

is not discussed in recent articles on incompatibility^{1,2}. The following examples which I have found recorded may serve to focus attention on this matter.

Cross- and self-incompatibility were found in *Euphorbia cyparissias* by Muenscher³, and it was noted by East⁴ that "this experiment is the first to establish that physiological incompatibility may exist in a monoecious species". Clapper⁵ showed that the Japanese chestnut (*Castanea crinita*) and the Chinese chestnut (*C. mollissima*) only rarely set fruit after self-pollination. From a review of pollination experiments with *Hevea braziliensis* (Euphorbiaceae)⁶ it appears that self- and cross-incompatibility occur, and that there may be reciprocal differences in seed-setting. Whether this is an example of sporophytic control of incompatibility remains to be seen.

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¹ Bateman, A. J., *Heredity*, **6**, 285 (1952).

² Lewis, D., "Adv. in Genet.", **6**, 235 (1954).

³ Muenscher, W. C., *Rhodora*, **38**, 161 (1936).

⁴ East, E. M., *Proc. Amer. Phil. Soc.*, **82**, 449 (1940).

⁵ Clapper, R. B., *J. Heredity*, **45**, 107 (1954).

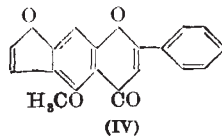
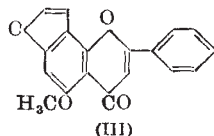
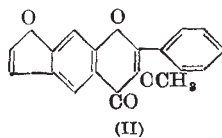
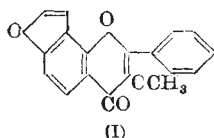
⁶ Hunter, H., and Leake, H. M., "Recent Adv. in Agr. Pl. Breeding" (1933).

New Flavones from *Pongamia pinnata* (L.) Merr.: Identification of Compound D

Two new furano-flavones (compounds C and D) were reported by Row¹ from the root bark of *Pongamia pinnata* (L.) Merr., besides karanjin (I) and its methylene dioxy derivative, named pongapin. From a study of the alkaline degradation and other reactions, they were regarded as isomeric with pongapin and karanjin respectively.

In an effort to identify these compounds, the simple linear isomer of karanjin, 3-methoxy-furano-7:6:2':3'-flavone (II), was synthesized by Pavanaram and Row²; but it was not identical with compound D.

A reconsideration of the reactions of the compounds C and D revealed that they could be furano-flavones unsubstituted in the third position, since no ketone could be isolated from the products of alkaline hydrolysis of these compounds. To test this possibility, 5-methoxy-furano-7:8:2':3'-flavone (III) was obtained synthetically from the O-benzoyl derivative of 4-hydroxy-5-acetyl-6-methoxy coumarone³ by an application of Baker-Venkataraman migration (potassium hydroxide-pyridine method). The furano-flavone (III) (melting point 180°; thin, fragile, narrow needles, from ethyl alcohol) depressed the melting point of compound D (melting point 177-79°)



considerably (130-45°), thus establishing their non-identity.

The linear 5-methoxy-furano-7:6:2':3'-flavone (IV) was also prepared from the benzoate of visnaginone by the Baker-Venkataraman method (using potassium hydroxide-pyridine). The furano-flavone (IV) (melting point 181-82°; broad rectangular prisms with a tendency to taper at one end) did not depress the melting point of compound D and was absolutely identical in its reactions.

The synthesis of 3":4"-methylene dioxy derivative of the furano-flavone (III) was accomplished similarly. Its melting point was 263-64° and was different from compound C (melting point 232-33°). The synthesis of the isomeric 3":4"-methylene dioxy derivative of the other furano-flavone (IV) is in progress.

With the identification of compound D, a new group of furano-flavones unsubstituted in the third position comes to light. Unlike karanjin (I), it belongs to the linear type. In this connexion, it is interesting to note that the only other naturally occurring furano-flavone so far reported is the unsubstituted furano-7:8:2':3'-flavone (lanceolatin B), isolated from the roots of *Tephrosia lanceolata* Grab⁴.

We are indebted to Prof. Alexander Schönberg, of the University of Cairo, for a gift of visnagin used in this investigation. We learn from him that the furano-flavone (IV) was also recently synthesized in his laboratories from visnaginone. Full details of the present investigation will be published elsewhere.

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¹ Row, *Aust. J. Sci. Res.*, **5A**, 754 (1952).

² Pavanaram and Row, *J. Sci. Indust. Res. (India)*, **14B**, 157 (1955).

³ Phillips, Robertson and Whalley, *J. Chem. Soc.*, 4953 (1952).

⁴ Rangaswami and Sastry, *Curr. Sci.*, **24**, 13 (1955).

Two Indo-Pacific Fishes, *Dasyatis uarnak* and *Upeneus moluccensis*, in the Eastern Mediterranean

DURING 1954, several specimens of *Dasyatis uarnak* (Forskål) were observed along the Mediterranean coast of Israel. They were caught by trawlers in depths of 15-40 fathoms. The captured fishes were usually big, with the disk often more than 100 cm. in diameter. One comparatively small specimen is preserved in the collection of the Sea Fisheries Research Station, Haifa. Its dimensions are: length of disk 440 mm., width of disk 470 mm., length of tail 1,215 mm.

The fish has not been recorded hitherto from the Mediterranean. It seems to be a common fish in the Indo-Pacific, and has been reported from the Suez Canal¹, through which the species has apparently passed to the Levant.

Upeneus moluccensis (Bleeker) is now common enough in the eastern Mediterranean to be of economic importance and has been mentioned several times under a wrong identification as *Mulloidichthys auriflamma* (Forskål)². A careful examination of an extensive material from the Israeli coast and from Mersin, Turkey, revealed that all the fish belong to a single species, *U. moluccensis*. I have been able to