

patches. Spikelets ca. 1.5 mm long, with two similar bisexual florets; pedicels short. Glumes 2, ovate, obtuse, shorter than lemmas, minutely hairy with few long hairs at the tip; lower ca. 1.1 mm long, faintly 3-nerved; upper 1.2–1.4 mm long, faintly 5-nerved. Lemmas 2, subequal, coriaceous, elliptic, puberulous, 1.2–1.5 mm long, with woolly hairs at base; paleas elliptic, obtuse, margins incurved. Lodicules 2, minute. Stamens 3; anthers ca. 0.8 mm long. Caryopsis ca. 0.8 mm long, ovoid.

INDIA—Karnataka State, South Kanara District: Manipal, 150 m, growing in marshy soils, 29 October 1977, K. G. Bhat 468 A (holotype in CAL, isotypes in L, MH, BSI and Mysore University Herbarium).

The specific epithet is in honour of Dr. J. F. Veldkamp, Rijksherbarium, Leiden.

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### *DIMERIA JAINII* (POACEAE)— A NOVELTY FROM KERALA, INDIA

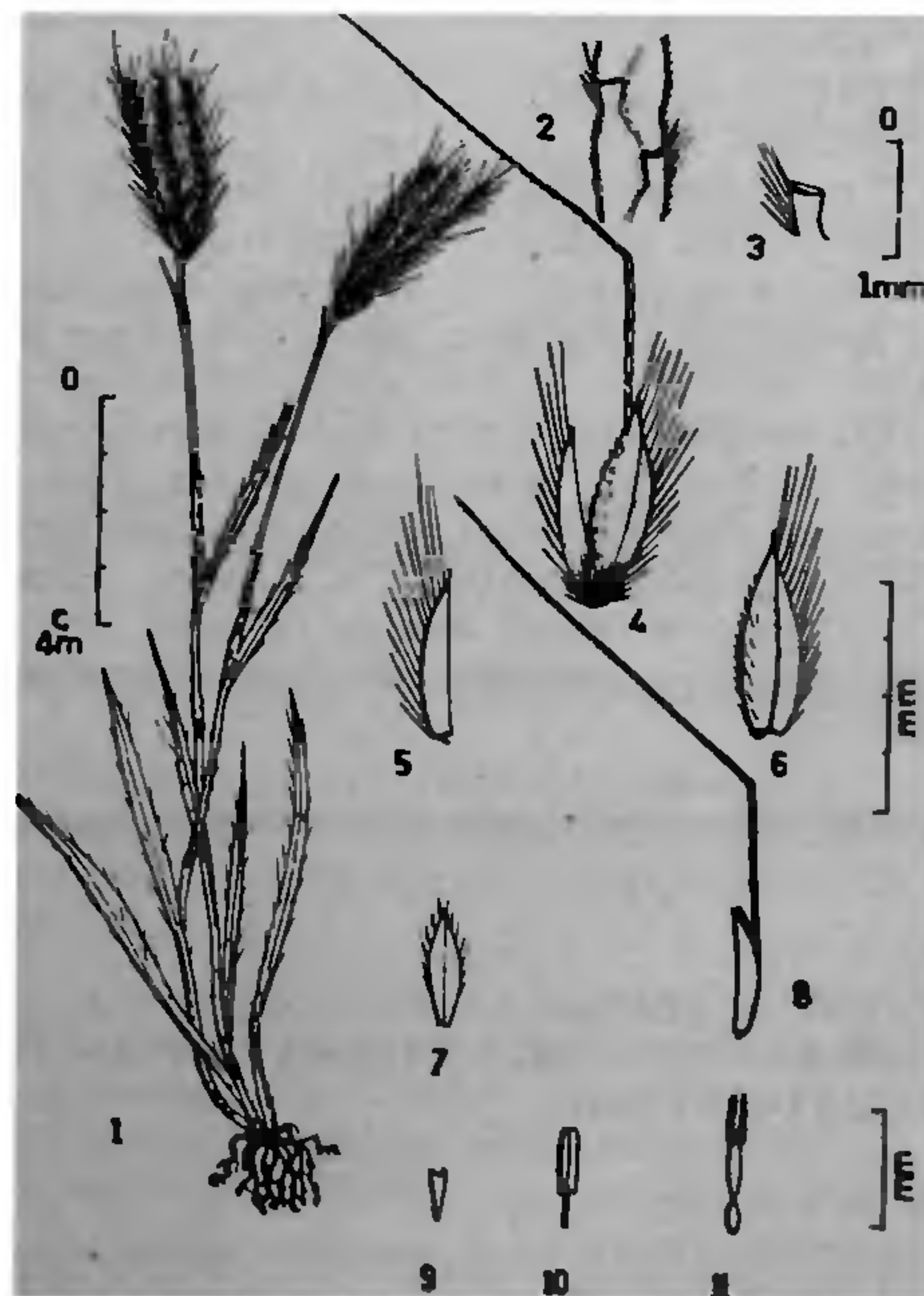
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*Dimeria jainii* P. V. Sreekumar, V. J. Nair et N. C. Nair, sp. nov.

