

**Table 2.** Herbarium records of *Solanum villosum* in New Zealand.

Voucher specimen	Collection location	Collection date	Collector	Notes
CHR 77084 CHR 77085 CHR 77086 CHR 77087	Wallaceville Research Station, Upper Hutt	23 April 1952	T.W. Rawson	Originally identified as <i>Solanum</i> sp.; yellow berries
CHR 89285	Lake Bryndwr, Christchurch	18 March 1955	R. Mason	Originally identified as <i>Solanum</i> sp.
AK 69342	Mt Albert Research Centre, Auckland	1 January 1959	C. Cambie	Ex Denmark (Jorgenson); n = 24. Grown for Chemistry Dept, Auckland University College; Summer 1959
CHR 152347	Seed collected from Gisborne district by A J McNeur	13 April 1964	A.J. Healy	Plants cultivated at Botany Division DSIR Lincoln. Originally recorded as <i>S.</i> <i>nigrum</i> var. <i>puniceum</i>
CHR 184015	Lake Bryndwr, Christchurch	2 April 1968	A.J. Healy	Originally recorded as <i>S.</i> <i>nigrum</i> var. <i>humile</i> ; yellowish berry
CHR 234549	Single pits Sockburn, Christchurch	22 April 1972	A.J. Healy	Originally recorded as <i>S.</i> <i>nigrum</i> ; yellowish berry
CHR 234730	Bare land between Riccarton Mall and Matipo Service Station	15 April 1974	A.J. Healy	Originally recorded as <i>S.</i> <i>nigrum</i> var. <i>humile</i> ; single plant eglandular
AK 253313	John F Kennedy Drive, Milson, Palmerston North	13 March 1981	unknown	Recorded as <i>S. nigrum</i> f. <i>humile</i>
CHR 400711	Seed collected from Riccarton, Christchurch by A J Healy	5 May 1983	W.R. Sykes	Plants cultivated at Botany Division, DSIR, Lincoln. Originally recorded as <i>S.</i> <i>nigrum</i> f. <i>humile</i> ; yellowish berry
CHR 400715	Seed collected from Riccarton, Christchurch by A J Healy	29 April 1983	W.R. Sykes	Plants cultivated at Botany Division, DSIR, Lincoln. Originally recorded as <i>S.</i> <i>nigrum</i> f. <i>humile</i> ; yellow berry

<b>Voucher specimen</b>	<b>Collection location</b>	<b>Collection date</b>	<b>Collector</b>	<b>Notes</b>
CHR 418787	Seed collected from Poverty Bay	April 1983	W.R. Sykes	Plants cultivated at Botany Division, DSIR, Lincoln. Orange-red berries; 2n = 48
CHR 468705	Duncan's Farm, Lincoln1	6 March 1991	R. Scott	Originally recorded as <i>S. nigrum</i> f. <i>humile</i> ; dull yellowish berry
CHR 506549	Near Gisborne airport	14 February 1994	J. Fletcher, H. Nott	Lacks glandular hairs
CHR 508237	Adjacent to Matawhero Sale Yards, Gisborne	1 March 1994	J. Fletcher	Red berries
CHR 508238	Manutuke, Saddlers Rd, near Gisborne	1 March 1994	J. Fletcher	Red berries
CHR 656851	Seed collected from Old Canterbury Sales Yards, Deans Ave Christchurch	June 1999	T. Conner	Plants grown at the Canterbury Agriculture and Science Centre, Lincoln. Red berries.
<b>Voucher specimen</b>	<b>Collection location</b>	<b>Collection date</b>	<b>Collector</b>	<b>Notes</b>
CHR 656852	Seed collected from corner of Main South Rd and Carmen Rd, Hornby, Christchurch	April 2007	T. Conner	Plants grown at the Canterbury Agriculture and Science Centre, Lincoln. Red berries.
CHR 656942	Seed collected from Makaraka Cemetery, Gisborne	February 2018	T. Conner	Plants grown from collected seed at the Canterbury Agriculture and Science Centre, Lincoln. Red berries.
CHR 656943	The Mews, Lincoln, Canterbury	March 2013	T. Conner	Growing as a weed in domestic garden. Red berries.
CHR 656944	The Mews, Lincoln, Canterbury	April 2017	T. Conner	Growing as a weed in domestic garden. Red berries.
CHR 656945	South Belt, Lincoln, Canterbury	March 2013	T. Conner	Growing as a weed in domestic garden. Red berries.

