

Something new about our two wild gingers, *Hedychium flavescens* & *H. gardnerianum*

Rhys Gardner

It seems almost a provocation to say that the flowers of these two weedy menaces have some interesting (unusual and little-known) features, so I shall skip a general description (if hazy, see Healy & Edgar 1980) and go straight to the detail. What I write here relates more or less equally to each species – I have resisted examining others.

Anther

The flower's single anther, about a centimeter long, is folded longitudinally to clasp the upper part of the style in a deep cleft (Fig. 1). Down the front of the anther, each side of this styler cleft, there is a pair of pollen-bearing chambers (thecae). Each theca is composed as usual of two locules, separated from one another by an unusually substantial septum (Fig. 2).

In parallel with the thecae, but on the sides of the anther and sunken in them, are two broad (0.5 mm wide) bands of close-packed unicellular hairs (Figs. 2, 3). These stand in, and presumably secrete, a pale viscid substance, and after dehiscence a fair amount of pollen becomes stuck to them. The pollen grains are pale, round, smooth and large (50 μ diam.), and are not sticky.

Stigma

The stigma is shortly exerted from the top of the

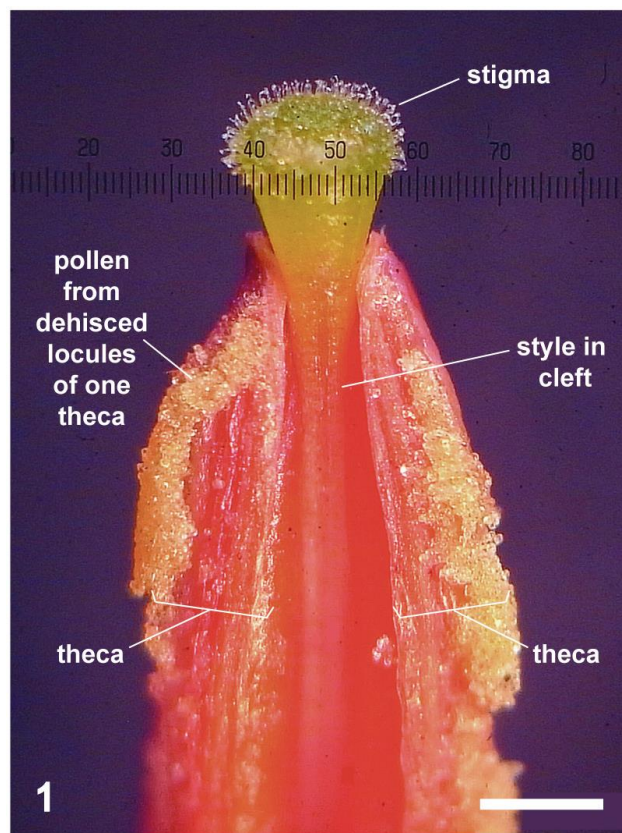
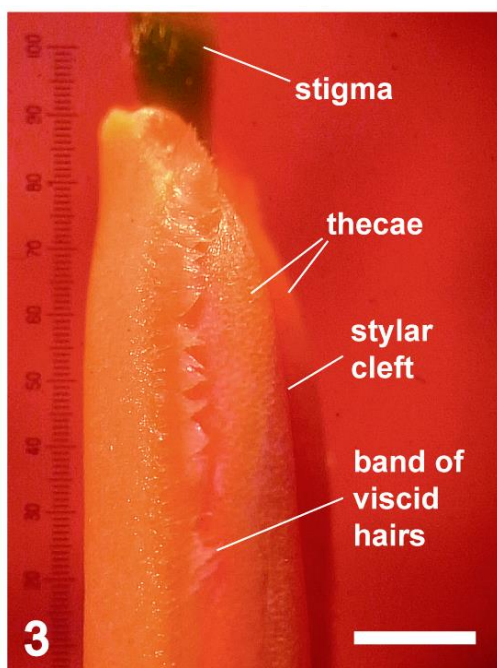
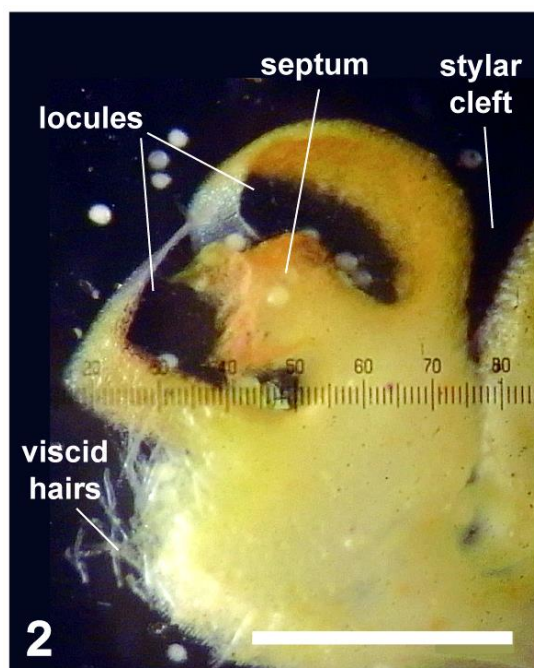


Fig. 1. *Hedychium gardnerianum*. Upper part of dehiscid anther, and stigma (1.5 mm diam.); front view. Scale bar = 1 mm.



