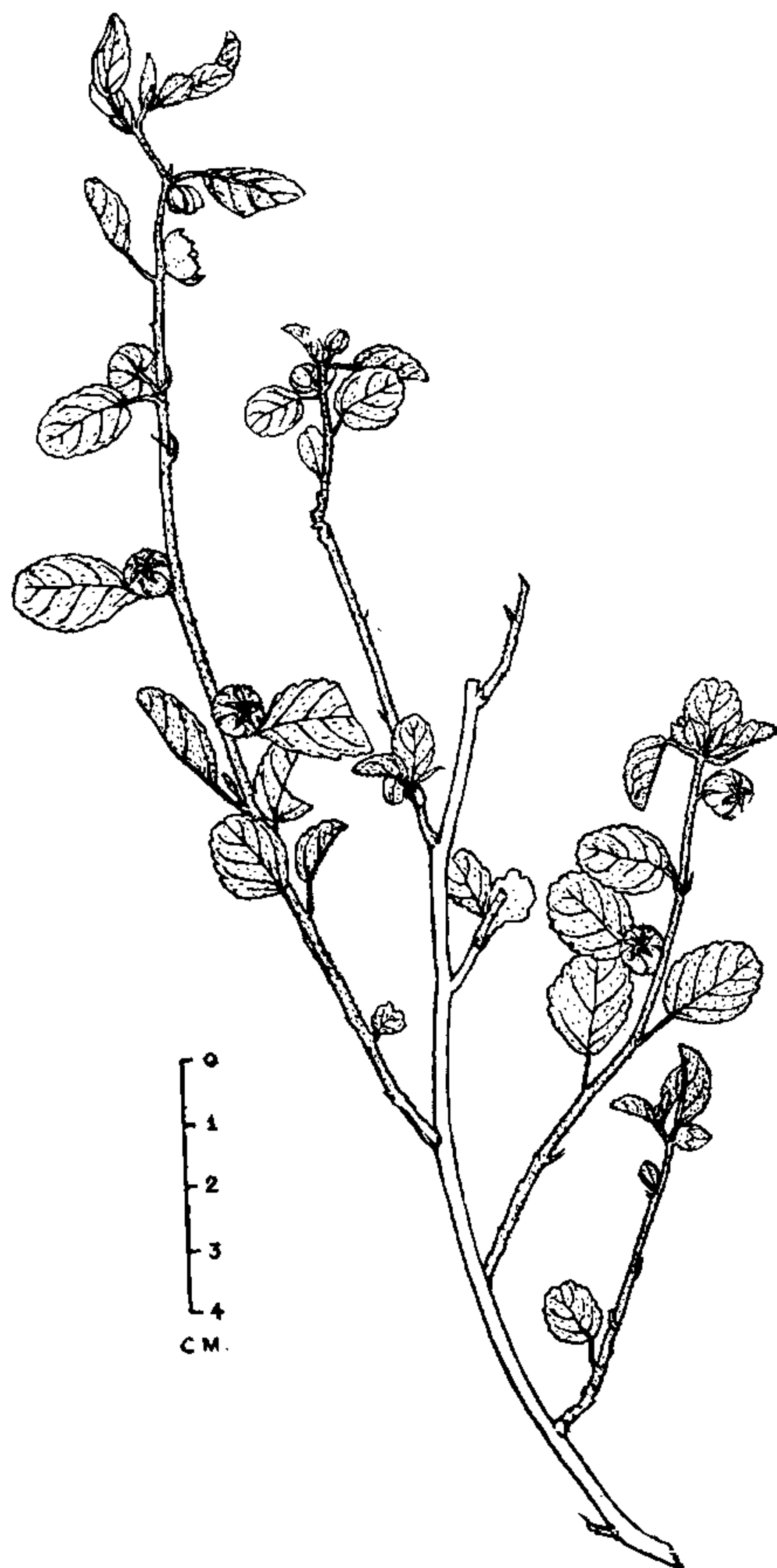


FIG. 1. *Sida ovata* Forsk.

as the Nagarjunakonda dam is completed, it is worthwhile to record here the occurrence of this interesting plant with an illustration.

