

the form of a rod. And in the first spermatocyte division this X-chromosome exhibits a



FIG. 1.
Ducetia japonica.



FIG. 2.
Elimæa securigera.



FIG. 3.
A species of *Phaneropterinx*.



FIG. 4.
Mecopola elongata.



FIG. 5.
Sathrophyllia sp.



FIG. 6.
Conocephalus sp.



FIG. 7.
Hexacentrus mundus.

All are from spermatogonial metaphases, $\times 1500$.

x: X-chromosome.

conspicuous precession by running towards the pole of its side ahead of other autosomes in course of separation. This seems to be a remarkable characteristic of the chromosomes of the Locustidæ in comparison to those of the Acrididæ, as in the latter group this behaviour of the X-chromosome of primary spermatocytes in division is not so marked.

In other respects too the Locustid chromosome complements show a marked contrast to those of the Acrididæ. The former group displays a wide range of variety in the constitution of its chromosomal garniture even among the members of the same sub-family, while in the Acrididæ the chromosomal complements do not deviate much and are more or less uniform in the various sub-families.

A full account of these observations will be published elsewhere.

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A Note on Gametogenesis in a Few Members of Sterculiaceae.

LITERATURE on the members of *Sterculiaceae* is very scanty, but for the works of Cheesman (1927), Kuijper (1914), and Heyn (1930), on *Theobroma Cacao*, and Gioelli (1932) on some European species like *Brachychiton acerifolium*. The following is a short account on the gametogenesis of a few members of the family, namely, *Pterospermum reticulatum* W. and A., *P. heyneanum* Wall, *P. acerifolium* Willd., *Sterculia acerifolia* A. Cunn., and *Helicteres isora* L. The detailed paper will be published elsewhere.

The ovules have two integuments in all, and in *Helicteres isora* the nucellus is exposed due to the incomplete development of the two integuments (Fig. 1).

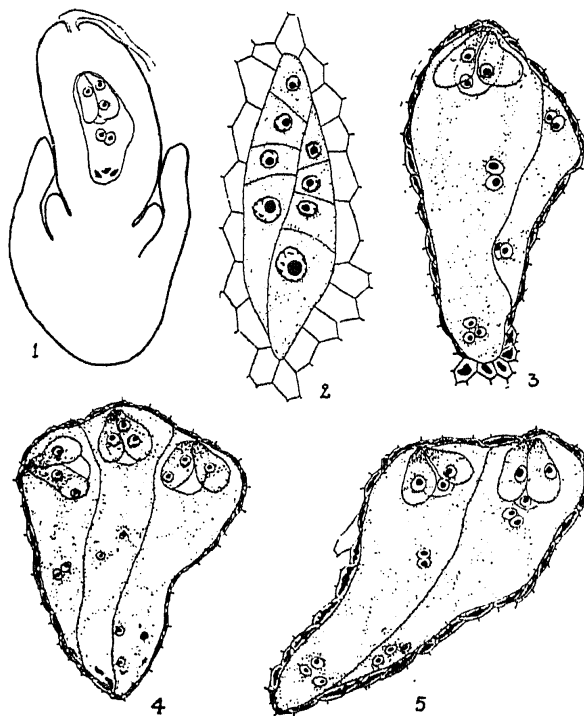


FIG. 1.—Ovule of *Helicteres isora* at the time of fertilization. $\times 266.7$.

FIG. 2.—Double tetrads of megaspores in *Pterospermum acerifolium*. $\times 600$.

FIG. 3.—Double embryo-sacs in same. $\times 256.7$.

FIG. 4.—Triple embryo-sacs in same. $\times 186.7$.

FIG. 5.—Double embryo sacs in same. $\times 266.7$.

(Original magnifications are indicated; reduced in reproduction to approximately one-third.)

The primary archesporium is hypodermal in origin and consists of a single cell in *Sterculia acerifolia* and *Helicteres isora*, and a

number of cells in the species of *Pterospermum*. A number of parietal layers are formed and the megaspore-mother cells become deeply situated in the nucellus. Only one megaspore-mother cell is functional in all except in *P. acerifolium*, where two or three develop further. The formation of a linear tetrad has been observed in all. In *P. acerifolium*, due to the activity of two or three megaspore-mother cells, more than one tetrad is formed (Fig. 2).

The usual course of development follows and the normal eight-nucleate embryo-sac is formed. Gioelli (1932) working on some members of Sterculiaceæ, reports the occurrence of six-nucleate embryo-sacs, but such a case has not been found in any of the plants studied now. In *Pterospermum acerifolium* the multiple tetrads develop into double and triple embryo-sacs (Figs. 3, 4 & 5). The occurrence of double and triple embryo-sacs is reported for the first time in the family.

Meiosis in the microspore mother cells of *Sterculia acerifolia* and *Pterospermum reticulatum* has been studied and the haploid chromosome number in both is nineteen.

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December 3, 1938.

Cheesman, E. E., "Fertilization and embryogeny in *Theobroma Cacao*," *Ann. Bot.*, 1927, **41**, No. 161.

Gioelli, F., *Contributo Alla Conoscenza Del Gametofito Femmineo E del Polline Nella Famiglia Delle Sterculiaceæ*, 1932.

Heyn, A. N. J., "Die Befruchtung bei *Theobroma Cacao*," *Proc. Akad. Wet. Amsterdam*, 1930, **33**, 533-41.

Kuijper, J., "Die Entwicklung des Weiblichen Geschlechtsapparates bei *Theobroma Cacao*" (*Rec. trav. Bot. Neerl.*, 1914, **11**, 37-43).

Albinism in Mustards.

MUSTARD work has been in progress for the last six years, and there are 132 strains isolated from different species of cultivated

Brassicæ—*Brassica juncea* H.F. and *Brassica campestris* L., *Brassica Napus* I., *Brassica nigra* Koch, *Brassica rugosa* Prain. A few albinatic plants appeared this year for the first time. It was interesting to find that these were confined to one strain of the lines of *Brassica Napus*. Cotyledons in these plants are normal and green while the subsequent leaves are completely albinatic and much reduced in size. The plants on the whole are very delicate. If they survive and are able to give some seed it will be interesting to study the inheritance of this character in their offsprings.

T. S. SARNIS.

Cawnpore,
November 19, 1938.

Gynura crepidioides Bth. in China and Hainan.

THE record of this vigorously spreading weed from the mainland of Asia,¹ has been recently extended by Bor².

Among a collection of duplicates recently received at Buitenzorg, I found specimens of *Gynura crepidioides* Bth. which represent as far as I know—the first appearance in China and Hainan, both collected in 1935. In the preliminary identifications it was mistaken—as is often the case in herbaria—for *Erechthites hieracifolia* Rafin.

The localities are the following:

China. Hunan Prov.: Ma-Ling-Tun, Sinning Hsien, Oct. 16th, 1935, C. S. F. Y. V. Li No. 618, herb 2-3 feet tall, also shaded streamside, 600 m. alt.

Hainan. Po-ting, April 1935, F. C. Ho 71591, herb on roadside flowers red.

C. G. G. J. VAN STEENIS.

The Herbarium, Botanic
Gardens,
Buitenzorg, Java,
November 15, 1938.

¹ *Curr. Sci.*, 1938, **7**, 21.

² *Ibid.*, 1938, **7**, 116.