NOTES ON AUSTRALIAN ECONOMIC BOTANY.—No. I.

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I propose, under this heading, to give, from time to time, brief notes on the products and uses of some of our native plants. They are selected from a large quantity of supplementary information which I have gathered together since the publication of my "Useful Native Plants of Australia" over a year ago.

FOODS.

Drimys aromatica, *F.v.M.*, and D. dipetala, *F.v.M.* N.O. Magnoliaceæ.

Both these trees are known locally as "Pepper-trees." The dried fruits of *D. aromatica* are black, rather shrivelled, subglobular, with short stalks, and much resembling cubebs in appearance, except for the minute brown scars (varying from one to six or more). They break down readily under the teeth, forming a gritty powder, but in a very short time they burn the tongue and roof of the mouth severely. They are very acrid, with a flavour like allspice, only much more intense. The leaves and bark also have a hot, biting, cinnamon-like taste. The bark, leaves, and fruit are, as is well-known, sometimes used by country people as a substitute for pepper. The barks of these two species are being tested for their medicinal properties.

D. aromatica finds its most northern extension on the Sugar Loaf Mountain (Braidwood), and perhaps a trifle more north in the Clyde Mountains,—though it has not yet been seen north of the Sugar Loaf Mountain. Near our southern boundary, and especially in the Gippsland ranges, it attains its greatest height and diameter in the jungle, where it is often found as a small

handsome tree about 20-25 feet high and from 4 to 6 inches in diameter. On the slopes of the Snowy Mountains it sometimes forms dense jungles which are there called "Pepper Scrub." It ascends to an altitude of more than 6,000 feet, but is then always shrubby.

D. dipetala is a small gully-tree which bears a considerable quantity of fruit of a plum colour up to nearly black when fully ripe. They are in shape like a roly-poly, and I have measured them up to $1\frac{1}{4}$ inch full by $\frac{3}{4}$ inch in diameter. They are succulent, and may be eaten with impunity, tasting like a nearly insipid apple, but the few small black seeds which they contain, which are from pear- to kidney-shaped, are exceedingly pungent, tasting like *D. aromatica* fruits if chewed. I have not heard of the blacks eating them, but it is not possible they could have ignored them.

The present species is not so well-known as *D. aromatica*, nor has any use been made of either bark, leaves, or fruit. The ripe fruit, when bruised and steeped in hot water, makes a beautiful dark red to purple liquid, a teaspoonful of which added to a glass of water makes a pleasant refreshing drink. This suggests whether the ripe fruit might not be used in colouring and flavouring wines and other beverages, giving them a beautiful red colour, and adding a spicy and aromatic taste.

The Cambewarra Mountain (Shoalhaven district) was until now the most southern locality recorded for this species, but our collector has found it in the deep wild gullies east of the Sugar Loaf Mountain (Braidwood) growing quite luxuriantly,—usually a straggling shrub or small tree up to 12 or 15 feet in height and somewhat more than 2 inches in diameter. Here the plants in some instances were almost bending with the weight of fruit, now beautifully ripe and exceptionally large this wet season. The bark of this species, as well as that of *D. aromatica*, does not strip, but has to be sliced off with a knife. Where the long straggling stems or branches touch the ground the young branchlets form roots, so that the branch can be cut away from the parent as an independent plant.

The elevation of the locality (now its most southern range) is from 1,500 to 2,000 feet, which is the same as its elevation on the Cambewarra Mountain. It is perhaps worthy of remark that the two species, both the northern and southern, should meet and find their respective limits pretty well in a line east and west, and that *D. aromatica* should not descend to the level of *D. dipetala.*

A parallel case occurring in the same region is furnished by the two species of *Telopea.* Neither *D. dipetala* nor *Telopea speciosissima* crosses over from the sandstone to the granite, nor do *T. oreades* and *D. aromatica* cross from the granite into the sandstone. And it is also remarkable that the two southern species, as they proceed further and further south, attain the size and their greatest perfection in the same locality, just across the boundary in the Gippsland ranges.

Marsdenia flavescens, *A. Cunn.*, and M. viridiflora, *R.Br.* N.O. Asclepiadeæ.

It was the Rev. Dr. Woolls who first drew attention to the fact that the tuberous roots of these species are edible. They are called "Native Potatoes," and the blacks were accustomed to eat them after some preparation. They are probably referred to in the following account of Captain Hunter's Expedition up the Hawkesbury, July 1788.

"On the banks here we also found yams and other roots, and had evident marks of the natives frequenting these parts in search of them for food. They have no doubt some method of preparing these roots before they can eat them, for we found one kind which some of the company had seen the natives dig up, and with which being pleased, as it had much the appearance of horse-radish, and had a sweetish taste, and having swallowed a small quantity, it occasioned violent spasms, cramps in the bowels, and sickness of the stomach; it might probably be the caçada root." *(Historical Journal,* p. 153.)

SOLANUM NIGRUM, *Linn.* N.O. Solanaceæ.

This common weed is stated in the Flora to have been probably introduced in some of the Australian localities, with cultivation. Baron Mueller includes it in his second Census, so that this is the latest authoritative pronouncement of its being an Australian native. "The berries are said by several Australian collectors to be frequently eaten." (B.Fl.) My own children have been detected eating them on several occasions, but never, apparently, with evil effects. In the Richmond River district they are known as "Native Currants," and Mr. Hagman informs me that the fruits are used for making jam in the locality. The leaves were cooked as a pot-herb by the camp followers of Dr. Aitchison in Afghanistan. (*Trans. Linn. Soc. Lond.* [2]. *Bot.* iii., Pt. i., 9 & 91).

