

rate of 77·9%. Three other pieces weighing collectively four hundred weight, and many smaller samples were obtained in 1891, the total amount of this mineral raised, between January and September of the year referred to, totalling six tons seven hundred weight one quarter and eighteen pounds, and which gave a silver return of 142·554 ounces troy.

A specimen of dyscrasite from Broken Hill, examined by me, was found to have a Sp. G. of 9·70; lustre bright metallic; colour silver-white on newly broken parts, but tarnishing to yellowish-white on exposure. The containing gangue was calcite in which the mineral occurred in beautiful arborescent forms. B. B. on charcoal gives coating of oxide of antimony and a remaining globule of silver. Dyscrasite is said also to occur in beautifully perfect crystals, in calcite in the mine before referred to.

NOTE.—A most interesting paper on the occurrence of dyscrasite at Broken Hill, was read by Geo. Smith Esq., of Broken Hill, at the inauguration of the Australian Institute of Mining Engineers at Adelaide in 1893, and the statistical information quoted in these notes has been gathered from the paper referred to.

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## PRELIMINARY NOTES ON THE PHARMACOLOGY OF *CARISSA OVATA*, VAR. *STOLONIFERA*, *Bail.*

By THOS. L. BANCROFT, M.B. *Edin.*

(Communicated by J. H. MAIDEN, F.L.S., F.C.S.)

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[Read before the Royal Society of N. S. Wales, June 6, 1894.]

WHILST in search of bitter plants (with the object of ascertaining if any possessed pharmacological activity) in a scrub near Dalby, Queensland, September 1893, a *Carissa* was noticed to come under this category.



The plant proved to be sufficiently distinctive from the normal or coast form of *Carissa ovata*, R. Br., to warrant the Colonial Botanist, Mr. F. M. Bailey, in describing it as a variety, viz., *stolonifera*.\* The normal form of *Carissa ovata* is a common plant about Brisbane; observations and experiment show that it very rarely develops the bitter poison of the western variety, and if so, only in small amount.

An alcoholic extract of the bark was made, and solutions in water of this when injected into frogs rapidly killed them. The muscles were pale and paralysed, and the heart stopped in systole. Applied to the exposed hearts of frogs, pithed or under the influence of Curara, it slowed and finally brought them to a standstill in systole. It was then seen that the substance resembled closely in its action *Strophanthin* and *Ouabin*, glucosides from allied genera of the Apocynaceæ.

A solution of the extract in water gave the following reactions: copious precipitates with chloride of gold, acetate of lead and sulphate of copper. Slight precipitates with acetic acid, dilute sulphuric acid, tannic acid, mercuric chloride and ferric chloride (black). No precipitate with ammonia, carbonate of soda, or iodide of potassio-mercury.

Referring to numerous works on Botany and Materia Medica, I found the following mention of the medicinal use of a *Carissa*: Under the heading *Carissa* in the "Treasury of Botany" there is the following:—"Some of the species have medicinal properties, being as bitter as Gentian. The bark of *C. xylopicron*, a native of Mauritius and Bourbon, is used by the Creoles in diseases of the urinary organs, while the wood, there called Bois amère, has a like reputation. Small cups are made of it, in which water or wine is allowed to stand till it acquires the flavour of the wood, as in the bitter cups now so frequently used in this country."—  
[M.T.M.]

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\* Botany Bulletin, No. 9.



In a work by Louis Bouton entitled "Medicinal Plants of Mauritius," is the following account of the medicinal use of *Carissa xylopicron*:—"The Bois amère is according to Pellicot, a physician, who long resided in the Mauritius, a sovereign remedy in gonorrhœa. Cossigny observes that it might be useful in other diseases, such as ulceration of the bladder, uterus, and in the whites or fluor albus. Possesses, according to Du Petit Thouars, a bitter flavour, which it communicates to the water when infused and is considered at Bourbon as very tonic. The bark is frequently used by the creoles in diseases of the urinary organs, nephritic calculi."

I wish here to suggest the advisability of investigations in Europe being made of this Mauritius species, for if the active principle of the genus be considered of value therapeutically, as appears to me very probable, it is to such a plant that recourse would have to be made as the subject of this paper is a small plant and not plentiful. The genus *Carissa* being so closely allied to *Acokanthera*, led me to suspect that the active principle might be the same, viz.: the glucoside *Ouabin*, but as far as I have been able to ascertain without the assistance of chemists, it would appear that it is quite distinct. In the Pharmaceutical Journal, May 13, 1893, there is a reprint of Professor Fraser's paper on the "Way Nyika Arrow-poison," which is derived from an *Acokanthera*; the active principle is there described as a glucoside crystallising from a watery solution in quadrangular plates and in needle-shaped crystals from alcohol; it is stated also that a saturated solution of the substance in water is tasteless.

Now the active principle under observation separates out in minute globular specks extremely like white blood corpuscles, not only from a watery, but from alcoholic solution, and moreover is very bitter. It neither agreed with the appearances and reactions of *Strophanthin* as given by Professor Fraser.\*

It is a curious circumstance that so many of the Apocynaceæ are poisonous, and of these so many are cardiac poisons of the

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\* On the Chemistry of *Strophanthin*—British Medical Journal, July 23, 1887.



*Digitalis* type ; in addition to the genera already mentioned viz.: *Strophanthus*, *Acokanthera* and *Carissa*, there are at least two others, viz., *Tanginia* and *Nerium*.

To prepare the active principle, the following method proved the best in my hands, although there is no doubt a certain amount of decomposition of the glucoside from the use of sulphuretted hydrogen. Boil the bark in water, decant the decoction, add some lead acetate, boil for a minute and allow to stand for several hours, filter, remove excess of lead with sulphuretted hydrogen, evaporate at a gentle heat over a water bath to a honey consistence. The material is thus left as a sticky yellow mass, which upon standing some days becomes a magma of peculiar crystals. It can be purified further by solution in absolute alcohol. Exposed to the air for a few days in a thin layer it becomes green in colour ; it is deliquescent, does not polarise light and reduces an alkaline solution of cupric oxide. Fungi of various kinds readily grow in it. It is very soluble in water, less so in aqueous alcohol, slightly soluble in absolute alcohol, and insoluble in ether and chloroform. It gives no coloration with strong sulphuric acid, strikes a yellow colour with ammonia. Gives slight precipitates with auric chloride and tannic acid, none with mercuric chloride.

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## ON ALMANDINE GARNETS FROM THE HAWKESBURY SANDSTONE AT SYDNEY.

By HENRY G. SMITH, Technological Museum, Sydney.

[Read before the Royal Society of N. S. Wales, June 6, 1894.]

A short time back I had submitted to me for determination, some small reddish particles contained in a conglomerate taken from a quarry at Pyrmont. They were found to be garnets, and the presence of gem-stones in so unlikely a locality as the neighbour-



Bancroft, Thomas L. 1894. "Preliminary notes on the pharmacology of *Carissa ovata*, var. *stolonifera*, Bail." *Journal and proceedings of the Royal Society of New South Wales* 28, 44–47. <https://doi.org/10.5962/p.359178>.

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