Shimoga where ratooning was practiced to an unusual extent. The identity of the RSD-associated bacterium was confirmed by electron microscopy and a positive microagglutination reaction.

TABLE I

Results of a survey for RSD in Karnataka State

Locality	Clone	No. infected stools/No. stools tested
Mandya	Co 419	0/1
Regional Res. Sta.	Co 7108	0/1
	Co 7116	1/1
	Co 62175	1/1
	KHS 2233	4/6
	KHS 2950	1/1
	KHS 2969	1/1
	KHS 3296	6/6
	KMS 992	0/2
	KMS 1385	0/1
Mandya–Mysore Commercial Farm		
1	Unidentified	2/2
2	Unidentified	2/2
3	Unidentified	1/2
4	Unidentified	1/2
5	Unidentified	0/2
6	Unidentified	0/2
Dharwad		
UAS, Campus	Co 6415	0/2
Sankeswar	Co 1307	0/1
Belgaum Commercial Farm 1	Co 740	0/6
	Belikabbu	0/2
Shimoga Commecial Farm 1	Co 740 (6th ratoon)	0/1
	Co 740 (12th ratoon)	1/2
	Co 62175	0/1
	H 2045	0/1

The economic importance of RSD in the Mandya–Mysore area is unknown. On the one hand, some clones, such as KHS 2233 and KHS 3296, showed distinct reddening of the vascular bundles in the nodes and may be sensitive to RSD. On the other hand, since sugarcane is grown with the aid of irrigation, the heavy losses caused by the disease under drought conditions[1] will be avoided.

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SYNERGID EMBRYO IN *PENNISETUM SQUAMULATUM*

OCCURRENCE of more than one embryo in an embryo sac has been frequently reported in flowering plants. The presence of an extra embryo in grasses within the same sac is generally believed to be due to the apogametous nature of the plant. The most common source of apogametous embryo is the synergid. This condition has been recorded in *Saccharum spontaneum*, *Triticum speltata*, hybrids of *Avena strigosa* × *Avena fatua* and of *Calamagrostis obtusa* × *Calamagrostis purpurea*[1,2]. There is a strong tendency to opine that the interspecific or intergeneric crosses would stimulate synergid growth[2]. The second embryo which is usually smaller than the zygotic embryo within the same embryo sac is deemed to be of synergid origin.

Due to some irregularities which operate during the development of female gametophyte, the synergids are reported to behave as egg cells in *Poa alpina*[3]. In *Tripsacum dactyloides* extra embryos may arise from a synergid within the same embryo sac. This possibility is suspected because of the position occupied by the extra embryo in relation to the zygotic embryo[4]. In *Agropyron scabrum*, several abnormal embryo sacs

possessed an extra egg which is believed to be a transformed synergid[5]. In *Pennisetum dubium*, autonomous development of a mass of cells much resembling the embryo was noticed even when egg and polar nuclei are present. This embryo-like structure again indicated the possibility of synergid being the source[6].

In several instances of the suspected origin of embryo from synergid, the possibility of nucellar origin or cleavage of the zygotic embryo as causes are not ruled out. Thus, no conclusive evidence of synergid origin has been presented by the early workers. In most of the reports dealing with the origin of the embryo, the sac essentially possessed unfertilized polars and nearly total absence of endosperm.