FODDER PLANTS.

ACACIA IMPLEXA, *Benth.* N.O. Leguminosæ.

In Southern New South Wales, near Delegate, cattle have been known to eat the leaves of this tree, stripping off all within reach, although grass in the paddocks was abundant.

ACACIA LONGIFOLIA, *Willd.* "Golden Wattle."

It has also been observed, in the same district, that this is a wattle of which horses and cattle eat the young shoots, even when grass is by no means scarce.

APOPHYLLUM ANOMALUM, *F.v.M.* N.O. Capparideæ.

This is still another of our numerous "Native Currants." It is, however, usually known as "Warrior bush," a corruption of the aboriginal name "Wareah."

It is a useful fodder-plant for stock; on the Lachlan it is a bush growing from 6ft. to 10ft. high.

BALOGHIA LUCIDA, *Endl.* N.O. Euphorbiaceæ. "Brush Bloodwood."

Although belonging to such a suspicious natural order, this tree has at Mt. Dromedary (Bombala district), the reputation of being

greedily eaten by cattle. Mr. Joseph Latimer states that during the last great drought he cut down the limbs of this tree for his cattle, and they would always eat the leaves of it before anything else that was given to them. This tree is found as far south as Bembooka Mountain, but there are only a few trees of it there, whereas at Mt. Dromedary, a few miles further north, it is plentiful, and there attains a diameter of about 15 inches.

Bertya Cunninghamii, *Planch.*

Called "Gooma," in Western New South Wales, according to information kindly furnished to me by Miss M. A. Clements of Palesthan.

This is another Euphorbiaceous plant. It is a fodder shrub which has no chance of making head-way where sheep feed, and in spite of the poisonous natural order to which it belongs, there is no record of its having proved deleterious to animals. It has a pleasant, bitter flavour.

Boronia microphylla, *Sieb.* N.O. Rutaceæ.

A specimen of this plant was sent to me from Katoomba, labelled "Mountain Hopbush," with the information that stock are fond of it.

DYE.

Australia is so poorly endowed with vegetable dye-stuffs that I draw attention to the tinctorial properties of the yellow powder which surrounds the seeds of various species of *Lomatia*, particularly *L. ilicifolia*, R.Br. The matter has been brought under my notice by Mr. Bäuerlen, the painstaking collector for the New South Wales Technological Museum, and is being subjected to careful examination. The powder colours water, and stains the fingers, particularly if washed with soap, since alkalies darken it; the substance being, in this respect, similar in its behaviour to turmeric. The substance can never have more than a purely scientific interest.

PERFUMES AND ESSENTIAL OILS.

CERATOPETALUM APETALUM, *D. Don.* N.O. Saxifrageæ.

The bark smells very strongly of Coumarin, and a small slab of this is therefore useful for scenting linen presses, &c. I announced the isolation of Coumarin two years ago, and Messrs. Schimmel and Co., of Leipzig, the celebrated essential oil firm, have confirmed my observation. (*Bericht*, April 1890, p. 51).

EUCALYPTUS MACULATA, *Hook.*, var. CITRIODORA. N.O. Myrtaceæ.

The "Citron-scented Gum."

I wish to draw attention to the enterprise of Mr. A. Jefferies Timbury, a pharmaceutical chemist of Gladstone, Queensland, who is pluckily entering into the preparation of this oil. Besides the ordinary commercial oil, he makes a refined or rectified article of great elegance. While it has the well-known odour of Citronella oil, there is at the back of it a delicious turpentinous odour; and my feeling in regard to this Australian product is this (apart from its use as a simple perfume for soap, &c.), that in cases in which the use of Eucalyptus oil is desirable, people may now have the option of a sweet-smelling article, though the perfume of ordinary Eucalyptus oil (*amygdalina, &c.*), is by no means disagreeable. It is small credit to the scientific men of Australia that the first complete chemical investigation of this Australian oil (*citriodora*) has been made at Leipzig in Germany.

SUBSTANCES REPUTED MEDICINAL.

DORYPHORA SASSAFRAS, *Endl.* N.O. Monimiaceæ.

The bark of this "New South Wales Sassafras" is used as a tonic medicine. Dr. T. L. Bancroft, of Brisbane, obligingly informs me that he has tried it on frogs, and found it to be inert. The same observer also writes that the bitter bark of *Geijera salicifolia*, Schott, N.O. Rutaceæ, a "Wilga," is physiologically inert, or practically so. He makes a similar observation in regard to the *Goodenias*, and also in regard to *Gratiola pedunculata*, R.Br.

and *G. peruviana*, Linn., plants belonging to the Scrophularineæ, which are often used in domestic medicine.

LOBELIA PURPURASCENS, *R.Br.* N.O. Campanulaceæ.

This plant was sent to me (July 1889), from Port Macquarie, as "a newly discovered antidote to snakebite." Mr. Hamlet (Government Analyst, Sydney), and I have both found the oily alkaloid Lobeline in it. Dr. T. L. Bancroft kindly informs me that this species "contains the same active properties as *L. inflata*, and might be used as a substitute for it." The chemical experiments are thus confirmed by physiological ones. The North American *L. inflata* is collected after the seed-capsules have become inflated. It is emetic and expectorant, and its chief use is in asthma.

PETALOSTIGMA QUADRILOCULARE, *F.v.M.* N.O. Euphorbiaceæ.

"Quinine tree, &c."

Dr. T. L. Bancroft informs me that the bark of this tree is physiologically inert, or practically so. He makes a similar observation in regard to the *Pittosporums*, and in regard to the well-known bitter bark of *Tabernæmontana orientalis*, R.Br., belonging to the Apocyneæ.