The plant is usually known in our Indian Floras as *Sida grewioides* and its correct nomenclature is as follows: *Sida ovata* Forsk. *Fl. Aeg. Ar.*, 1775, 124; Santapau in *Fl. Saur.*, 1962, 1, 36. *Sida arewioides* Guill. & Perr. in Guill, Perr,

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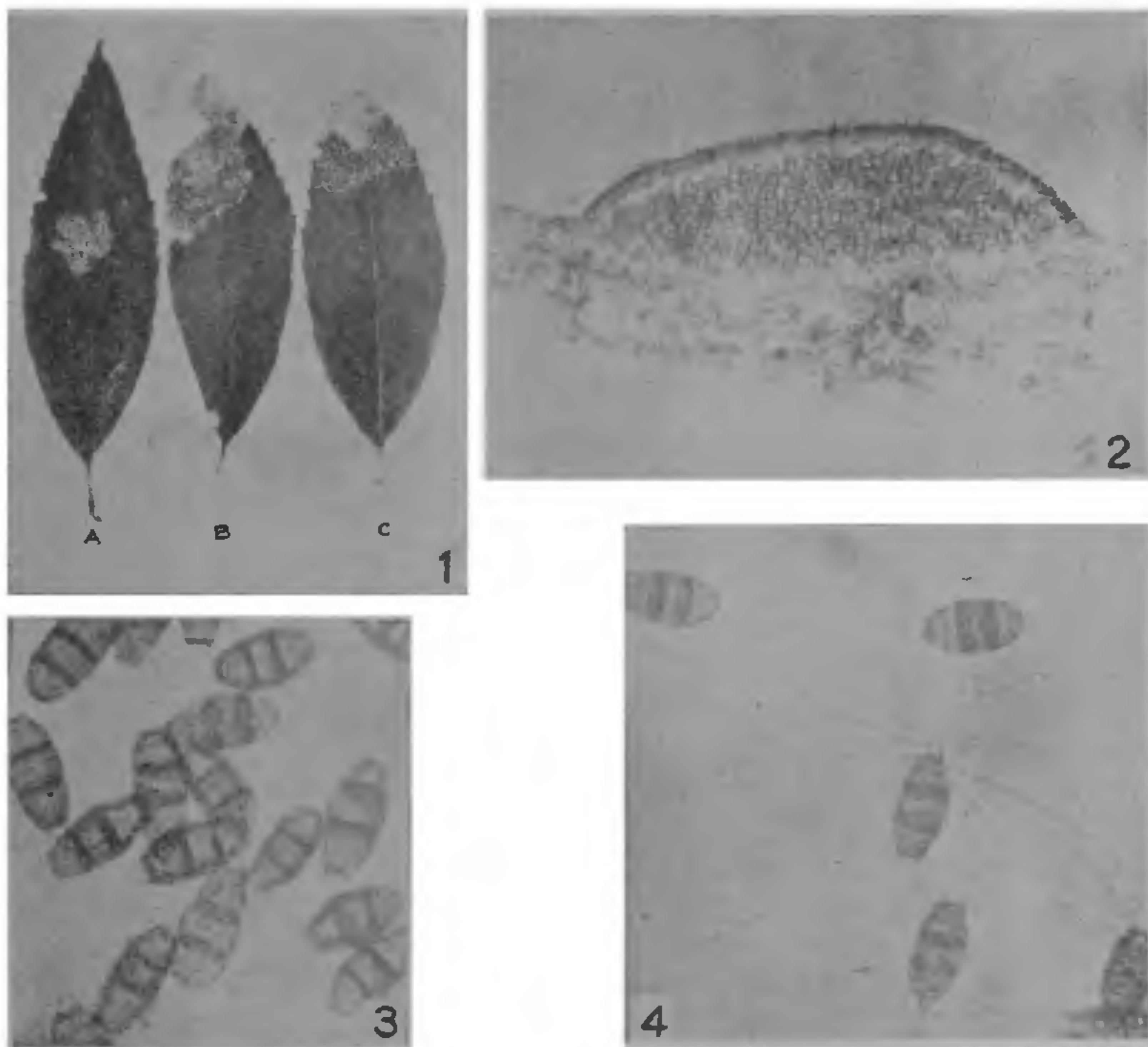
A NEW SPECIES OF *PESTALOTIOPSIS* ON THE LEAVES OF *QUERCUS* *INCANA* ROXB.

