

Red tide at Orewa, north-east Auckland

Mike Wilcox

A large washup of a hair-like seaweed occurred on Orewa Beach in May 2019 (Flahive & Williams 2019). A local resident said she had not seen anything like it there before (Figs. 1 and 2). There was a report of it at nearby Red Beach as well. Maureen Young collected a sample from Orewa on 7 June 2019, and I also obtained a sample on 25 June, by which time the washup had all but disappeared and was confined to a few patches buried in sand at the high tide mark.

The brownish-red string-like nature of the seaweed and the cross-section of the thalli having prominent medullary filaments (Fig. 3) indicated that it was a red alga of the family Solieriaceae, and the same as or very similar to the *Solieria* sp. of common occurrence in the Manukau Harbour, and also known from Kaipara Harbour, Orakei Basin, and Great Barrier Island (Nelson et al. 2015; Wilcox 2018 as *Solieria* cf. *chordalis*).

Although morphologically resembling both *Solieria chordalis* (a European species) and *S. filiformis* (an Atlantic North American species) the Auckland population (sampled from Orakei Basin) differs somewhat from these in its DNA sequences (Fredericq et al. 1999). The Auckland occurrences of this seaweed have all so far been entirely sterile

(vegetative), lacking both tetrasporangia and sexual reproduction structures.

Free-floating vegetative populations of *Solieria* have been reported from France (Floc'h et al. 1987) and Italy (Perrone & Cecere 1994). Populations in the Manukau Harbour are similarly free-floating and wash up regularly, but also form beds attached to mud banks. The source of the Orewa washup is unknown. The nearest-known *Solieria* occurrence is at Tryphena, Great Barrier Island, where Peter de Lange found it in April 2010 locally at Shoal Bay, free-floating and as semi-attached thalli on shelly sand within shallow rock pools at the low tide mark.

Herbarium specimens

Orewa Beach, *M.E. Young*, 7 June 2019, AK 378183 (Fig. 3)

Orewa Beach, *M.D. Wilcox* (MW 6249), 25 June 2019, AK 378182 (Fig. 4)

Acknowledgements

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Fig. 1. General appearance of the *Solieria* washup, Orewa Beach, 20 May 2019. (©Stuff)



Fig. 2. A closer view of the *Solieria* washup, Orewa Beach, 20 May 2019. (©Stuff)



Fig. 3. Cross section of thallus showing loose medulla with filaments, large inner cortical cells, and outer photosynthetic cortex (the dark layer with cells obscured by section thickness). Scale bar = 100µm. Microscope image from AK 378183, Mike Wilcox, 15 June 2019.



Fig. 4. Herbarium specimen AK 378182 from Orewa (MW 6249). Scale bar = 5 cm. Photo: Mike Wilcox, 15 June 2019.

References

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Two yellow-flowered garden plants: *Justicia aurea* (Acanthaceae) and *Reinwardtia indica* (Linaceae)

Rhys Gardner

I was impressed by the profuse winter-flowering of these two shrubs this year (Figs. 1, 2) and wondered whether it was because of the record hot summer we had just had. A sceptic would point out though that their native habitats are not alike: the *justicia* comes from the inland savannas of Brazil and the *reinwardtia* from the mountains of east Asia. Regardless, I do not want to board the climate-change bandwagon here; I just want to mention some features of their flowers.

Justicia aurea, the yellow, or Brazilian, plume flower, despite being colourful, easy to grow, and

not especially susceptible to frost, is rather uncommon in Auckland's gardens. There is little problem in determining its family, even from vegetative features alone: a lack of stipules, and opposite entire leaves marked by minute raised pale cystoliths (check the dead leaves) immediately suggest Acanthaceae (with Nyctaginaceae a not-so-near miss). Getting further is trickier; the family is a large one and its genera continue to be tinkered with. There is a feature of the *J. aurea* flower that might be more or less characteristic of the genus, though: the style lies appressed to the curved-over uppermost side of the corolla