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pellary leaves, but that it is a phragma formed by the placenta, the folding of carpels, inwards, outwards, or transversely, &c. It is a most correct term as used by botanists. We see a phragma in *Cruciferae*, in *Datura Stramonium*, where the placenta elongates and forms two additional loculaments in the fruit; in *Linum* and *Astragalus*, where the back of the carpel folds in; in *Oxytropis*, where the ventral part of the carpel turns inwards; in *Cathartocarpus Fistula*, where the inner lining of the legume forms transverse divisions; and in the *Acacias*, *Raphanus*, *Ornithopus*, &c., where the whole walls of the carpel fold in transversely. Some explain this last occurrence by supposing that the carpel is composed of a compound pinnate leaf, and that the phragmata or spurious dissepiments indicate the divisions between each pair of leaflets. Dr Nevins does not follow those who consider axile placentation as general, for he says—"Whilst the seeds are generally developed from the edges of the carpellary leaves, they are produced in crucifers from the edges of the stem itself." But what will Dr Nevin say about some legumes, such as *Carmichaelia*, where, as Endlicher says, "A replum remains after the valves have fallen off?" and Lindley, "The valves separate from the sutures, which remain entire, like the replum of *Cruciferae*?" In *Schrankia*, also, there are four valves, of which the two lateral ones may very well represent the outer edges of the cruciferous replum. Dr Nevins ought to apply his view to such cases as these also, and thus adopt fully the axile view of placentation.

III. *On the Palm Trees of Old Calabar.* Extracted from the MS. Journals of the late Mr William Grant Mylne. By Mr SADLER.

The *Ata ukot*, wine palm or common mimbo, is apparently an undescribed species of *Raphia*. It yields a very pleasant beverage, which is much appreciated by all classes of people who have the fortune, or rather misfortune, to touch the western shores of Africa. It has been cultivated by the natives for ages for its watery fountain. The trees

are generally seven years old before they are tapped. At this age they are from 30 to 40 feet in height. The natives ascend the trees and pierce a hole to the centre of the stem immediately below the growing point; a small pipe is then inserted into the hole and led into a vessel which is fixed to the tree. In this way it is drained from time to time, which causes the tree to die, and it is then cut down to make room for others. The mimbo thrives best in damp situations, and such localities are generally chosen for its cultivation; at the same time, I have seen avenues of mimbo trees on high sandy places leading to towns. The people employed to tap the mimbo are Ibibio slaves, who are purchased by kings and chiefs at public slave marts. The Calabarians are not a climbing race. The Ibibios are in practice superior in the art of climbing. The liquid, when taken from the tree, has somewhat the colour of cream, and has a pleasant sweetish taste. This only lasts a few hours, when it becomes tartish. The natives have certain barks which they bruise and mix with the liquid, which becomes intoxicating. It is sold in the public markets; and in the Ibibio country there are mimbo public-houses, similar to our beer-shops. It is used by the missionaries' wives for making bread, being subject to fermentation; the bread made with it is excellent. The young leaves of the plant are split up into threads and made into bags and cloths.

The *Iya*, or bamboo palm, is another species of the same genus (*Raphia*). Its petioles are used for house-building at Calabar and all along the coast. These petioles are generally from 20 to 30 feet long. The fruit is used as an article of food, which is not the case with the last-named species. Many of the trees are from 50 to 60 feet high. In the Uwet country the natives do not cultivate the wine palm, consequently they tap the bamboo; but the wine is strong and harsh and unpleasant, and is very intoxicating. I once saw the King of Uwet as tipsy from its effects as any man under the influence of brandy. The inland kings and chiefs indulge themselves to excess in drinking bamboo wine, and consequently are always in a state of stupidity. The tree is tapped in the same way as the mimbo, at the base of the growing point. In the Qua country, at the foot

of the Qua mountains, as well as in Calabar, they use the wine of the oil palm (*Elais guineensis*), which is inferior to that of the bamboo, being much harsher and stronger. In this case the trees are tapped about two feet from the ground, and also at the top, in the same way as has already been described. I never saw any of the natives intoxicated by this beverage, but I have no doubt that they can supply ingredients to it for this purpose.