IN September 1963, during a collection tour of leaf-spot fungi in Darjeeling area, the authors observed the leaves of *Q. incana* to be unsparingly infected. The spots were light brown or silvery gray with very profuse fructifications on the upper side. The infection usually started from the tips and gradually advanced towards the base (Fig. 1, B and C), sometimes irregular spots which were generally vein limited were produced in the centre (Fig. 1, A). Detachment of the diseased regions was the ultimate phase. Microtome sections through the fruiting bodies showed that acervulus was a well-developed dome-shaped structure filled up with numerous conidia of *Pestalotiopsis*. The specimen of the diseased leaves was sent to Commonwealth Mycological Institute, Kew, but it could not be assigned to any particular species of *Pestalotiopsis*.

Earlier Mundukur and Kheswalla (1942) had recorded *Pestalotia clavispora* Akt. (which has been redescribed as *Pestalotiopsis clavispora* by Steyaert) on the leaves of *Q. incana* at Mussoorie. The present species markedly differs from *P. clavispora* and characters on comparative basis are given in Table I.

Due to pronounced variations in shape, dimension and colour of conidia as well as number and length of setulæ, the present species is being designated as new species.

The detail morphological characters of the isolate are described as follows:



FIGS. 1-4. Fig. 1. Photograph of diseased leaves. Fig. 2. Microphotograph of section of the diseased leaf showing well-developed dome-shaped acervulus, $\times 150$. Fig. 3. Microphotograph of conidia, $\times 525$. Fig. 4. Microphotograph of conidia showing setulæ, $\times 486$.

TABLE I

Characters	Present isolate	<i>P. clavispora</i>
Length and shape of conidia	Clavate, 23.4-31.2 μ	Clavate fusiform, 18-26 μ
Breadth of conidia	7.8-10.4 μ	6.5-8.5 μ
Lower hyaline cell	Protrudes to a long filiform pedicel	Acute or conoid
Colour of the intermediate cells	Olive brown	Umber-fuliginous
Number and length of setulæ	Four to eight, never branched, 20.8-52 μ long	Three or four, rarely branched, 17-31 μ long

Pestalotiopsis darjeelingensis, SP. N.

Hyphæ thin hyaline, richly branched 1.3-3.9 μ in width; conidia five-celled, clavate, 23.4-31.2 \times 7.8-10.4 μ (vide Fig. 3); three median cells olive brown; basal hyaline cell protrudes into a hyaline filiform pedicel measuring 2.6-7.8 μ , superior hyaline cell small and conic, bearing four (10%), five (20%), six (35%), seven (25%) or eight (10%) setulæ of varying length from 20.8-52.0 μ (vide Fig. 4); acervuli erumpent dome-shaped measuring 218.5 \times 74.8 μ to 356.5 \times

126.5 μ , with numerous clavate conidia borne by filiform pedicels (*vide* Fig. 2).

Recovered from the living leaves of *Quercus incana*; Diseased leaves deposited at Commonwealth Mycological Institute, Kew (No. 104002).
Latin diagnosis.

Pestalotiopsis darjeelingensis SPEC. NOV.

Hyphæ tenues, hyalinæ, copiose ramosae, 1.3-3.9 μ latae; conidia 5-cellularia, clavata, 23.4-31.2 \times 7.8-10.4 μ ; cellulæ mediæ tres olivaceo-brunnæ; cellula basalis hyalina protrudit in pedicellum hyalinum filiformem 2.6-7.8 μ , cellula superior hyalina minuta et conica, supportans 4-8 setulas longitudinis variantis 20.8 inter et 52 μ ; acervuli erumpentes, tholiformes, 218.5 \times 74.8 to 356.5 \times 126.5 μ , conidio plurimo clavato insidenti pedicellis filiformibus.

In foliis viventibus *Quercus incanae*; folia infecta posita in C.M.I. ad Kew in Anglia sub numero 104002.

