season, no trace of the plant could be seen above ground. The tubers, called in the Telugu language "Potha Jougu Nimatayalu", are eaten by local people.

The authors thank late Dr. K. Subramanyam, former Director of the Botanical Survey of India, for critically going through the manuscript, Rev. Fr. K. M. Mathew for Latin diagnosis and the Director, Royal Botanic Gardens, Kew, for comments on the specimen. One of the authors (T. M. R.) is grateful to the University Grants Commission for a Teacher Fellowship.

August 8, 1980.

STRUCTURE AND ONTOGENY OF STOMATA ON THE PERICARP OF *ANETHUM GRAVEOLENS* LINN.

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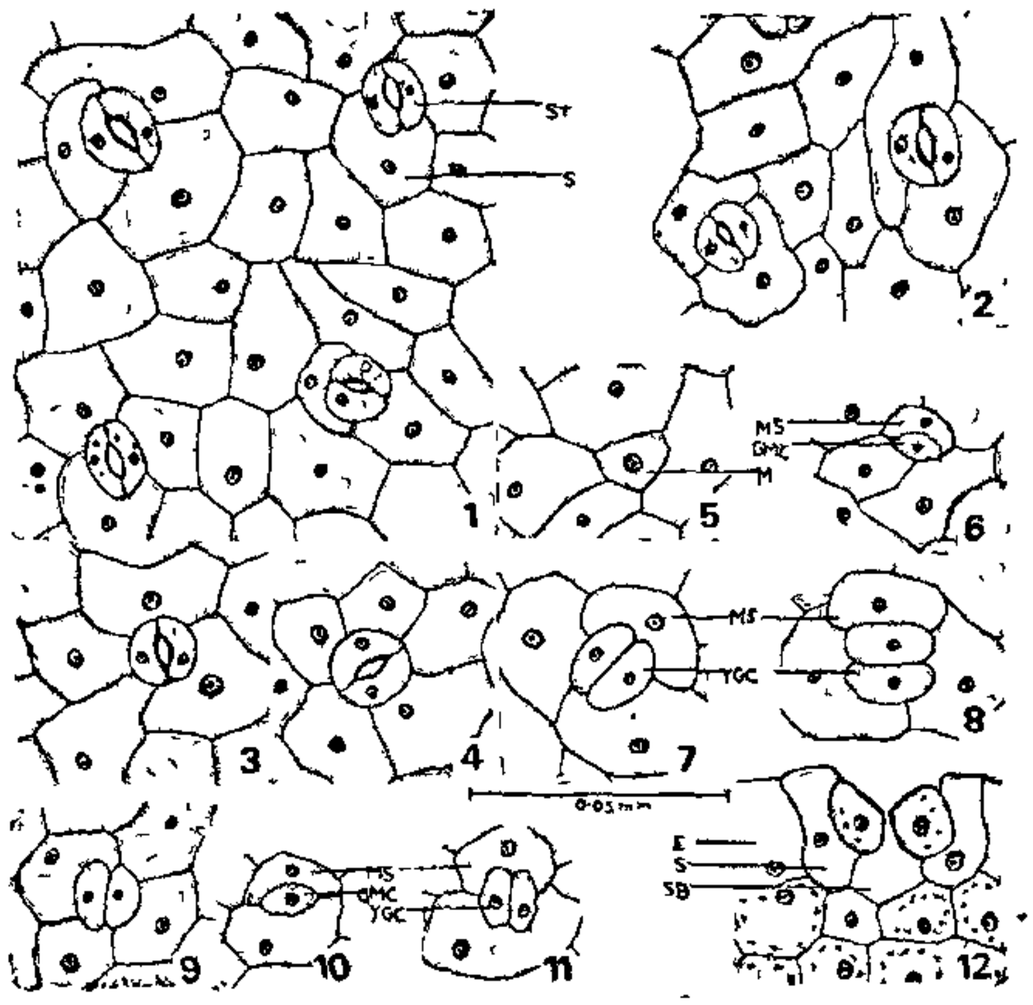
WHILE literature regarding stomata on vegetative parts in Umbelliferae[3] is available, information regarding the stomatal studies on floral parts[2] is meagre. The present paper deals with the structure and development of stomata on the pericarp of *Anethum graveolens* Linn.

Study of peel mounts of pericarp has revealed three types of stomata: Aperigenous, Anisomesoperigenous and Diamesoperigenous[1] (Figs. 1–4). The epidermal cells are polygonal or rectangular elongated in various directions (Fig. 1). Stomata are oval and elliptical in shape with average size $18{\cdot}75 \times 14{\cdot}87\,\mu$. The stomata are located at level with the outer epidermis having sub-stomatal cavities (Fig. 12). The meristemoids lie amongst the epidermal cells with dense cytoplasm and conspicuous nuclei (Fig. 5).

In Aperigenous type, the meristemoid cell cuts off no subsidiary cell but metamorphoses directly into a guard mother cell. The latter undergoes a vertical division giving rise to two guard cells (Fig. 9). The stomata thus formed are surrounded by 4 to 5 epidermal cells (Figs. 3–4).

