

Streamsides of false heather (*Cuphea hyssopifolia*, Lythraceae)

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In April this year I was investigating a site on the as yet undeveloped northern side of Oteha Valley Road, between the Albany Stadium parking area and East Coast Bays Road. Some of the course of the Oteha Stream here was in reasonably natural condition, but higher up it had been straightened and the debris piled in a line each side, and apart from some permanently-juvenile *Potamogeton cheesemanii* in the now swiftly flowing water the botanical interest of the scene was pretty well lacking.

This situation was to change, literally just round the corner, at the top of the site, where a large culvert joined the stream at right angles, bringing in stormwater from the developed land on the southern side of the road. This was one of those "eco-culverts", designed to run its flow gently into the receiving stream without undermining itself or lowering the stream bed - extending beyond its mouth was an apron of concrete on which were cemented head-sized pieces of rock, in this case scoria rather than the more usual basalt blocks or globs of concrete.

An engineer might have paused to contemplate this scene but I was galvanized by the astonishing plant-life here; growing on the pieces of scoria were numerous purple-flowered bushes of the adventive plant *Cuphea hyssopifolia*. With their single stems (to c. 50 cm tall), compact foliage and lurid flowers, these plants look like a cartoonist's imaginings, but in fact they fall into a much more select group, the rheophytic perennials, that is, plants which are adapted to grow in or close alongside swiftly-flowing streams.

As usual, the "Sunset Western Garden Book" (Brenzel 1995) gives an accurate word-picture of this species: "Native to Mexico, Guatemala; interesting for summer color in small beds, as formal edging ... compact shrublet 6 in to 2 ft tall, with flexible leafy branches; leaves evergreen ... very narrow". The narrowness of the leaves and the flexibility of the stems are of course necessary characters of rheophytic species.

I had found *Cuphea hyssopifolia* a couple of years ago at Moire Park in Massey, western Auckland, where it was growing out from just under the lip of a trench-like stream that ran down through kanuka scrub into the Manutewhau Stream (Gardner & Lange 1996) - it had not occurred to me then though that it might be a rheophyte. Van Steenis's monograph (1981) makes it clear that in its homeland it is in fact an obligate rheophyte, that is, one that grows in no other habitat, and he quotes from another Flora:

"this is one of several Central American plants, species of *Cuphea*, *Aster*, *Eupatorium*, *Lindenia*, and a few other groups, whose habitat is almost wholly confined to large rocks along the edges of usually swift streams. These rocks project above the mean level of the stream, but during times of heavy rain the plants are often covered with rushing water. Most of these plants, obviously, have tough stems that are able to withstand the debris carried by the often rapid currents of water."

"Flora of New Zealand IV" (Webb et al. 1988) contains *Cuphea hyssopifolia* as a fully-naturalized species, though it was known at that time from two localities only, one being Tutukaka and the other the Auckland University grounds. It might be supposed that these naturalizations had taken place along a gutter or at the base of a downpipe, but not so - the records are merely based on "seeding-down" in garden beds (AK !; CHR !).

It can be noted that in Hawaii, as in New Zealand, the plant has become wild in both "normal" disturbed sites and in stream beds (Wagner, Herbst & Sohmer 1990).

To complete the picture of the habitat of this plant at Oteha Valley Road, it can be noted that on the scoria pieces here it is accompanied by a growth of *Erigeron karvinskianus* (also a mat-rooted perennial).

References

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