

BREEDING SYSTEMS IN NEW ZEALAND PLANTS. 7. SOME FLOWERING RECORDS FOR *SOPHORA MICROPHYLLA* IN SOUTH ISLAND

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These miscellaneous flowering records for *Sophora microphylla* (kowhai) are culled from my notebooks, and were mainly noted during journeys by car on official DSIR business in the northern half of the South Island. I have grouped them into five regions, defined by the direction in which the main rivers flow, because the distribution of kowhai within New Zealand is best understood if studied catchment by catchment.

In **North-West South Island** my records come from rivers that flow northwards, or contribute to the south-westward flowing Buller; in **West South Island** the rivers flow westward with the catchments lacking kowhai except near the coast; in **North-East South Island** the rivers flow north or east, and in **East South Island** they flow eastwards, except on **Banks Peninsula** where the streams flow in all directions.

Some of these records have already been mentioned in a paper on flowering in kowhai by Godley & Smith (1977) but here they are given in more detail. Each entry gives the locality, month, date, year, and a comment (fl=flower), and may refer to a single tree or group of trees.

North-West South Island

Collingwood (just west of Aorere River on main road)	Oct	14	60	almost finished
Wairoa Gorge (near Brightwater)	Oct	3	71	fl.
Brightwater (Snowdens Bush)	July	26	63	—
	Sept	15	61	fl.
	Sept	27	63	full fl.
	Oct	10	60	almost finished
Buller River (east bank, Owen River to Murchison)	Oct	13	81	fl.

Murchison (1 km W of Matakitaki bridge on main road)	July	24	77	—
	July	28	61	—
	Sept	14	61	—
	Oct	4	71	fl.
	Oct	13	81	early fl.
	Oct	15	60	late fl.
	Nov	3	72	—
Matakitaki River (up-river from Murchison)	Nov	4	72	fl.
Maruia (river flats from Maruia proper towards Springs Junction)	July	24	77	—
	July	28	61	—
	Sept	14	61	—
	Oct	4	71	—
	Oct	13	81	—
	Oct	15	60	—
	Nov	3	72	fl.
Inangahua	Sept	25	74	fl.
	Nov	3	72	—
West South Island				
Punakaiki (mouth of Bullock Creek)	Sept	26	74	fl.
Lower Grey River (near turn-off to Blackball)	Sept	25	74	fl.
Greymouth (near bridge over Grey River)	Sept	22	74	fl.
Paroa (south of Greymouth)	Oct	6	71	fl.
Waitangitaona River	Oct	8	75	fl.
Waitangiroto River (heron colony)	Oct	7	71	fl.
	Oct	8	75	poor fl.
North-East South Island				
Rai Valley	Oct	3	71	fl.
Tuamarina	July	21	65	—
	July	24	63	—
	Aug	26	64	fl.
	Sept	28	63	fl.

Seddon	Sept	17	61	late fl.
Hapuka Reserve (north of Kaikoura)	June	18	74	—
	July	19	63	fl.
	July	20	65	fl.
	July	25	61	—
	Aug	26	64	fl.
	Sept	17	61	fl.
	Sept	28	63	fl.
East South Island				
Hundalee Hills	May	12	74	3 trees late fl. bud
	June	22	64	few trees beginning fl.
	July	5	66	early fl.
	July	20	65	fl.
	July	19	63	fl.
	July	25	61	early fl.
	July	26	70	fl.
	Aug	2	73	fl.
	Aug	24	71	occ. fl.
	Aug	25	70	fl.
	Aug	25	64	fl.
	Sept	15	73	fl.
	Sept	17	61	fl.
	Sept	26	63	late fl.
	Oct	2	61	—
	Oct	9	60	—
Boyle River (foot of Lewis Pass) <i>c.</i> 850 m. a.s.l.	Sept	14	61	—
	Oct	15	60	fl.
	Oct	26	66	finished
	Nov	4	72	late fl.
Waiau River (Hanmer junction—Amuri Plain)	Sept	14	61	fl.
	Sept	15	77	fl.
	Oct	15	60	fl.

Hurunui River (near mouth)	Sept	26	72	fl.
Blythe Valley and Napenape	Aug	22	2005	fl.
Rakaia Gorge (bridge)	Sept	17	66	fl.
Rakaia River (Great Island)	April	6	71	few fls
	May	16	70	fl.
	May	22	72	fl.
	Aug	31	83	fl.
Peel Forest	Sept	17	66	fl.
Lake Tekapo (Motuariki Island)	Oct	10	73	fl.
Lake Ohau (SW shore)	Sept	19	66	—
Lake Ohau (SE shore)	Sept	13	74	occ. tree in fl.
	Oct	10	73	fl.
Ben Ohau (c. 1000 m a.s.l.)	Sept	13	74	small fl. buds

Banks Peninsula

Pigeon Bay (trees near seashore, head of bay)	June	13	89	fl.
	July	10	89	fl.
	July	16	88	fl.
	Aug	14	88	fl.
	Sept	4	88	fl.
	Sept	25	89	—
Okuti Valley	Aug	21	69	early fl.
	Oct	11	73	late fl.
Above Akaroa, on Flea Bay Road	Oct	29	74	fl.
Kaituna and Prices Valley	Oct	31	61	—

DISCUSSION

Obviously the flowering records listed above are of limited value in defining flowering periods at any place. They record only a single day in what can be a long flowering time. However, single records become more useful if accumulated over years in one place as at Hundalee (June–Sept); and a larger number, such as the 64 recorded here for the northern half of the South Island, can provide useful generalisations such as the following:

1. Trees of *Sophora microphylla* can be found in flower at one place or another in the period April–November from near Collingwood, close to the northern tip of South Island, to Lake Ohau in mid-central South Island
2. The earliest records (April–May) come from Great Island in the Rakaia River (Canterbury) between Highway 1 and the sea.
3. The latest records (3–4 Nov) come from far inland in the upper Waiau and Buller catchments. In the former, at the Boyle River, there are earlier flowering records than November, but in the upper Maruia of the Buller catchment none are earlier. One could add that kowhai can flower in December in inland Otago (Godley & Smith 1977).

Horticulture

Godley (1978) suggested selection of early and late-flowering lines of pohutukawa (*Metrosideros excelsa*) to give extended flowering in a 2-tree garden. The same possibility could be explored in kowhai using seed from Great Island and the upper Maruia (where there is also an attractive weeping form) and inland Otago. There is evidence that flowering time in kowhai is under genetic control (Godley & Smith 1977).

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