In Anisomesoperigenous type, the meristemoid cell divides by a curved wall resulting in a smaller triangular and a larger rectangular cell (Fig. 6). The larger rectangular cell metamorphoses into a subsidiary cell which is, thus, mesogenous in origin. The other two subsidiary cells are contributed by the epidermis and are, therefore, perigenous. Central cell (g.m.c.) undergoes division by a straight wall resulting in a pair of young guard cells. The division of the g.m.c. may be at right angles to the mesogene, parallel to it (Figs. 7, 8) or in between the two, thus resulting in different orientation of the guard cells (Fig. 1). Eventually the young guard cells assume the characteristic crescentic shape.



FIGS. 1–12. Figs. 1–4. Anisomesoperigenous, Diamesoperigenous and Aperigenous stomata. Figs. 5–8. Stages in development of Anisomesoperigenous stomata. Fig. 9. Young guard cells in Aperigenous stomata. Figs. 10–11. Development of Diamesoperigenous stomata. Fig. 12. A stoma with substomatal cavity (in T.S. of pericarp). (S—Subsidiary cell; M—Meristemoid; E—Epidermal cell; ST—Stomata; SB—Substomatal cavity; MS—Mesogene; GMS—Guard mother cell; YGS—Young guard cell).

In the case of Diamesoperigenous stomates, the meristemoid divides by a curved wall into two cells, the smaller one behaving as g.m.c. and the larger forming the first subsidiary cell (Fig. 10). The second subsidiary cell is perigenous in origin (Figs. 10–11). The g.m.c., enlarges and forms two young guard cells by a single vertical division (Fig. 11).

The stomatal index and stomatal frequency are 10·5% and 56·8% per mm² and the percentage of Aperigenous, Anisomesoperigenous and Diamesoperigenous stomates is 55·5, 00 00, 12·6 respectively.

The authors are thankful to Prof. R. S. Mehrotra for laboratory facilities and to M/s. B. B. Arora and P. Nath for help in this investigation.

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A NEW RACE OF *XANTHOMONAS MALVACEARUM* IN INDIA

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EIGHTEEN races of *Xanthomonas malvacearum* (E. F. Smith) Dows. have been identified (Hunter *et al.*[1]; Verma and Singh[5]; Hussain and Brinkerhoff[2]). Out of them 15 races, *viz.*, 1–8, 10, 11, 13–16 and 17 have been reported from India (Srinivasan and Taneja[4]; Verma and Singh[6]; Singh *et al*[3]). This note deals with the distribution of races in Maharashtra and Tamil Nadu during 1975–76 and a new race, hitherto unreported.

A number of isolates of this pathogen was obtained from diseased cotton leaves collected from different cotton growing areas in Maharashtra and Tamil Nadu during 1975–76 at C.I.C.R. Regional Station, Coimbatore (Tamil Nadu). The isolates were screened for the presence of races on a set of differentials developed by Hunter *et al.*[1]. The isolates from Maharashtra belonged to races 10 and 13, while those from Tamil Nadu were identified as 7, 10, 13, 14, 16 and a new one. The new race was isolated from *Gossypium hirsutum* varieties, namely, *AV 2249* and *MCU 5*, and *G. hirsutum* × *G. barbadense* hybrids namely, CBS-156 and Varalaxmi. This was pathogenic to six differentials, *viz.*, Acala 44, Stoneville 20, 20–3, 1–10B, Mebane B–1 and Gregg, but non-pathogenic to Stoneville 2 B–S9 and 101–102B. This reaction of differentials is not exhibited against any of the eighteen races described so far, hence this is a new race. Verma and Singh[6] revised the system of Hunter *et al.*[1] for naming the races. They proposed the possibility of 32 races based on reactions of five differentials, namely, Stoneville 20, Stoneville 2B–S9, 20–3, 1–10 B, and Mebane B–1, leaving Acala 44, a universal suscept and *101–102B*, a *resistant differential*. If this revised system is followed, the races observed in Maharashtra will be 1 and 32 and in Tamil Nadu 1, 28, 29, 30 and 32. The new race will be 31. This race was equally pathogenic when inoculated artificially to cultivars like Lakshmi, MCU 5 and Sujata.

The author thanks Dr. K. V. Srinivasan, the then Project Co-ordinator, for his keen interest and encouragement during the investigation.

September 8, 1980.

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ON THE OCCURRENCE OF ICHNOGENUS *ICHNYSPICA* LINCK FROM UPPER JURASSIC JAISALMER SERIES, RAJASTHAN

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GUPTA *et al.*[1] have reported occurrence of *Nereites*, as a fossil Polychaeta (Annelida) from the Jaisalmer Series of Upper Jurassic rocks of Rajasthan. Since the name *Nereites* Macleay is preoccupied for an ichnogenus described as a meandering, grazing trail, their choice of this name for body fossil of a Polychaete worm is erroneous. What Gupta *et al.* have described as a body fossil is in fact a repichnial trail belonging to ichnogenus *Ichnyspica* Linck as given by Haentzschel[2,3].

Ichnogenus *Ichnyspica*: Linck 1949

Ichnyspica guptai ichno sp. nov. (Fig. 1)

Material: One specimen, *Holotype* No. M.A.C.S. G 1382 (Photograph). Z,S.I. No. I.V.P. 342

Dimensions: Width of trail 1 cm. Markings per cm 7.

Repichrial trail preserved as positive epirelief having straight, sharp projections on both the sides of a median rib, resembling the teeth of a comb. These projections are distorted and unevenly spaced where the turn is executed; otherwise they are opposing each other and well separated. The ends of projections are directed in the direction of propagation of the animal. What Gupta *et al.* have imagined to be tentacles are the drag marks of posterior end or the tail portion of the animal.