## *Carex kirkii* var. *elator* Kük. (Cyperaceae), a grass-like and little known sedge from the South Island

Kerry Ford

*Carex kirkii* var. *elator* is the lower altitude variety of *Carex kirkii*. It occupies oligotrophic wetlands and lake and stream edge habitats in NW Nelson, Marlborough, Canterbury, and Otago. The other variety *C. kirkii* var. *kirkii* is an alpine plant of herb and fellfield and is found in the mountains of Central Otago and a few localities in Canterbury (Middle Mt Peel, Coal Hill, and Mt Cheeseman). The former had not been seen in many years, not since the surveys of DSIR plant ecologist Tony Druce, when he last collected it from the Mt Somers area in Canterbury in 1987. Then in February 2021 Doc Ranger Graeme Ure spotted it at a site near Lake Heron in the Hakatere – Ashburton Lakes area while carrying out weed control. He sent it to the Allan Herbarium at Lincoln (Manaaki Whenua – Landcare Research) where it was identified. His site is among red tussocks (*Chionochloa rubra*) bordering an ephemeral kettlehole tarn (Fig. 1). This variety of *Carex kirkii* has possibly been overlooked as Tony Druce did not recognise the two varieties of *C. kirkii* in his species lists (Druce 1993), although Elizabeth Edgar (Moore and Edgar 1970) in *Flora of New Zealand Volume II* had retained the distinction. The differences between the two varieties of *Carex kirkii* (Fig. 2, p. 63, Table 1, p. 64) are retained in cultivation.

It is also possible that *Carex kirkii* var. *elator* has been overlooked because it is difficult to spot in its wetland edge habitat, looking very grass-like, like a lax *Poa colensoi* or a fine-leaved *Schoenus pauciflora*, and the flowers/fruit are out of sight near the base of the plant. Worryingly, it may be hardly recognised because it is rare and disappearing in the eastern South Island. Here there has been much disturbance of wetlands, particularly by the encroachment of exotic grasses around the edges of these habitats, which is just the place this sedge seems to like best. Its current status is unknown in NW Nelson, which from past collections appears to be its stronghold – places like the Arthur Tablelands, Cobb Valley, the



**Figure 1.** Left, *Carex kirkii* var. *elator* near Lake Heron, growing Right, (arrowed) above kettlehole tarn vegetation among *Chionochloa rubra* and exotic grasses (*Agrostis capillaris*, *Anthoxanthum odoratum* and *Holcus lanatus*).



**Figure 2.** Top, *Carex kirkii* var. *elatior*; Middle, *C. kirkii* var. *kirkii*; Bottom, Utricles, glumes and achenes of (left) *C. kirkii* var. *elatior* and of (right) *C. kirkii* var. *kirkii*.

headwaters of the Matiri River, and the 1000 Acre Plateau. It has also been collected from a small red tussock basin on Tākaka Hill known as Moa Park. There appear to be no records from the basins of Otago since the very early collections of the late 1890s and early 1900s (e.g. from Nevis Valley and St Bathans).

**Table 1.** Differences between the two varieties of *Carex kirkii*, which are retained in cultivation.

	<i>Carex kirkii</i> var. <i>elatior</i>	<i>Carex kirkii</i> var. <i>kirkii</i>
Habit	tall fine-leaved, lax tussock or clump	low short-leaved, compact clump
Inflorescence	spikes spaced along the culm	spikes congested
Utricle surface	smooth	densely papillose
Utricle length (mm)	4.0-5.0	3.5-4.8
Habitat	montane-subalpine; wetland edges, kettleholes, lakes, streams, red tussock grassland. (Note: growing at the upper edges bordering taller vegetation.)	alpine; herb & fellfield, snow hollows, damp tussock-grassland.

