Sciences, Hebbal, Bangalore, for his kind review of this note.

Department of Agricultural Botany, Univ. of Agri. Sci., Hebbal, Bangalore-24, *August* 2, 1971.

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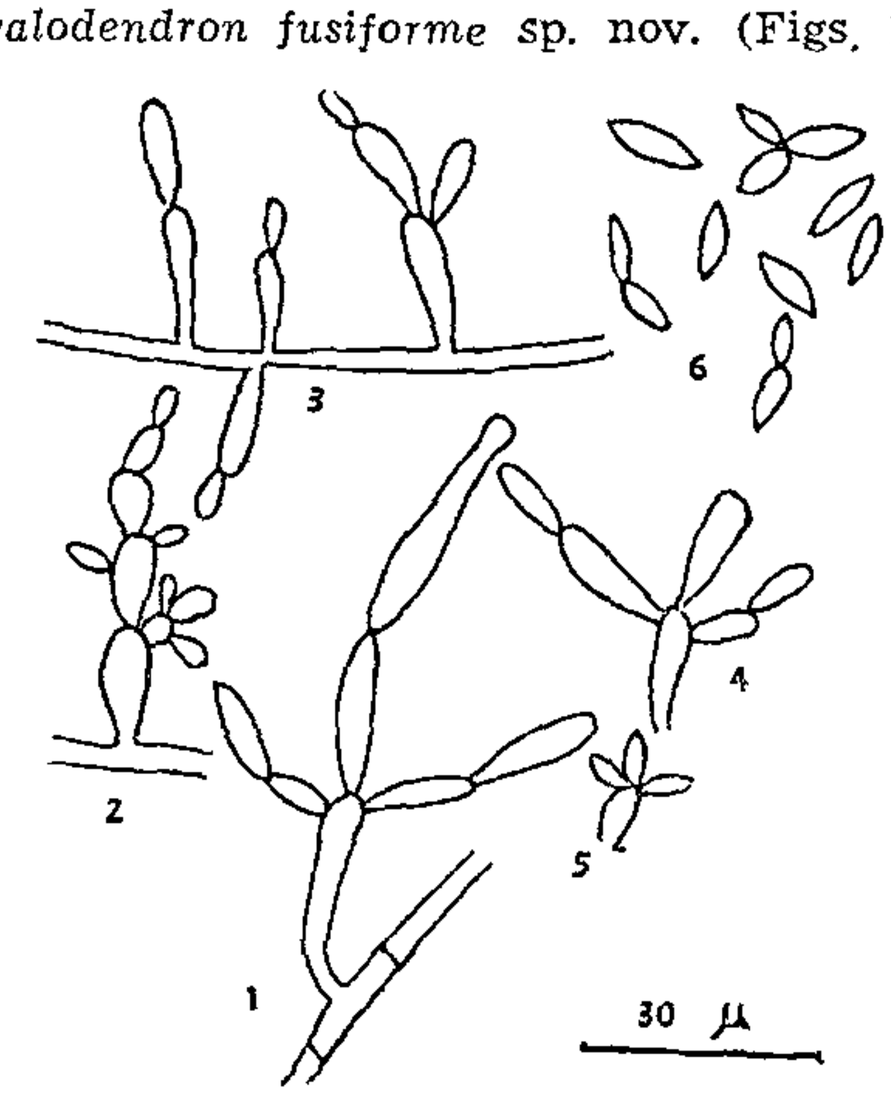
A NEW SPECIES OF *HYALODENDRON* FROM INDIA

DURING the study of folicolous hyphomycetes of Jodhpur, the authors encountered an interesting species of *Hyalodendron* Diddens on the leaves of *Hibiscus rosa-sinensis* Linn. growing in Botanic Gardens, Jodhpur University, Jodhpur. The details of morphological characters showed that the present isolate is distinctly different from other known species[1] in having short claviform conidiophores and fusoid conidia. The conidial size is comparatively bigger than all known species. The isolate is, therefore, being disposed off as a new species.

Hyalodendron fusiforme sp. nov. (Figs. 1–6)



FIGS. 1–6. Figs. 1-5. Conidiophores with sporogenous cells and conidia. Fig. 6. Conidia borne in simple and branched chains.

