ON THE OCCURRENCE OF ABORTIVE STYLES IN *BUCKINGHAMIA CELSISSIMA* F.v.M.

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(Text-figures 1-2).

In 1918, Longman and White described an interesting mutant in the Proteaceous tree *Buckinghamia celsissima* F.v.M., which is a monotypic species endemic to tropical Australia, but on account of its handsome appearance it has been introduced into gardens of Southern Queensland. The flowers normally possess a semi-annular hypogynous gland situated at the base of the stipes, but in the mutant of Longman and White the gland was divided into a number of segments and two accessory styliform structures accompanied the pistil. This condition was observed to be constant in two consecutive generations, viz. (*a*) in a tree at Wooloowin, and (*b*) in a parent plant at Enoggera. Both of these localities are in the Brisbane district within a few miles of each other.

With the object of investigating the relationships of the hypogynous gland and the accessory styliform processes to one another, material was obtained from the Botanical Museum, Brisbane, off spikes of flowers collected in 1918 from the tree at Wooloowin. The specimens had been preserved in formalin for over six months, with the result that they had become discoloured and hardened, so safranin was used for staining. The paraffin method was used for embedding and on mounting it was found that the cytological detail was poor, this doubtless being

due to the fact that the material was not immediately preserved in the formalin after collecting, for the specimens were not originally gathered for sectioning.

With reference to the hypogynous gland, Longman and White (1918, p. 162), state that "in practically every flower the hypogynous gland is divided into four or five segments (usually five) and two of these are much elongated into supplementary style-like processes," and later (p. 164), "There is no evidence of a graduated change from the tiny segments of the hypogynous gland, and it is therefore thought that this marked modification is better expressed as a mutation than as a variation." After a careful examination of our sections, we find that we cannot support the opinion that these style-like processes have any connection with the hypogynous gland, as it appears to us most conclusively on morphological and histological grounds, that they are neither hypogynous gland-segments nor a mutation from them. On the contrary, their resemblance to the style is very pronounced in regard to the following important features, viz. (*a*) general shape, (*b*) stigmoid extremity, and (*c*) microscopic structure. In Fig. 1. it will be noticed with reference to the histology of the stipes (which is similar to that of the style) and the style-like processes, that these organs are chiefly composed of lightly staining parenchyma (*par.*) surrounding a delicate central strand of vascular tissue (*v.b.*), and containing a few scattered deeply-stained cells (*c*). Contrasting and alternating with the stipes and the style-like processes are the segments of the hypogynous gland (*h*1, *h*2, *h*3), which stain deeply and consequently are conspicuous structures in section. We therefore conclude that the elongated organs referred to by Longman and White as segments of the hypogynous gland are really aborted styles and that their development has caused splitting of the hypogynous gland into distinct segments.

Early this year, one of us obtained typical flowers of *Buckinghamia celsissima* from the Brisbane Botanic Gardens, and sections for comparison were made. It will be observed that the hypogynous gland (Fig. 2, *h*) is entire and semi-annular in shape and that aborted styles are not present.

