

Barbed wire grass (*Cymbopogon refractus*) on Motutapu Island, Hauraki Gulf – a new record for New Zealand?

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Cymbopogon refractus (R.Br.) A.Camus (syn. *Andropogon refractus* R.Br.) (Poaceae) is a native Australian tufted perennial grass. Widespread throughout eastern Australia, it is found in Queensland, New South Wales, A.C.T, Victoria and Norfolk Island, preferring coastal areas (Simon & Alfonso 2011, Orchard 1994). Although present in the Northern Territory it is much less common there (Simon & Alfonso 2011). Found throughout the Pacific region in New Caledonia, Vanuatu, Fiji, Samoa, Tonga, Cook Is., Hawaiian Islands, Society Is., Tahiti and Tuamotu Archipelago (Simon & Alfonso 2011), its exact indigenous range in the Pacific is debated. The early European explorers Banks and Solander noted that barbed wire grass was present in Tahiti upon their arrival (Gardner 2007). Whether the grass is native, or has naturalised in the Pacific due to early Polynesian introduction, is uncertain and requires further investigation.

Common names include: barbed wire grass, barbed-wire grass, barbwire grass, soap grass, turpentine grass and 'aretu' (Tahitian). These names reflect its two most distinct characteristics – the paired spike-like racemes that project at angles in clusters as they ripen resembling barbed wire, although they are not sharp to touch; and the aromatic properties of the stems when crushed. In the same genus as lemon grass (*Cymbopogon citratus*) that is used in Southeast Asian cooking, and citronella grass (*C. nardus*) used to make citronella oil, it exudes a subtle scent of lemon-ginger when crushed. Polynesian peoples used barbed wire grass for housing, covering floors and roofs (Whistler 2015), and as a medicinal tea (Parham 1940).

In November 2016 while conducting a botanical survey for the Motutapu Restoration Trust I found a patch of barbed wire grass overhanging a steep slope 15 m above Launch Bay, on the east coast of Motutapu Island between Station Bay and Mullet Bay. The grass stood out from a distance due to its eye-catching pinkish red and green upright culms, laden with abundant racemes of clustered flowering and fruiting spikelets (Fig. 1). The grass was present at a single locality growing in an area of c. 20 x 10 m.

In Australia it is typically found in *Eucalyptus* forests and woodlands particularly in areas of low fertility tolerating a wide range of soils, with an altitudinal range of near sea level to 920 m (Centre for Australian National Biodiversity Research

2010). On Motutapu Island it is growing in a drought-prone area on a steep slope comprising loose dry infertile soils near a greywacke rock outcrop. It is surrounded by moth plant (*Araujia sericifera*), muehlenbeckia (*Muehlenbeckia complexa*), evergreen buckthorn (*Rhamnus alaternus*), rock fern (*Cheilanthes sieberi*) and other grasses including *Bothriochloa macra* and *Schedonorus arundinaceus*.

My specimen was identified by Rhys Gardner (AK 363343 A & B; Fig. 2). The Ministry of Primary Industries (MPI) was notified as this was the first verified record for New Zealand. It remains unknown as to how the grass reached Motutapu Island and for how long it has been present. So far it has not been found elsewhere on the island.



Fig. 1. Barbed wire grass racemes with deflexed spikelets, Motutapu Island. Photo: S. A. Heiss-Dunlop, 28 Nov 2016.



AK 363343A

AUCKLAND MUSEUM HERBARIUM
AUCKLAND, NEW ZEALAND

POACEAE

09.05

Cymbopogon refractus (R.Br.) A.Camus

Loc. New Zealand, North Island, Auckland Region, Inner Gulf Islands, Motutapu Island (E coast), between Station Bay and Mullet Bay

Map R10

Alt. 10m

Lat. ± 10 m, 36° 45' 0.8" South

Long. ± 10 m, 174° 55' 48.3" East

Coll. S A Heiss-Dunlop pin 15

Date 28 Nov 2016

Det. R O Gardner

Date 10 Dec 2016

Notes Locally scattered on dry exposed N-facing steep clay slope, 10-18m asl. Grazed by stock in the past. Dense clumping grass with 1m tall culms, flowering. Growing amongst the common *Bothriochloa macra*, pasture, coastal grasses, and scattered moth plant, rhamnus, *Muehlenbeckia complexa*, *Calystegia soldanella*, hairy trefoil. Appears to be restricted to this slope covering an area of c.30sqm². Not seen elsewhere on the island so far. Appears to be a new record for New Zealand. Over 2 sheets: A & B. DUPLICATE TO: CHR



Fig. 2. *Cymbopogon refractus*, Motutapu Island, between Station Bay and Mullet Bay, SA Heiss-Dunlop, 28 Nov 2016, AK 363343A. Photo: Auckland Museum Herbarium, Dec 2017.

An unsubstantiated record by J.D. Hooker was listed in the "Handbook of the New Zealand Flora" (Hooker, 1864: 325). Edgar and Shand (1978) listed *Andropogon refractus* R.Br. noting that "One specimen, without locality, was mentioned by Hooker as probably accidentally placed in Allan Cunningham's herbarium. No specimens seen".

It is possible that barbed wire grass was accidentally brought to New Zealand in the early phase of European farming via seed or livestock imported from Australia. Given the abundance of another Australian grass, *Bothriochloa macra* on

Motutapu Island and the early Auckland record of kangaroo grass (*Themeda triandra*) in the 1870s and 1880s by T. F Cheeseman, and its more recent discovery on Browns Island in 2007 (Wilcox 2008), this may suggest that barbed wire grass has been present for some time and has gone undetected.

Acknowledgements

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The walking stick cabbage (*Brassica oleracea* var. *palmifolia*) on Motukorea/Browns Island, inner Hauraki Gulf, Auckland

Ewen K. Cameron



Fig. 1. A slightly limp walking stick cabbage specimen at the herbarium – a challenge to press! Photo: Dhahara Ranatunga, 22 Mar 2017.

I received an email from Holly Cox, Auckland Council: "We collected a *Brassica* sp. on Browns yesterday. It is rather large. Wondered if it was ok to drop off this afternoon or tomorrow?" The 1.7 m tall specimen was rather larger than I expected (Fig. 1). A Google search quickly revealed that it had many common names, including: walking stick cabbage, walking stick kale, palm cabbage, palm kale, Jersey cabbage, Jersey kale, long jacks, cow cabbage, tree cabbage and Cesarean cole. The scientific name in wide use was *Brassica oleracea* var. *longata*, however, I could not find a valid publication for this varietal name. Checking with IPNI staff confirmed that it is just a horticultural name and that its correct name is: *Brassica oleracea* var. *palmifolia* DC., Syst. Nat. [Candolle] 2: 584, 1821. This is yet another useful variation of this amazing species, *Brassica oleracea*, which includes: Brussels sprouts, cauliflower, broccoli, head cabbage, savoy cabbage, kale, kohlrabi and collard greens.

Because of the site where it was growing, the collectors of the specimen on Motukorea said it appeared to be wild, not planted (Fig. 2). How did it get there? The tiny seeds are virtually spherical,