Colonies spreading with sparse aerial mycelium ; hyphae branched, septate, 1·3–2·0 μ wide ; conidiophores erect or decumbent, simple, unbranched, narrow at the base and broad at the apical portion, variable in length, 12·3–35·7 × 3·0–5·4 (average 24·5 × 4·1) μ ; bearing sporogenous cells or conidia at the apical portion ; conidia blastogenous, frequently in small clusters, becoming catenulate by acropetalous formation of new conidia, conidial chain dendrically branched, one-celled, hyaline, fusoid 8·2–13·6 × 2·7–4·0 (average 9·8 × 3·9) μ.

Isolated from the leaves of *Hibiscus rosa-sinensis* Linn. Culture deposited in C.M.I., Kew (C. No. 129298).

Hyalodendron fusiforme sp. nov.

Coloniae patulae, mycellio aerio sparse ; hyphae ramosae, septatae, hyalinae, 1·3–2·0 μ diam ; conidiophore erecta vel decumbenta, simplicia, aramosae, longitudine varia, 12·3–35·7 × 3·0–5·4 (media 24·5 × 4·1) μ, clavata, cellulae sporogenae vel conidia terminalia gerentia ; conidia plerumque gregatum orta, origineu, . conidiorum monorum acropetalum serius catenulata, conidiorum catenulis dendrioramosis, unicellularis, hyalina, fusoidea, 8·2–13·6 × 2·7–4·0 (media 9·8 × 3·9) μ.

Cultura in foliis *Hibiscus rosa-sinensis* Linn., India, S. M. Reddy et K. S. Bilgrami, IMI 129298 typus.

The authors are grateful to Drs. G. C. Ainsworth and M. B. Ellis of C.M.I., Kew, for sending the opinion on the culture, to Dr. Donald P. Rogers, Professor of Botany, University of Illinois, for Latin translation.

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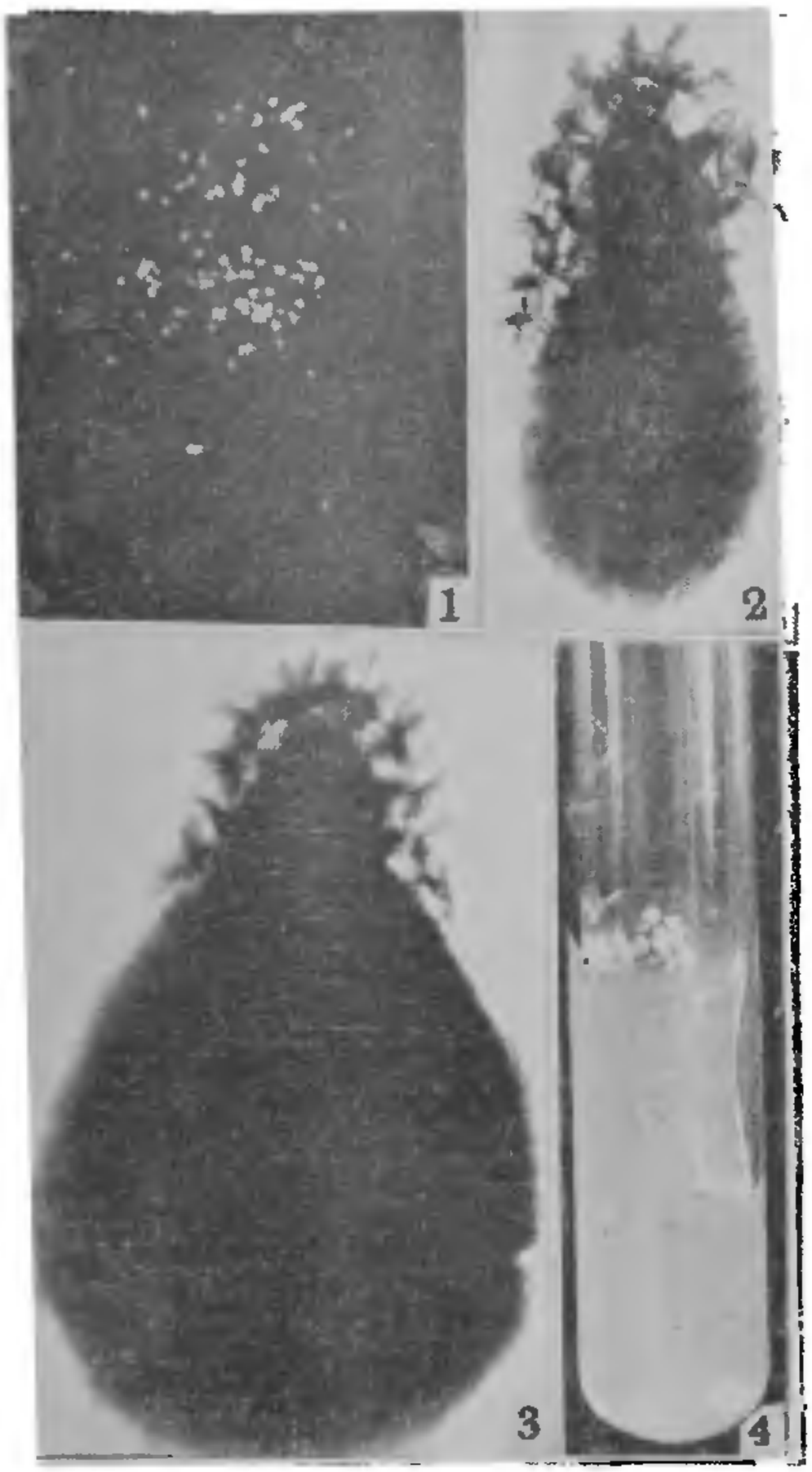
IN VITRO CULTURE OF THE SEEDS OF A ROOT PARASITE : *AEGINETIA INDICA* LINN.

