

Styleworts (*Levenhookia* spp.) are a small but beautiful group of pint-sized triggerplant (*Stylidium*) relatives found in the southern temperate and arid zones of Australia. Twelve species are known, all of which are annual herbs with delicate and ornate flowers best observed under magnification. The genus is aptly named after Antonie van Leeuwenhoek (1632–1723), a Dutch shopkeeper who made optical lenses and bespoke microscopes and made a raft of microscopic discoveries including protists and bacteria. Although largely self-taught, Leeuwenhoek had a curiosity befitting the most practiced scientist and studied almost anything that could be looked at through a lens, such as exploding gunpowder—a feat that almost cost him his sight!

Stylewort flowers are works of art. They have five corolla segments, one of which (the labellum) is hooded over the reproductive parts that are found at the tip of the floral column. The labellum is usually adorned with appendages or hairs and is also touch-sensitive, springing backwards rapidly or opening to expose the column, which may exhibit limited movement as a result. Cross-pollination is the primary goal for some species, with pollen being flung from the tip of the column onto insect visitors like a catapult, and the stigmatic lobes then developing in order to receive pollen from subsequent visitors. In contrast, some species appear designed for self-pollination, transferring pollen from the anthers to the stigmatic lobes while the column is still enclosed by the labellum. Other species hedge their bets, staggering development of their two stigmatic lobes so that self- or cross-pollination is possible. Bee-flies and small native bees and have been observed transferring pollen between flowers, although pollination studies are largely wanting.

Styleworts have recently been placed under the microscope as part of an Australia-wide taxonomic revision of the triggerplant family (*Stylidiaceae*). In addition to studying most species in the wild, more than 1700 stylewort specimens were examined and verified at herbaria across Australia, proving no job is too small!



Summer stylewort

Many misidentifications were corrected, helping to clarify the distribution and conservation status of each species. For example, we now know that the kwongan stylewort (*Levenhookia murfetii*) is not restricted to areas north of Perth but is widespread in south-western Australia, its distribution extending to the Salmon Gums area.

Historical herbarium records are also informing conservation efforts. Hairy stylewort (*Levenhookia dubia*) is common across southern mainland Australia but listed as extinct in Tasmania, with some uncertainty as to whether it was ever present in this State (the only specimen at the Tasmanian Herbarium has no location information associated with it and is therefore considered an unreliable record). However, a rummage through the collections at the National Herbarium of Victoria unearthed collections made in the mid- to late 1800s from Flinders Island and near Hobart, confirming its historic presence in Tasmania and providing clues that could lead to its rediscovery in the Apple Isle.

Herbarium-based studies also precipitated the discovery and description of the summer stylewort (*Levenhookia*

aestiva), which is endemic to the south-western corner of Western Australia. Specimens of this eye-catching new species were previously classified under Preiss's stylewort (*Levenhookia preissii*), but close examination of herbarium collections, photographs and illustrations established its distinctness. Although summer stylewort is relatively common, its taxonomic recognition has important conservation implications since Preiss's stylewort is now a relative rarity—only a handful of collections from the Swan Coastal Plain have been made in the past 70 years, either from small bushland fragments in Perth or from areas subject to mining.

The publication of a revised description of this species, together with identification guides to all species in the genus, is a critical first step in this process and will aid future survey efforts.

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Above The newly named summer stylewort has bright and intricate flowers.
Photo – Rob Davis