Holotype: KERALA, Calicut District, Pokkunnamalai, Near Nanminda, ± 850 m, 29th October 1981, *P. V. Sreekumar* 71814 (CAL). Isotypes in K, MH.

Rare, in open grasslands and dry grassy hill slopes along with other grasses like *Aristida setacea* Retz., *Ischaemum rangacharianum* C. E. C. Fischer and a few other *Dimeria* spp.

This species is allied to *Dimeria bialata* C. E. C. Fischer, but markedly differs from it as shown in the table 1.

TABLE 1

Dimeria bialata C. E. C. Fischer	*Dimeria jainii* sp. nov.
1. Rhachis *ca.* 0.75 mm wide, margins sparsely ciliate.	Rhachis narrower, *ca.* 0.5 mm wide, margins densely ciliate.
2. Articulation of pedicels truncate.	Articulation concave.
3. Callus hairs up to 0.25 mm long.	Callus hairs 0.5–1 mm long.
4. Upper glumes winged throughout, acute at apex, wing corky.	Upper glumes not winged at apex, acuminate, wing papery.
5. Anthers *ca.* 1 mm long.	Anthers *ca.* 0.5 mm long.

The specific epithet is after Dr. S. K. Jain, Director, Botanical Survey of India, in recognition of his outstanding contributions to the study of Indian Grasses.

The authors are thankful to Dr. Thomas A. Cope of The Herbarium, Royal Botanic Gardens, Kew for examining our specimens and giving his valuable opinion.

PYTHIUM ELONGATUM MATTHEWS A NEW RECORD FOR TEMPERATE INDIAN AQUATIC FUNGI

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DURING a study on aquatic fungi of some moist soils of Kumaun Himalaya, along with several members of Pythiaceae (order Peronosporales), *Pythium elongatum* Matthews was isolated which is found to be new record for temperate Indian aquatic fungi.

Soil samples were treated on the lines suggested by Dick and Newby[1], and unifungal bacteria free culture was made on sterilized hempseed halves at room temperature (15–20° C). The isolate was identified with the help of the monograph by Middleton[2].

The isolate consists of hyphae measuring from 3 to 6 μm in diameter; at base, branched, sporangia terminal or intercalary, pyriform cylindrical, sperical, measuring from 10–16 μm in diameter; zoospores produced in a vesicle with long basal tube; encysted zoospores 5 to 10 μm in diameter; sex organs absent.

The author is thankful to the Director, C.M.I. for confirmation of the isolate and also to Prof. B. S. Mehrotra for providing laboratory facilities.

7 September 1982; Revised 2 November 1982

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TOTAL PHENOLIC CONTENT OF RIDGEGOURD LEAVES IN RELATION TO DOWNY MILDEW INFECTION

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PHYSIOLOGICAL maturity of the leaf in cucurbitaceous members is one of the factors governing resistance to *Pseudoperonospora cubensis* (Berk. and Curt.) Rostow. infection even in susceptible varieties[1-3]. New true leaves formed remained free from infection, until the physiological activities in relation to development and differentiation ceases[4]. In addition, cotyledonary leaves remain equally susceptible as the mature leaves[5]. In cucumbers, Iwata[2] had shown that the susceptibility of the mature leaves may be governed by the fully open stomata. At the same time he doubted that in addition to external factors like glassy nature of young leaves, which are unwettable, unopen stomata, compactly arranged hairs; internal physiology of the leaves may not be conducive for infection and establishment.

Many workers have correlated the presence of high amount of phenols with resistance to various plant pathogens[6]. In the present study one of the principal hosts of *P. cubensis* was used to correlate the total phenolic content of the healthy leaves of different

physiological maturity to downy mildew infection. Two varieties of ridgegourd (*Luffa acutangula*) *viz.*, Pusa Nasdar, a susceptible variety and a long variety which is moderately resistant were used. When the plants were at the 5–6 leaf stage the total phenolic content of the cotyledonary leaves and the first five leaves from the base were analysed individually by the following method.

To get the extract, 0.5 g of fresh tissue was ground in a glass mortar with methanol. The extracted material was heated in an oven at 80° C for 30 min. It was then cooled and the solution filtered using Whatman No. 1 filter paper. The filtrate was evaporated at 60° C. The residue was recovered with 10 ml of distilled water. The total phenols were estimated by the method of AOAC[7]. The results are expressed in catechol equalents.

TABLE 1

Total phenolics in the leaves of two varieties of ridgegourd

Leaf No. from the base	Disease reaction	mg/g fresh wt.
Pusa Nasdar (Susceptible)		
Cotyledonary leaf	Susceptible	1.20
1st true leaf	Susceptible	1.45
2nd true leaf	Susceptible	1.55
3rd true leaf	Moderately resistant	1.70
4th true leaf	Resistant	2.15
5th true leaf	Resistant	2.15
Long Variety (Moderately Resistant)		
Cotyledonary leaf	Susceptible	1.20
1st true leaf	Susceptible	1.45
2nd true leaf	Susceptible	1.60
3rd true leaf	Resistant	2.00
4th true leaf	Resistant	2.15
5th true leaf	Resistant	2.55

Table 1 shows that total phenolics in the cotyledonary leaves and the mature leaves is small in both the varieties tested. As the leaves mature, the concentration of phenols decreases. The total amount of phenols in the young leaves of long variety is comparatively more. The third leaf in long variety remained uninfected when it is sprayed with sporangial inoculum, while in Pusa Nasdar there was little infection. There is no appreciable difference in the phenolic contents of the cotyledonary leaves and the basal two leaves between these two varieties.

The inhibitory activity of phenols is generally attributed to the reactivity of the quinone which the system generates[8,9]. Most of the work on phenolics is in relation to host response to pathogen infection. In carrot presence of higher concentration of preformed phenolics in young leaves is being correlated to the resistance to *Alternaria dauci* infection[10].

The concentration of total phenols and their susceptibility to infection is related to *P. cubensis* in both varieties. In ridgegourd atleast top two leaves remain healthy even under heavy inoculum pressures at 5–6 leaf stage. Higher concentration of phenolics in these leaves may be one of the internal factors inhibiting downy mildew infection.

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ORIGIN AND EVOLUTION OF *SOLANUM SCABRUM* MILL. AND ITS RELATIONSHIP WITH THE INDIAN HEXAPLOID *SOLANUM NIGRUM* L.

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A fertile and true breeding mutant with large purplish black fruits and viable seeds was obtained[1] from C_3 population of synthetic hexaploids ($n=36$), produced by doubling the chromosome number of sterile F_1 hybrids ($n=18$) of the cross tetraploid *S. nigrum* × diploid *S. nigrum*[2]. Since the mutant produced large fruits, as compared to those of the Indian hexaploid *S.*