IN general it is believed that the germination of the seeds of parasites is difficult as they are dependent on some stimulants secreted by the hosts. However, in recent years considerable data has accumulated on the germination of such seeds without the association of hosts *in vitro*[1]. Rangan (1965)[2] obtained germination and callusing of the embryo in seed cultures of *Cistanche tubulosa* and the callus further differentiated shoots. In this communication the initiation of germination and the formation of callus from the *in vitro* grown

seeds of *Aeginetia indica* Linn., a member of the Orobanchaceae are reported.



FIGS. 1-4. Fig. 1. Seeds at culture, × 3. Figs. 2–3. Wholemount preparations of germinating seeds from 2-week-old culture; note the intact seed coat, and the enormously swollen embryo in Fig. 3, ×130; 70. Fig. 4. A 6-week-old culture on BM + CM (10%) + kinetin (1 ppm) showing the callused embryos, × nat. size.

Aeginetia indica, a parasitic herb, grows apparently on the roots of many different plants. The mature capsules containing numerous, minute, pale yellow seeds (Fig. 1) were collected from the nearby forests and allowed to shed seeds in petri dishes. The sterilization of seeds was done similar to that in *Orobanche aegyptiaca*[3] either directly or after pre-soaking them for 24 hr in water or gibberellic acid (50 ppm). Then the seeds were transferred to agar nutrient media with a fine sterile scalpel. A modified Whites' medium containing mineral elements, glycine, vitamins and sucrose (2%) served as control (BM). Supplements like coconut milk (CM), IAA, NAA, 2, 4-D, kinetin and casein hydrolysate (CH) were added to BM before autoclaving. All cultures were maintained at controlled conditions of light, temperature and humidity.

At culture the seeds contained a starchy endosperm enclosing an undifferentiated embryo. The latter lacked the demarcation into the radicle, plumule and the cotyledons. On BM the seeds turned dark brown within a week after culture. They lay quiescent and failed to show any signs of germination even after 10 weeks of culture. Similar responses were noted in seeds sown on BM + CM (10%); BM + CM (10%) + IAA or NAA or kinetin (1 ppm each); BM + CH (1000 ppm) + kinetin (5 ppm) + 2, 4-D (2 ppm); and BM + CH (1000 ppm) + kinetin (2 ppm) + IAA (2 ppm).

However, good responses were obtained in pre-soaked seeds sown on BM supplemented with CM (10%) + kinetin (2 ppm) or both kinetin (2 ppm) and 2, 4-D (2 ppm). After a week of culture the seeds enlarged considerably. Subsequently the seed coats ruptured and the enlarging embryo emerged out after 2 weeks (Figs. 2, 3). In 6-week-old cultures the entire surface of the medium was filled with the germinating seeds. The radicle differentiated and occasionally developed into a root. The embryos, however, exhibited enormous swelling all over their surface. Many of them ruptured to yield a friable mass of yellowish tissue (Fig. 4). The microscopic examination of the embryos revealed that the callus originated from all over the surface. The callus comprised cells of diverse shapes and sizes. Thus with the use of *in vitro* culture technique the seeds of the parasitic angiosperms can be germinated without the association of the host.

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