Another species is the *Afia okuk ukot*, or the white rod mimbo. The petioles of this palm are white, while that of the *Ata ukot* are red. Its wine is equal in quality to that of the *Ata ukot*. The scales of the fruit are, however, much thicker than those of that species and of the bamboo.

The *Idim ibom* is perhaps the most important palm of all at Calabar. *Idim* signifies water, and *ibom* great. It occurs on the banks of the main branch of the Calabar river, but confined to the district of Ikorofiong. The quantity of wine which this plant produces is astonishing. An ordinary tree will yield a puncheon of a most delicious beverage, which is deservedly a great favourite with the people. In colour it resembles cream, which is sold in large quantities at the mimbo public-houses. When the tree is once tapped it invariably bleeds itself to death. This is not the case with common mimbo; it can be tapped from time to time till the fluid is exhausted, and then it dies. Such is also the case with the *Idim ibom*, the *Iya* or bamboo, the *Afia okuk ukot*, and the oil palm.

The last of this class of palms, belonging to *Raphia*, met with at Calabar, is the *Iya asiakha nditau*, which produces shoots, or sucklings. The base of the fruit is surrounded by numerous scales similar to those produced at the base of bulbiferous plants; these are called by the natives *nditau*. This palm is not common. Another nearly allied species is plentiful upon the south coast; it sends up numerous shoots, similar to the plantain, covering a great space of ground.

On the south coast a species of date is abundant on the sea shore, but not inland. The fruit is small, and of an oval shape. In taste the pulp is similar to that of the date of commerce. Its foliage also resembles that of the com-

mon date, and might easily be mistaken for it were it not for the fruit. A fan palm is plentiful at Citia Camma, but I have not seen the plant, never having been so far south. Captain Kirkwood has two plants raised from seed collected at Citia Camma, where he states it is abundant.

IV. *Notice of two Mosses new to Science*—*Hypnum rupestre*, *Buchanan White's MS.*; and *Hypnum Breadalbanense*, *Buchanan White's MS.* By F. BUCHANAN WHITE, M.D. (Plate III. figs. 2 and 3.)

Dr White gave descriptions and exhibited drawings of two species of *Hypnum*, which he had collected in 1865 on Ben Lawers, in Perthshire, and which had been ascertained to be as yet undescribed in any work. The one he proposed to call *Hypnum rupestre*, and the other *H. Breadalbanense*.

Hypnum rupestre, Buchanan White's MS.: stem procumbent, covered with very short villi (paraphyllia), irregularly pinnate; leaves falcato-secund, lanceolate acuminate from a wide base; obscurely 2-nerved, margin plane, and scarcely denticulate.

Hab. Ben Lawers, August 1865.—Fruit unknown.*

REFERENCE TO PLATE III. FIG. 2.

st. Stem showing short villi. *f. l.* Front of leaf. *b. l.* Back of leaf. *ba. l.* Base of leaf. *a. l.* Apex of leaf. *s. l.* Sections of leaf.

Hypnum Breadalbanense, Buchanan White's MS.: stem procumbent or suberect, covered with villi (paraphyllia), vaguely pinnate; leaves secund ovate lanceolate, concave; nerve strong, single, reaching about half-way; margin of the base slightly recurved.

Hab. Breadalbane mountains, Ben Lawers, August 1865.—Fruit not yet found.

A slender species, with pale yellowish green leaves. Margin of the leaf subdenticulate; cells at the narrowed base quadrate.

* *H. rupestre*, now appears to me to be rather too closely related to *H. callichroum*; but as Dr Schimper considers that it has claims to distinctness, I think it is as well to leave it as it is.