Figs. 2–4: **2.** *Hedychium flavescens*. Anther (immature, 2 mm deep); transverse section showing a theca and its two locules. Scale bar = 1 mm. **3.** *Hedychium flavescens*. Upper part of undeveloped anther (2 mm wide); side view, showing compact band of viscid hairs. Scale bar = 1 mm. **4.** *Hedychium gardnerianum*. Stigma hair (0.2 mm long), thick-walled and coil-tipped. Photographs by the author.

anther. It is a green, hairy structure, subglobose but somewhat flattened above, and has an obscure front-facing central depression that leads down into the stylar canal. Its hairs are not simple, nor are they typical round-ended stigmatic papillae — they are quite long (c. 0.2 mm) and thick-walled, and their apex is bent, hooked, or even coiled (Figs. 1, 4). To the naked eye they have a fuzzy appearance.

Discussion

A mention of the anther's viscid hairs has been made by the great German floral biologist Stefan Vogel (1925–2015), in an essay accompanying the third

volume of an encyclopaedia of flowering plant taxonomy (Vogel 1998).

The above observations were made when I was trying, unsuccessfully, to draw the flowers; it is not always enough just to “draw what you see”.

It seems that nothing much is known about these plants' pollinators in their Indian homeland. Presumably these are large moths or butterflies, with tongues long enough to reach the nectar at the base of the corolla tube. Perhaps the unusual stigmatic hairs give greater adhesion to a globule of pollen-viscin brought in by pollinators.

References

- Healy, A.J.; Edgar, E.E. 1980: *Flora of New Zealand*. Vol. 3. Government Printer, Wellington.
- Vogel, S. 1998: Floral biology. Pp. 34–48 in K. Kubitzki K. (ed.), *The families and genera of vascular plants* III: Flowering plants/Monocotyledons (Liliana). Springer, Berlin. [All the volumes of this essential work (it includes keys to the genera) are at the University of Auckland library, but, like most of the science books here, have recently been taken from the shelves and placed offsite, “On Demand”. Who will demand their return?]

The flowers of *Lobelia pedunculata* R.Br. (Campanulaceae)

Rhys Gardner

Introduction

In October last year I came across a seemingly wild colony of *Lobelia pedunculata*, in a damp grassy place by a waterway in Mt Roskill (Fig. 1). An Australian species, this pretty little herb is widely promoted by nurseries as a groundcover, and is known to persist for years in Auckland's lawns and road verges, even without watering (Ewen Cameron pers. comm.). Herbarium records, nearly all from cultivated plants, indicate that it has been in our country for more than forty years.

There was no sign that my colony was making fruit, so I dug up a portion to grow at home, to see if there was anything unusual about its pollination mechanism (and by extension, that of its relatives, including the familiar *Lobelia angulata* of northern streamsides). It turns out there is, but one would not know so from the floristic or phylogenetic literature, nor even from the usually perceptive Moore & Irwin (1978). Some of the notable floral features of these plants (mainly *L. pedunculata*), are shown in Fig. 2; see Appendix for specimens examined.

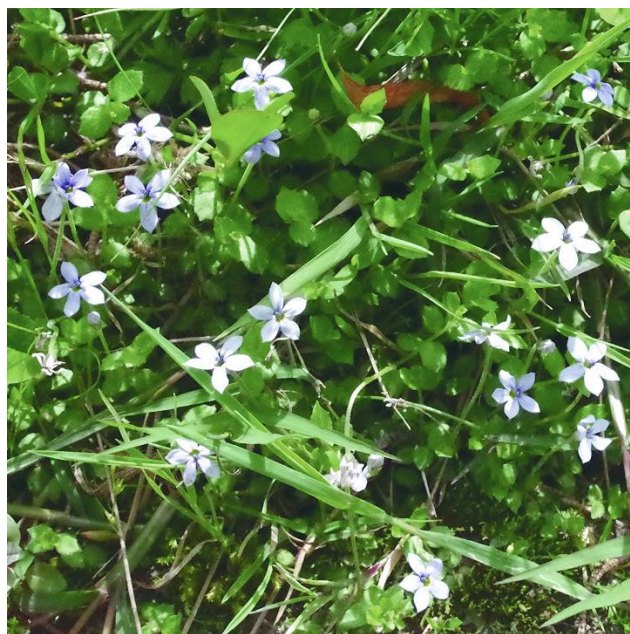


Fig. 1. *Lobelia pedunculata*. Wild colony (ROG 11453); corollas approx. 13 mm diam.; leaves to 1 cm diam. Photo ROG 20 Oct 2021. Voucher: ROG 11453. All photos by the author.