*DIMERIA bialata* C. E. C. Fischer affinis, sed rhachidi angustiore (ca. 0.5 mm); margine rhachidis dense ciliato; pilis calli longioribus (usque ad 1 mm); gluma supera acuminata; carina glumae superae apice non alato, alibi alata; ala papyracea; pilis glumae superae longioribus (1–2 mm); antheris parvioribus (ca. 0.5 mm), differt.

Annuals. Culms 10–20 cm tall, erect; nodes glabrous. Leaves 2–8 × 0.2–0.3 cm, linear-lanceolate, acuminate, rounded at base, covered with long or short tubercle-based hairs, midrib prominent. Sheaths 1–5 cm, shorter than the internodes, slightly keeled, villous with tubercle-based hairs. Ligule a short fimbriate membrane. Racemes usually 3, rarely

2, each 2–4 cm long. Rhachis ca. 0.5 mm wide, flattened, margins densely ciliate. Spikelets 3–3.5 mm long, ovate, acuminate, densely ciliate. Pedicels ca. 0.5 mm, joints concave. Callus hairs 0.5–1 mm long. Lower glumes 2.25–2.5 × 0.5–0.75 mm, linear-lanceolate, densely ciliate along the dorsal margins, cilia 0.5–2 mm long. Upper glumes 3–3.5 × 1.5–2 mm, ovate, acuminate, broadly winged except at tip, wing papery, long ciliate along keel, cilia 1–2 mm long, margins shortly ciliate and hyaline. Lower floret empty; lemma 1.5–2 × 0.3–0.5 mm, elliptic, acute, delicate, hyaline, faintly 1-nerved, margins ciliate in the upper half. Upper floret bisexual; lemma 1.75–2 × 0.6–0.75 mm, delicate, notched at apex, awned, awns 10–12 mm long, geniculate, column ca. 3 mm long, twisted, brownish, bristle pale, scabrid; lodicules 2, each ca. 0.4 × 0.1 mm, oblanceolate, 2-lobed at apex, stamens 2, anthers ca. 0.5 mm long, filaments short; ovary ca. 0.25 mm long, elliptic, styles ca. 0.5 mm long, slender, stigmas ca. 0.35 mm long, feathery.



Figures 1–11: *Dimeria jainii* sp. nov. 1. Plant; 2. A portion of rhachis showing pedicels; 3. Pedicel; 4. Spikelet; 5. Lower glume (lateral view); 6. Upper glume (lateral view); 7. Lower lemma (dorsal view); 8. Upper lemma (lateral view); 9. Lodicule; 10. Stamen; 11. Pistil.

Holotype: KERALA, Calicut District, Pokkunnamalai, Near Nanminda,  $\pm$  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 I.

TABLE I

<i>Dimeria bialata</i> C. E. C. Fischer	<i>Dimeria jainii</i> 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<sup>1</sup>, 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<sup>2</sup>.

The isolate consists of hyphae measuring from 3 to 6  $\mu$  m in diameter; at base, branched, sporangia terminal or intercalary, pyriform cylindrical, spherical, measuring from 10–16  $\mu$  m in diameter; zoospores produced in a vesicle with long basal tube; encysted zoospores 5 to 10  $\mu$  m 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

1. Dick, M. W. and Newby, H. V., *J. Ecol.*, 1961, **49**, 403.
2. Middleton, J. T., *Mem. Torrey. Bot. Club.*, 1943.

### **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<sup>1-3</sup>. New true leaves formed remained free from infection, until the physiological activities in relation to development and differentiation ceases<sup>4</sup>. In addition, cotyledonary leaves remain equally susceptible as the mature leaves<sup>5</sup>. In cucumbers, Iwata<sup>2</sup> 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<sup>6</sup>. 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