

One morning in the month of July, about 5 o'clock, in the Botanic Garden of Venice, two plants of *Mimosa pudica*, kept in a conservatory (perfectly expanded), presented an aspect of luxuriant vegetation. Another, exposed in the open air, had its leaves entirely closed and the stems bent. A fourth, placed in another part of the garden, was half-closed; and another, in a separate place, was quite closed. On the day preceding, the gardener had, at my orders, shut up the last in a dark place three hours before sunrise.

I took care also to verify the influence exerted upon the *Mimosa* by the artificial light of a lamp, and I found the growth was from 3 to 5 centimetres.—*La Lumière*, July 17, 1858.

General Examination of the Group Euphorbiaceæ.

By M. H. BAILLON.

The great number of facts met with in the study of about fifteen hundred species, cultivated at Paris or preserved in the collections, have compelled the author to divide into two series his 'Étude générale du groupe des Euphorbiacées.' In the first part he combines the matters relating to the search for types, the natural affinities, classification, descriptions of genera, and organography, based as far as possible upon organogenic studies.

It is only in the adult state that the existence of compound leaves can be regarded as exceptional in this order. Very frequently they are compound at their first appearance; but the terminal lobe only becomes developed, the lateral being abortive. They then become lamellæ of variable form, and very often true glands, which occupy the base of the blade. It is simply by such an arrest of development that a *Cremophyllum* differs from a *Dalechampia*; but the two genera cannot be otherwise separated. There are also often lobes of abortive leaves, destitute of parenchyma, and reduced to their nervures terminating in a glandular thickening, which have been regarded as branched hairs.

The structure of the male flower presents every possible modification, from the diplostemonous type of the andrœcium to the indefinite arrangement of a variable number of naked stamens. Consequently, the only fixed characters that can be resorted to in the Euphorbiaceæ lie in the female flower, and, in this, in the gynœcium.

Hence the extent of the researches relating to this organ. Its development has been followed in all the plants cultivated in the Paris gardens and hot-houses, from the appearance of the carpellary leaves upon a common, central, isolated axis, up to the time when the ovules developed higher up on the same axis have acquired their double integuments.

It is the outer integument that forms the caruncle of the Euphorbiaceæ, by a thickening of the exostome, and this in a constant manner. Its origin can no longer be attributed to the cellular cap which arises from the placenta and advances to meet the ovule. There is always a period when these two structures are completely independent, and their perfect contact takes place at the time when

the flower expands. If this cap is not at that time in perfect contact with the nucleus by means of a prolongation which it inserts into the exostome, the nucleus itself acquires a sudden and excessive development, and sends out to the cap a long slender process, varying much in form in different genera.

As the direction and structure of the ovule and seed alone constitute fixed characters in the Euphorbiaceæ, the limitation of this order must be modified, both by the addition of new genera hitherto regarded as distinct, and by the exclusion of several others. The species of *Buxus*, and with them *Tricera*, *Sarcococca*, and *Pachysandra*, are in the latter category. The development of their placentation is centripetal; their ovules are anatropous in the direction opposite to those of the Euphorbiaceæ, with the raphe exterior, the micropyle superior and interior. The fleshy production which crowns their seeds is not a micropylar caruncle, but proceeds from the funiculus. On the same grounds, the Stylocereæ, separated from the Euphorbiaceæ, form a small separate group near the Buxææ.

The Antidesmeæ, on the contrary, and the Scepacææ reduced to the genus *Aporosa*, cannot be separated from the Euphorbiaceæ, for they all have the gynæcium of this order at a certain epoch. Their fruit is unilocular and monospermous only through consecutive abortions. The number of loculi, of the seeds, the direction and structure of the latter, present no difference at the outset.

The study of the organogeny has demonstrated the same fact in *Callitriche*, the ovary of which is bilocular and the cells bi-ovulate at first. This arrangement is merely disguised, subsequently, by the appearance of a false septum comparable to that of *Linum*, which produces an ovary with four half-cells, each with one seed.

The order Euphorbiaceæ, as sketched by the author, is therefore enriched by the Scepacææ, Antidesmeæ, and Callitrichacææ, while it loses the Buxacææ proper.—*Comptes Rendus*, July 26, 1858.

On 'Hautlé,' or Animal Bread, of the Mexicans.

By M. GUÉRIN-MÉNEVILLE.

In the 'Bulletin de la Société Impériale Zoologique d'Acclimatation,' M. Guérin-Ménéville has published a very interesting paper on a sort of bread which the Mexicans call 'Hautlé,' and which is made of the eggs of three species of Hemipterous insects belonging to the group of Water-bugs.

According to M. Craveri, by whom some of the Mexican bread, and of the insects yielding it, were brought to Europe, these insects and their eggs are very common in the fresh waters of the lagunes of Mexico. The natives cultivate in the lagune of Chalco a sort of *Carex* called 'Toulé,' on which the insects readily deposit their eggs. Numerous bundles of these plants are made, which are taken to a lagune (the Tezcuco), where they float in great numbers in the water. The insects soon come and deposit their eggs on the plants; and in



Baillon, H. 1858. "General examination of the group Euphorbiaceæ." *The Annals and magazine of natural history; zoology, botany, and geology* 2, 312–313.

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