tetrahedral arrangements of microspores. The nucleus of the young microspore divides to form a small generative and a big vegetative cell. The former later divides into two male gametes. Thus mature pollen grains in this taxon are 3-celled (Fig. 4) as in *Cratæva religiosa* (Raghavan[4]).

We are grateful to Prof. L. B. Kajale for kindly going through the manuscript and necessary facilities. The second author is also thankful to Dr. G. B. Deodikar, Director, M.A.C.S., Poona, for his kind interest.

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A NEW SPECIES OF *PHYLLOSTICTA* PERS. EX DESM. FROM JODHPUR

DURING the study of sphæropsidales of Jodhpur, the author recorded a leaf-spot disease on *Pithecolobium dulce* Benth. The diseased and healthy portion was demarcated by dark brown boundaries. The disease first appeared as light brown spots on the tip which gradually advanced towards the base. At advanced stages the lesions became irregular and changed to brown colour. Black dot-like pycnidia were profusely produced in the infected regions. Examination of the lesion revealed the pathogen to be a *Phyllosticta*. The specimen was sent to C.M.I., Kew, where it was examined by Dr. Punithalingam but it could not be assigned to any specific position. The conidial and pycnidial morphology of the organism was compared with all the existing species of *Phyllosticta* but it did not tally with any of the present species.[1-4] It is, therefore, being designated as a new species, *i.e.*, *Phyllosticta pithecolobii*.

Phyllosticta pithecolobii SP. NOV.

Hyphæ colourless to light brown, closely septate, poorly branched, 1·5–3·6 μ wide; pycnidia globose to elongate, assuming balloon-shaped structure, light yellow to yellowish-brown, erumpent. 33·6–168·4 μ in diameter (average 142·8 μ), wall persistent, membranous, few-layered; conidia borne singly at the tips of short conidiophores, hyaline to light yellowish-green, single-celled, wall irregular, 7·6–9·8 × 3·8–5·4 μ (average 8·6 × 4·2 μ).

Culture deposited in C.M.I., Kew, Herb. No. 130815.

Latin Diagnosis.—Hyphæ hyalinæ vel pallide brunneæ, frequenter septatæ, sparse ramosæ, 1·5–3·6 μ latæ; pycnidia globosa vel elongata, demum physalidiformia, pallide lutea vel luteo-brunnea, erumpentia, 33·6–168·4 μ (media 142·8 μ) diametro, pariete persistente, membranaceo, e laminis paucis composito; conidia singula in apicibus conidiophororum brevium orta, hyalina vel pallide luteo-viridia, haud septata, tunica irregulari, 7·6–9·8 × 3·8–5·4 μ (media 8·6 × 4·2 μ).

Cultura in Instituto Respublicæ Mycologico (C.M.I.) Kewensi sub numero 130815 deposita.

The author expresses his grateful thanks to Dr. K. S. Bilgrami for his guidance, to Dr. G. C. Ainsworth and Dr. Punithalingam of C.M.I., Kew, England, for help in the identification of species. He is also thankful to Dr. Donald P. Rogers, University of Illinois, U.S.A., for Latin diagnosis.

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VIABILITY TESTS ON JUTE SEEDS (*CORCHORUS OLITORIUS* L. VAR. JRO 632)

JUTE seeds are very delicate and lose viability within a short span of 4–6 months under poor conditions of storage.[1] The importance of proper storage is thus obvious. The viability of seeds can be worked out with fair accuracy by germination test conducted on moistened blotting-paper but this method requires 24–72 hours with jute seeds. Cottrell[2,3] tested cereal seeds through use of 2-3-5 triphenyl tetra-

TABLE I

Test	Seed category	Colour		Fluorescence
		Extract in test-tube	Spot on filter-paper	
1. Aqueous extract ..	Viable	Colourless to tinged yellow, clear	Colourless	Nil
..	Non-viable	Pale yellow to yellowish-orange, frequently turbid	Faint yellow	Marked
2. Alcohol-benzene extract ..	Viable	Greenish-yellow	Greenish-yellow	Some
	Non-viable	Deep yellow	Deep yellow	Marked
3. Crushing ..	Viable	..	Yellow	Faint
	Non-viable	..	Yellowish orange	Marked

zolium chloride and evaluated their germination capacity in less than 24 hours. Mukherjee *et al.*[4] employed triphenyl tetrazolium bromide on cut seeds of *Corchorus capsularis*. The development of a purplish-red colour on the cut surfaces of seeds was considered to be an indication of normal viability. However, jute seeds are very small and cutting of seeds and estimation of colour differences on cut surfaces is a laborious task. It was, therefore, felt necessary to work out procedures for determining the viability of jute seeds which would be rapid, reliable and sufficiently simple to hold promise of eventual implementation by the farmer.

Three different methods have been tested in our laboratory for determining the viability of jute seeds (*Corchorus olitorius* L. var. JRO 632). Seeds recording more than 90% germination in the petri dishes were considered viable and seeds with nil germination as non-viable. For test No. 1 (Table I) seeds were soaked in excess water for 3–4 hours and the supernatant liquid was used. For test No. 2, seeds were extracted in alcohol-benzene mixture (1 : 2) in a soxhlet apparatus and the extract was boiled off, the residue was dissolved in benzene and the resulting solution was used. For test No. 3, moistened seeds were directly crushed on the filter-paper and the spots left behind were examined. Filter-paper spots from all three tests were studied under the UV (253–366 mμ) lamp. The colour description of the extracts in test-tubes and spots on filter-paper and presence, if any, of fluorescence under the UV lamp are shown in Table I.

One-, two- and three-year old seeds of JRO 632 (*C. olitorius*) showing 96, 92 and 0·00% germination respectively were also tested. Turbidity and more discernible colourations of solutions of extracts appear to be associated with lack of viability and not with the age of the seed. Further support to this view was obtained when fresh samples of viable seeds were steamed for 30 minutes and aqueous extracts of unsteamed (viable) and steamed (non-viable) seeds were compared; it was noticed that intense colouration and frequent turbidity were restricted to extracts of steamed seeds.

The seed-crushing test gives marked colour difference even under normal light, and is the quickest and simplest of the three. It is, therefore, felt that this can be used for ready identification of viable and non-viable seeds at the field level. The aqueous extract test is also simple and decisive.

Work is in progress to evaluate the power of resolution of the tests in mixtures of viable and non-viable seeds.

We thank the Director, Indian Jute Industries' Research Association, for permission to publish the results described here and Mr. A. K. Datta for occasional help.

Indian Jute Industries' Research Association, Calcutta-53, *April* 23, 1970.

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