Lim *et al.*[1] have made a chromosomal survey of ten populations of two species of *Teleogryllus*, viz., *T. commodus* and *T. oceanicus*, collected from different parts of Australia and neighbouring islands. Though the diploid number of both the species is 27, the karyotype of each population is different from the other with reference to the number of biarmed and telocentric chromosomes. For *T. commodus* they have described 5 karyotypes from different parts of Australia, one from Tasmania and one from New Zealand. For *T. oceanicus* they found two different karyotypes in two regions of Queensland and one from Tahiti. Interestingly none of these karyotypes resembles the karyotype of *Teleogryllus* sp. of the present study. The only karyotype which is close to the present karyotype is that described for the Tasmanian population.

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A NOTE ON FLORAL ABNORMALITY IN SUGARCANE UNDER *IN VIVO* AND *IN VITRO* GROWN CONDITIONS

THE inflorescence in the case of sugarcane consists of uniflorous spikelets. Each floret in turn has a set of glumes, three stamens and a pistil with two styles ending in hairy stigmas. Occasionally abnormalities are observed in this make-up[1–4]. Often there occurs a partial or complete transformation of the stamens into carpels referred to as pistillody[3]. Crosses involving spontaneum as one of the parents and a few among spontaneum varieties have been reported to contain some such abnormalities[4]. In the present study, some floral abnormalities such as extra style formation and the occurience of multiple pistils observed both *in vivo* and *in vitro* conditions are reported.

A cross-section of varieties representing *Saccharum spontaneum*, *S. officinarum*, a few other species, related genera and commercial hybrids under cultivation were examined for their floral morphology in their growing season. On an average 100 spikelets were examined in each variety. *In vitro* both fertilised and unfertilised pistils of *Saccharum spontaneum* SES 113B were cultured on modified MS medium[5] for tissue culture studies. Initially the cultures were grown for a month in the dark and later they were given a photoperiodic treatment of 18/6 hours at an illumination of 250 lux. All the inoculated pistils carried only two styles.

Under *in vivo*, the type SES 113B alone in Spontaneum and Co 285 among hybrids showed the formation of a extra style, while in the rest of the species, genera and hybrids the spikelets were quite normal. In these two varieties the occurrence of three styles were noteworthy (Fig. 1) as against the normal two

FIG. 1. Showing the occurrence of three styles.

styles. The three styled spikelets were more in Co 285 than in SES 113B. Here the spikelets were all from the early formed arrows. SES 113B flowered in August while the Co 285 was forced to flower early in September by subjecting the plants to photoperiodic treatment. However, not all the plants in these varieties exhibited this abnormality. Pistillody was absent as the stamens were normal.

The occurrence of biflorous spikelets was a common feature in the late formed arrows of SES 113B. These spikelets also carried the extra styles. The phenomenon may be similar to multiple seeded spikelets observed in some cultivars of sorghum[6]. The other possibility could be that the sterile flower which is represented as a delicate lemma or third glume might have developed into a fertile flower and added to the extra floret observed within the same spikelet. This lends support to the fact that the spikelets of sugarcane are fundamentally two flowered like maize, sorghum and other related grasses. It might also be due to disturbances during the fertilisation[4], which might have made even the sterile flower functional.

More than 90% of the pistils of SES 113B grown in *in vitro* developed into supernumerary ones (Fig. 2).

FIG. 2. Showing the multiple pistillate condition. From one ipsitl as many as four to five were found to develop with or without their styles. Often the styles originated with their basal portion being swollen. This might have resulted from the development of all the carpels into a ovule each accompanied by with or without the development of rudimentary sterile flower. It is also possible that each pistil has several primordia which under favourable condition can develop into flowers. Thanks are due to Dr. J. T. Rao and Dr. D. Jagathesan for encouragment.

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A CHROMOSOME MAP OF FIVE ANTHOCYANIN GENES IN RICE (*ORYZA SATIVA* L.)

RAMIAH[11] first reported a linkage group of genes controlling pigmentation in four parts, *viz.*, leaf sheath internode, apiculus and stigma. About a dozen accounts of linkage between genes determining two or three of the above characters have appeared so far in literature. They are briefly summarised below :

Linked pigment characters	Cross over estimates in percentage reported in the references
Leaf sheath — stigma	(4) 9·8
Stigma — apiculus	(13) 9·11; (10) 11·61; (7) 12·0; (9) 12·0; (8) 2·99
Leaf sheath — apiculus	(13) 11·91; (12) 18·0
Leaf sheath — internode	(5) 4·30; (12) 14·0
Stigma — internode	(6) 17·19; (7) 4·0

Note : Figures in brackets are numbers of the references given at the end of the note.

This note is meant to show the arrangement of the above genes in a chromosome map. The finding is based on F_2 data collected in reciprocal crosses between two varieties, *viz.*, Blue Belle* and Kosbhat**. The (B × K) F_2 and (K × B) F_2 had respectively 172 and 167 plants. They were scored for colour expression in leaf sheath, internode, apiculus and stigma by conventional methods. Pigment in leaf sheath could not be recorded in (B × K F_2, as the plants were in a water-logged spot where colour expression was not clear due to decay of the sheath. Since there was good homogeneity between the two crosses for the single character segregations of internode, apiculus