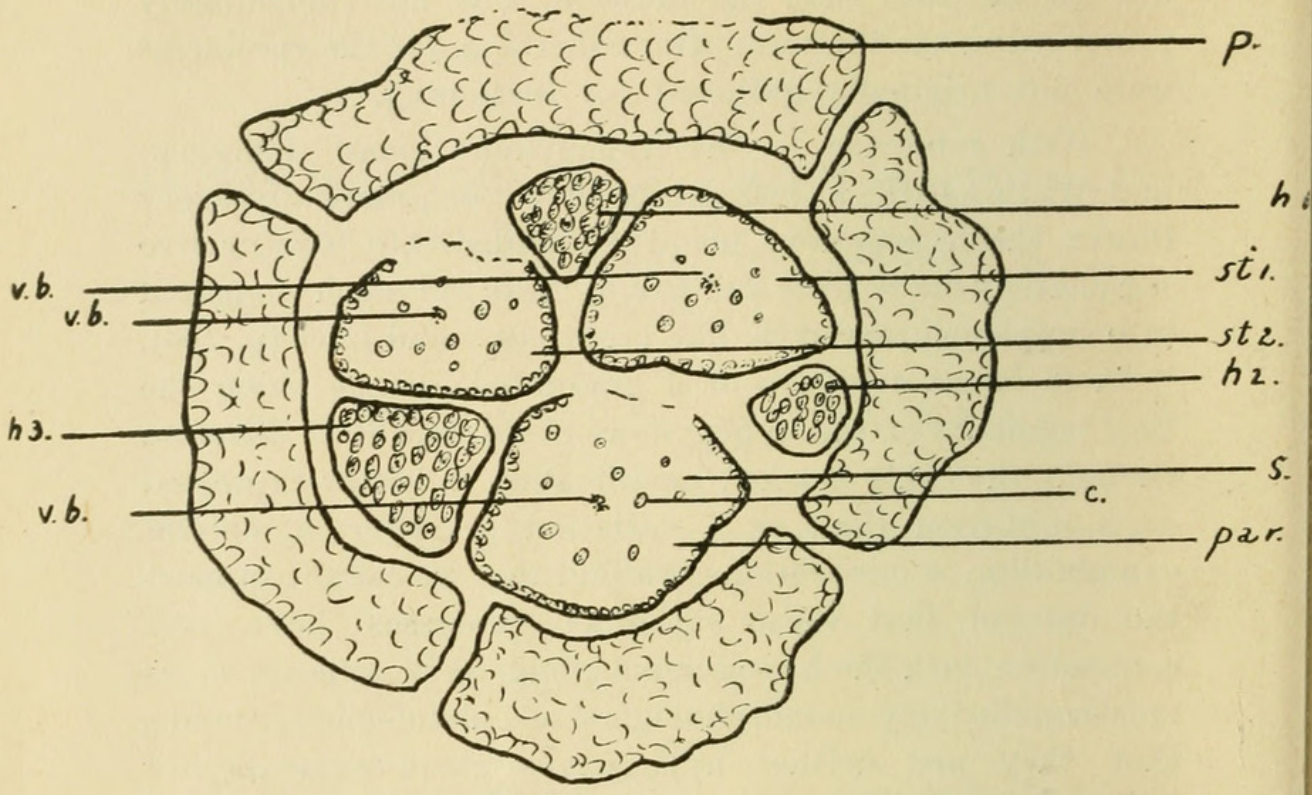

Fig 1.

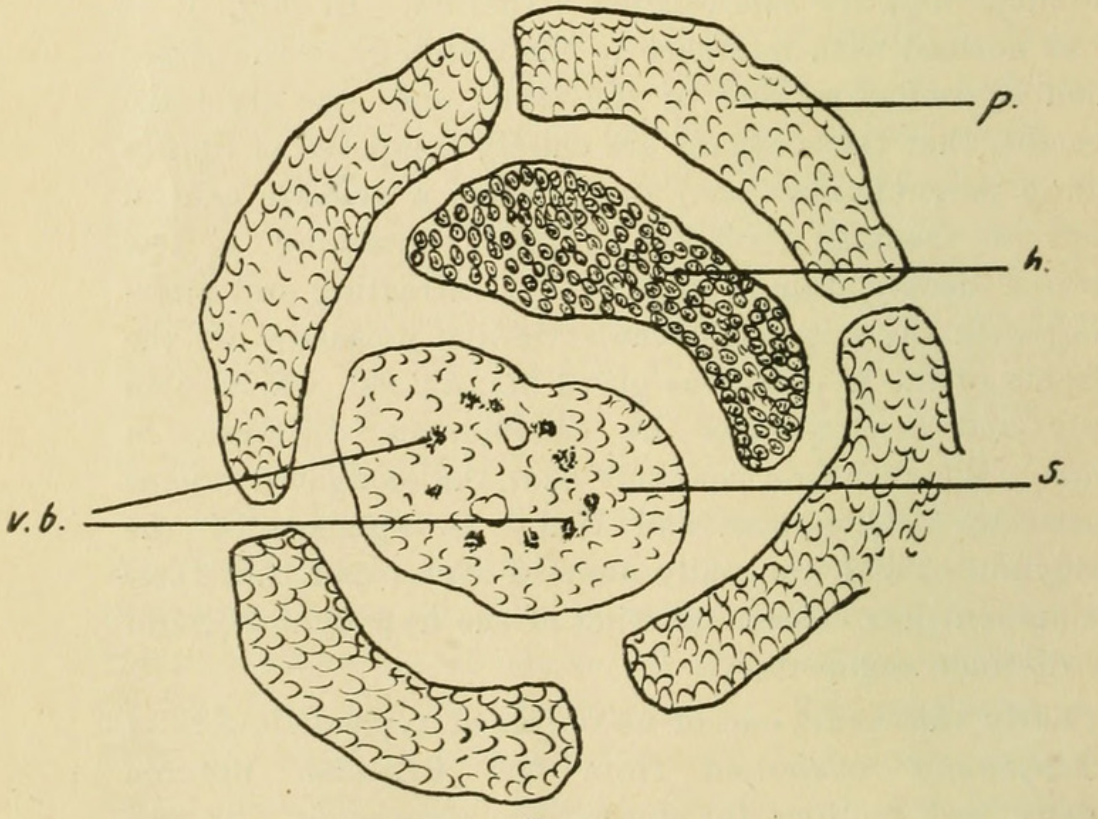

Fig 2.

0 1 2 3 4 5 mm.

Our thanks are due to Professor T. H. Johnston, who kindly allowed the section cutting to be performed in the laboratory of the Biology Dept., University of Queensland.

Bibliography.

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Explanation of Text-figures.

Transverse sections across flowers of *Buckinghamia celsissima* F.v.M.

Fig. 1.—Mutant of Longman and White; *c*, deeply stained cells in parenchyma of stipes and aborted styles; *h*1, *h*2, *h*3, segments of hypogynous gland; *p*, perianth segments; *par*, parenchyma in stipes; *s*, stipes; *st.* 1, *st.* 2, aborted styles; *v.b.*, vascular bundles.

Fig. 2.—Normal flower; lettering similar to above; *h*, undivided, semi-annular hypogynous gland.

ALTERATION OF GENERIC NAME.

Note by J. Douglas Ogilby.

In these Proceedings, Vol. xxi, p. 91, I proposed the name *Eurycaulus* for a genus of belonoid fishes. This, having been previously used in Coleoptera by Fairmaire, 1868, I now change to *Tropidocaulus*.