

# ON THE OCCURRENCE OF CYANOPHORIC GLUCOSIDES IN THE FLOWERS OF SOME PROTEACEAE.

By F. SMITH, B.Sc., F.I.C., AND C. T. WHITE, F.L.S.

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In a previous paper<sup>1</sup> we have already drawn attention to the occurrence of hydrocyanic acid in the flowers of two Proteaceae *Grevillea Banksii* and *Lomatia silaifolia*, from the foliage of which it is absent. As fresh material has become available we have further investigated various Proteaceae, especially with a view to determining the distribution of cyanophoric glucosides in the floral members, and the results to be here cited appear to us worthy of notice as being phytochemically new.

The following are summarised accounts of the reactions with the floral parts of various Proteaceae examined since the publication of our last paper.

<i>Grevillea Banksii</i> R. Br.	HCN.
Foliage, floral rhachis, pedicels, anthers, hypogynous glands	Negative reactions.
Petals, ovary, style and stigma, capsules, seed.	Strong positive reactions.
Dry capsules (from which the seed had been shed)	Positive reaction.

The reaction of the green capsules was especially strong, an amygdalous odour being pronounced when the material was cut up.



<i>Grevillea robusta</i> A. Cunn., Common Silky Oak of Southern Queensland and New South Wales.	HCN.
Foliage, pedicels, petals, anthers, hypogynous glands.	Negative reactions.
Pistil, capsules, seed.	Strong positive reactions.
Dry capsules (from which the seed had been shed).	Negative reaction.
<i>Hakea saligna</i> Knight.	HCN.
Foliage, capsule, seed	Negative reactions.
Flowers	Positive reaction.
<i>Lomatia silaifolia</i> R.Br.	HCN
(a) Foliage leaves, pedicels, petals, hypogynous glands, capsules, seed.	Negative reactions.
Anthers, pistil.	Strong positive reactions.
(b) Leaves, panicle branches, pedicels, petals, ovary, hypogynous glands.	Negative reactions.
Anthers, style and stigma	Strong positive reactions.
(c) Leaves, petals, ovary, hypogynous glands.	Negative reactions.
Anthers, stigma	Strong positive reactions.
Stigma (with the surface cleaned of pollen).	Positive reaction.

*L. silaifolia* is of special interest owing to the reported properties of the flowers of killing flies.<sup>1 2 3</sup> The flowering plant has also been suspected as the cause of mortality in calves.<sup>4</sup>



The material for tests (a) and (b) was collected at Sunnybank in May and November, 1919, respectively. As some doubt existed as to whether the positive reaction with the pistil was due to the pollen adhering to it, a further test c) was carried out with the stigmatic surface cleaned of pollen with the above results. This last material was collected in the Glass House Mountains district in February, 1920.

The anthers of *Lomatia* flowers are strongly cyanogenetic. There is still some doubt in regard to the stigma owing to the difficulty of completely freeing the stigmatic surface of pollen grains, many of which are in a state of germination. The possibility of *Lomatia* flowers proving dangerous to bees owing to the cyanophoric properties of the pollen seems to us worthy of consideration by entomologists and apiarists.

*Lomatia silaifolia* R.Br. var. *induta* F. v. M.

This variety yielded in all its parts reactions identical with those recorded for the normal form.

Both foliage and flowers of the following species have been tested with negative results:—

*Conospermum taxifolium* Sm.; *Strangea linearis* Meissn.; *Grevillea Hilliana* F.v.M.; *Grevillea pinnatifida* Bail; *Stenocarpus sinuatus* Endl.; *Banksia integrifolia* Linn. f.; *Buckinghamia celsissima* F.v.M.

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