Recent molecular work has provided much fodder for a new classification of *Carex*, which will soon be incorporated into a NZ Flora update of New Zealand's *Carex* subgenus *Vignea*, to which *C. kirkii* belongs. At a finer level it can be further classified into a smaller group (section *Inversae*) with eight other species (*Carex applanata*, *C. colensoi*, *C. inversa*, *C. kaloides*, *C. kirkii*, *C. muelleri*, *C. pterocarpa*, *C. resectans*, and *C. trachycarpa*).

All are endemic to New Zealand with the exception of *Carex inversa*, which also occurs in Australia (including Norfolk and Lord Howe Islands). The distribution of this group is concentrated in the eastern South Island, although *Carex colensoi*, *C. inversa* and *C. resectans* also occur in the North Island. The group represents a small radiation of species into a variety of fluvio-glacial and mountain habitats, mostly wetlands (kettleholes, tarns, bogs, streams), herbfields and tussock-grasslands.

Of *Carex* section *Inversae*, *Carex colensoi*, *C. kaloides*, *C. kirkii* var. *elatior*, *C. muelleri* and *C. resectans* are vulnerable to land use changes and wetland degradation occurring in lower altitudes of the eastern South Island. *Carex kirkii* var. *elatior* is likely to be particularly sensitive to weed invasion (of exotic grasses and *Carex leporina*) at the edges of wetlands and ephemeral kettleholes. This has likely led to a reduction in populations and local extinction, although its status is unknown without dedicated survey at previously known and likely sites.

There are three sites to-date where *Carex kirkii* var. *elatior* is known to exist. They are: the Lake Heron site discovered by Graeme Ure (about 20 plants), Moa Park on Tākaka Hill (abundance unknown), and Lake Jeanette (in the headwaters of the Matiri River) where one plant was recently found after about five hours of searching on the flats directly above the lake where it had been seen previously on two separate occasions in 1980s. Further work is needed to evaluate its distribution and to determine its rarity.

## References

- Druce AP. 1993. Indigenous vascular plants of New Zealand. Unpublished checklist. 9<sup>th</sup> Revision: Landcare Research, Lower Hutt.
- Moore LB, Edgar E. 1970. Flora of New Zealand. Volume II. Indigenous Tracheophyta: Monocotyledones except Gramineae. Botany Division, Department of Scientific and Industrial Research. Wellington, New Zealand: Government Printer.

---

## Just for the record – additions to *Plant Life on Banks Peninsula*

Hugh Wilson

Hinewai Reserve, 632 Long Bay Road, R.D. 3 Akaroa 7583

Since the publication of *Plant Life on Banks Peninsula* (Wilson 2013) three native vascular plant species, one native hybrid, and 13 more or less naturalised species not native to Banks Peninsula, have been recorded. Some have already been mentioned in earlier issues of the *Canterbury Botanical Society Journal*, but I bring them all together here with notes and a few remaining doubts and queries. For most of these records, specimens are being lodged in the Allan Herbarium (CHR).

### Native species

*Bulbinella hookeri*. First recorded for Banks Peninsula in 2019 on Hinewai Reserve (Wilson 2020).

*Chionochloa rubra* (red tussock). First recorded for Banks Peninsula by David Norton in 2016 (see Wilson 2020), but both David and I wondered if the single tussock beside Te Ara Pātaka (the Peninsula's summit walkway) was a natural occurrence or had arrived as a seed on a tramper's boot. However, in November 2020 Melissa Hutchison reported a small but significant tract of ground near the top of Mount Herbert Scenic Reserve supporting many red tussocks. Not far from David's solitary tussock, Melissa's patch is well off the track and likely to be completely natural.

*Gastrodia minor* (black orchid). During and since my botanical survey of Banks Peninsula in the 1980s, I identified two black orchids, *Gastrodia cunninghamii* and *G. molloyi*, but no plants resembling *G. minor*. That was until several plants of *G. minor* appeared under a *Veronica (Hebe) strictissima* by Hinewai's old manager's house in the summer of 2016-17. None were seen the following summer, but in 2018-19 more than 40 stems appeared and flowered at the same locality, across a few square metres (one stem was several metres further away), all of them matching *G. minor*.

*Olearia bullata* x *ilicifolia* (see Wilson 2016). This unusual hybrid flowered in the Hinewai arboretum in early December 2017, and was sketched in my field notebook.