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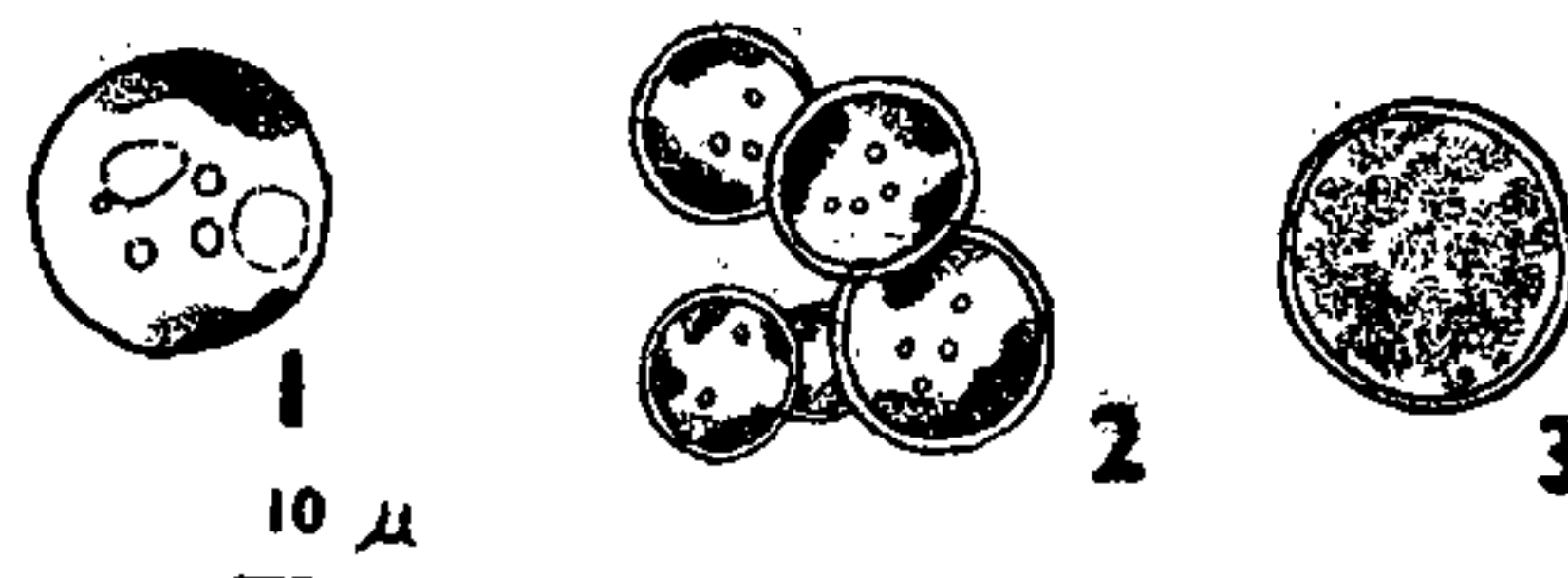
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BOTRYDIOPSIS ARRHIZA BORZI IN INDIA

ONLY four genera of the class Xanthophyceæ were hitherto known from India.¹ The authors recently reported² a fifth genus. In the present communication, it is intended to record yet another genus of this class in the Indian algal flora.

Plants of *Botrydiopsis arrhiza* Borzi³ were collected repeatedly from small ponds in Lucknow, U.P. The alga flourishes during late rainy season and in the winter months. At first, it appears as a plankton forming a yellowish-green scum on the surface of the pond but later, as the pond begins to dry up and water recedes from its fringes, it is forced on to the damp mud where it continues to thrive so long as the mud is damp.

The cells are spherical, with a thin or somewhat thicker wall (Fig. 1). Each cell contains two or more parietal chromatophores in a parietal lining of cytoplasm just internal to the cell-wall. The presence of naked pyrenoids reported by Korschikoff⁴ in the chloroplasts of *Botrydiopsis arrhiza* Borzi could not be detected here. The cells measure 12-14.5 μ in diameter, while the cell-wall may be up to 4.5 μ in thickness. There is a single nucleus. Small oil droplets are found to be present in some cells. The central region of the cells is occupied by a large central vacuole. The cells often have a tendency to remain aggregated together (Fig. 2).



FIGS. 1-3. *Botrydiopsis arrhiza* Borzi. Fig. 1. A vegetative cell showing chromatophores and oil droplets. Fig. 2. A few cells aggregated together. Fig. 3. A reproductive cell containing numerous aplanospores within it.

Reproductive cells were frequently observed. Aplanospore formation was the only method of reproduction met with. A large number of these aplanospores are formed within a single parent cell (Fig. 3) and are liberated by the rupture of the parent wall. These grow to form new plants.

The authors are grateful to late Prof. M. O. P. Iyengar for help in the identification of the alga.

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Lucknow University, P. N. SRIVASTAVA.
Lucknow (U.P.), May 26, 1964.

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