

In cleistogamic heads the relatively poorer seed setting is evident. The accentuated vivipary is noteworthy. Above all the remarkable activation under this abnormality of as many as 17 per cent. of the usually abortive pedicelled spikelets into antheriferous ones,⁴ throws interesting evidence on the probability of these pedicelled spikelets having once had perfect flowers.

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¹ *Jour. Indian Bot. Soc.*, 1936, 15, 139-142.

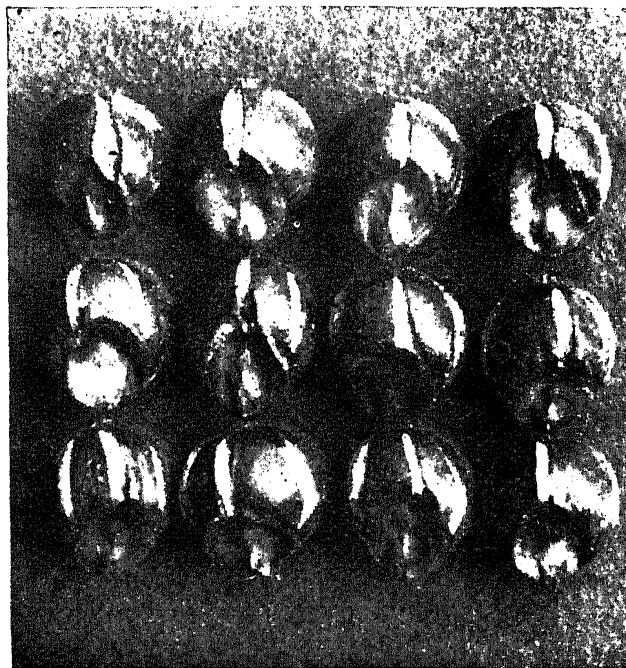
² *Curr. Sci.*, 1935, 3, 617.

³ *Indian Jour. Agr. Sci.*, 1932, 2, 266.

⁴ *Indian Jour. Agr. Sci.*, 1931, 1, 452.

Cracked Grains in Sorghum.

IN Gramineæ, the rôle of the pericarp in the protection of the endosperm and the embryo is obvious. Any disturbance to this pericarp is deleterious to the seed. In Maize, Zapparoli¹ records the occurrence and inheritance of broken grains. In the grain sorghum which develops its naked grains outside the glumes, the importance of a sound and whole pericarp is obvious. At the Millets Breeding Station, Coimbatore, cracked grains in sorghum have been met with in half a dozen African races. They occurred in *Sorghum caffrorum*, Beauv., *S. caudatum*, Stapf., *S. rotundulum*, Stapf., and *S. guineense*, Stapf. In two races the cracking occurred in practically every grain of the earhead and in the others was found to be anything from 20 per cent. upward. Seasonal variations affected the degrees of expression. The cracked grains show best in the dough stage. Cracking commences with a longitudinal slit in the pericarp which deepens into a regular cleft with the rapid development of the grain, exposing the markedly noticeable white starch in the cleft. In purple pigmented varieties, these rents in the pericarp stimulate the usual run of pigment which gets deposited at the edges of the cleft and colours up the cracked areas. Cracking commences in the grains at the top of the panicle and covers the whole of it, in about a week's time. The cracks are very noticeable in round plumpy grains. They may be one, two, or three in number (see photo). They are disposed



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towards the embryo side of the grain and run roughly along the watermark lines clearly observable in some varieties. Cracking has so far been noted only in chalky grains² with a comparatively soft endosperm. In the flattish grains of *S. guineense* capped as they are with a partly corneous endosperm, the cracking is very irregular and erratic in disposition. In every one of these races, the markedly bold grain (big relatively to the grain size usually associated with the respective varieties), was a noticeable feature. In the earheads in which there were both cracked and uncracked grains, the average weight of cracked grains was about 6 to 7 per cent. more than the uncracked ones. Selections taken for cracking have bred true. The behaviour of this character in inheritance in crosses with normal grains is under study.

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¹ *Jour. Herd.*, 1925, 16, 259-262.

² *Indian Jour. Agr. Sci.*, 1934, 4, 96-99.

Chromosome Numbers in Cymbopogon Species (continued).

IN a previous communication,¹ the chromosome numbers of five species were recorded. The numbers of the remaining South Indian