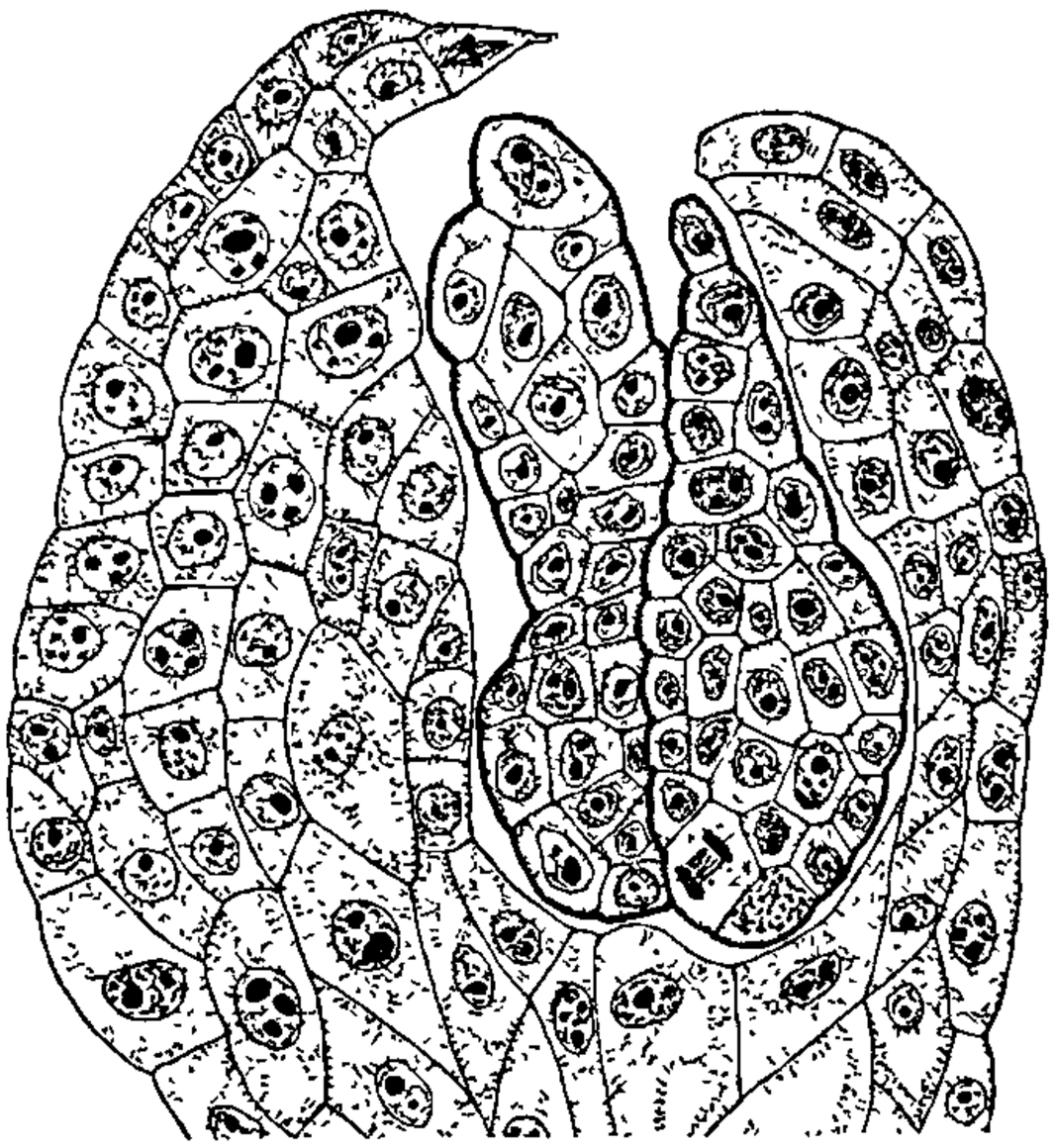

FIG. 1. Twin embryos embedded in cellular endosperm ; embryo towards left is of zygotic origin and the one towards right is of synergid origin, × 2,000.

The present investigation in *Pennisetum squamulatum* Fresen of Panicoideae offers a clear instance of synergid origin of an extra embryo within a single embryo sac. This is evident from the occurrence of twin embryos which are surrounded by copiously formed endosperm (Fig. 1). In this species, several ovules showed entry of more than one pollen tube into one and the same embryo sac. The gametes which are discharged by the pollen tubes near the vicinity of the egg apparatus in all probability fertilize both the egg and synergid as well as secondary nucleus. The synergid origin of the second embryo following fertilization is further confirmed by the nearly diploid number of chromosomes that were counted in the component cells. In addition, one of the embryos exhibits the typical multicellular squat suspensor, a characteristic feature of the sexual embryo in the Gramineae. The other embryo, however, is pear-shaped, reflecting the contour of the synergid itself ; in position too, it lies in the same locus of the synergid. These features suggest the origin of the second embryo from a 'fertilized' synergid.

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A NEW BASIC NUMBER IN *CLITORIA* LINN.

THE genus *Clitoria* L. of family Leguminosae is widespread in tropics and subtropics and constitutes forty species, of which three are reported from India[1]. The members of the genus range in habit from large shruby climbers like *C. ternatea* L. to tiny annual herbs like *C. biflora* Dalz. Some species such as *C. ternatea*, *C. rubiginosa* Pers., *C. mariana* L. show great morphological variation and in *C. ternatea* such polymorphism is perhaps due to simple Mendelian inheritance[12].

So far, most of the workers have investigated clitorias for chromosome numbers only[2-6,8,11]. Detailed karyotypic and meiotic studies are completely lacking. Earlier chromosome number reports indicate eight as the basic number in the genus[2-8,11]. In the present communication we report a new basic number in the genus and also, detailed male meiosis in *C. biflora*. The methods followed have been detailed earlier[9].

The various associations at metaphase I, observed in 25 PMCs, were 7_{II} (Figs. 1, 3–5), $6_{II} + 2_{I}$ (Fig. 2), $5_{II} + 4_{I}$ in 9, 9 and 7 cells respectively. The range, of bivalents and univalents per cell was 5–7 and 0–4, the mean being 6·08 and 1·84 respectively. On average 3·48 were ring and 2·60 were rod bivalents, their range being 0–7 and 0–6 respectively. Number of chiasmata per cell ranged from 6–14. Mean number was 9·6, out of which on average 8·8 are terminalized giving terminalization coefficient of 0·91. Five bivalents were comparatively of larger size and two smaller (Figs. 1, 3–5). In comparison, *C. ternatea* ($2n = 16$) has four large and four small bivalents[9]. At metaphase I, small bivalents were seen to disjunct earlier than others (Figs. 3–5). Significantly, in one