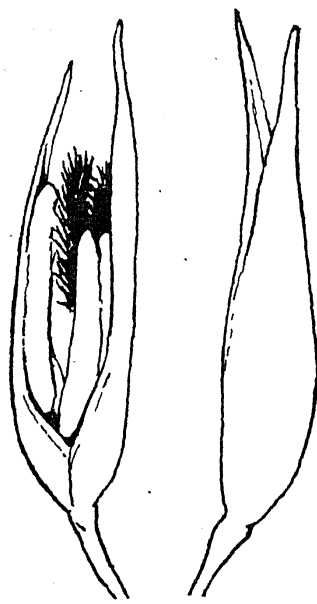


PROTOGYNY IN INDIAN FORMS OF *SACCHARUM SPONTANEUM*

PROTOGYNY in only one African form (Uganda) of *Saccharum spontaneum* (known as 'Kans' in Hindi) was reported by Dutt and Krishnaswami,¹ but not in any Indian form uptill now. An examination of the *Spontaneums*, collected by the writer under the *Spontaneum Expedition Scheme*, financed by the Indian Central Sugarcane Committee, shows that 4 types (SES* 29, 32 B, 65 and 66) out of the 94 collected so far are protogynous. The phenomenon is not so conspicuous as in the Uganda form, as the stigmas do not project out of the glumes. But the glumes are found to open out making the bright maroon-pink coloured stigmas well exposed, at least 24 hours earlier than the bursting of anthers in the same flower (Figs. 1 & 2).



Protogynous Flower
Normal Flower
24 hrs. before anthesis

FIG. 1. Showing an enlarged drawing of a normal and a protogynous flower.

The receptivity of the stigmas in the protogynous flowers of the above types was tested by the setting of seeds and their germination, after bagged pollination of emasculated flowers. SES 29, 32 B, 65 and 66 were used as mothers, selected branches of which were emasculated and bagged after pollination with the pollen from SES 69, 44, 66, 44 and 71 respectively. The seeds collected from the pollinated branches germinated, whereas in the 'general crosses' (where the panicles were kept as

it is) most of the seeds did not germinate. SES 66 showed better receptivity and SES 44 is indicated to be a good pollen parent. Direct observation of the stigmatic branches after pollination also shows that the pollen germinates on the stigma, giving out long tubes.

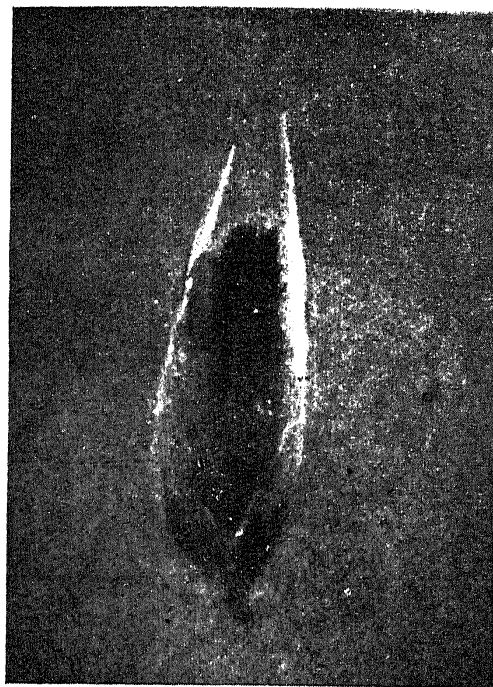


FIG. 2. A microphotograph of a protogynous flower. Note the prominently exposed stigma and unopened anthers.

The present observation regarding occurrence of protogyny in the Indian forms of *S. spontaneum*, and the receptivity of stigmas at that stage has opened up possibility of using the Indian *spontaneum* also as female parents in sugarcane breeding. This will have a definite use also in genetical studies.

Thanks are due to Sri. N. L. Dutt, Sugarcane Expert, Coimbatore, for formulating the scheme and for keen interest in work.

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1. Dutt, N. L., and Krishnaswamy, M. *Curr. Sci.*, 1943, 12, 24-26.

* SES means 'Spontaneum Expedition Scheme'.