Growth of adventitious roots from a leaf cutting of kawakawa (*Piper excelsum* subsp. *excelsum*, Piperaceae)

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Fig. 1. Kawakawa leaf in-situ in the terrarium where it grew. All photos by author, 27 Sep 2017.

Fig. 2. Adventitious roots formed at the basal end of kawakawa leaf petiole. Scale bar = 1 cm. 27 Sep 2017.

To get in touch again with my childhood, and to let my children also see the wonder of metamorphosis first hand, we have a pet Australian golden bell frog (*Litoria aurea*) that we raised from a tadpole. As a hiding place, we regularly place a kawakawa leaf in the terrarium (Fig. 1), which we take from a plant in our garden. By placing the basal end of the petiole in the 'frog pond', and the lamina of the leaf resting on the adjacent rocks and mosses, the leaves stay green for several weeks before starting to decompose. To my surprise, when I pulled out a leaf to replace it with a fresh one, I found it had grown a cluster of roots up to c. 6 cm long (Fig. 2). The conditions were ideal for growth, with constant water, high humidity, and a supply of nitrogenous frog poo, so it is unclear whether this is an anomaly, or indicative that kawakawa may regenerate by vegetative means more widely.

However, other Piperaceae are commonly propagated by leaf cuttings, such as *Peperomia* species (The Succulent Plant Page 2017), and pippali (*Piper longum*), a medicinal plant of India. A trial of growing pippali found that new plants could be grown from leaf cuttings, although a higher percentage of success, for both root and shoot growth, occurred for basal petiolar cuttings (leaf cuttings with the petiole attached) than for apical halves (only the top half of the leaf) (Basak *et al.* 2014). Kawakawa are sometimes propagated using semi-hardwood cuttings (New Zealand Plant Conservation Network 2017), and under the right conditions, natural establishment from fallen branches or leaves is probably not inconceivable.

References

Basak U.C., Dash D., Jena G.J.P., Mahapatra A.K. 2014: New technique for adventitious rooting and clonal propagation of *Piper longum* L. (pippali) through leaf cuttings. African Journal of Plant Science 8 (2): 108-112.

New Zealand Plant Conservation Network 2017: *Piper excelsum* subsp. *excelsum*. http://www.nzpcn.org.nz/flora_details.aspx?ID=964 Accessed 27-09-2017

The Succulent Page 2017: http://succulent-plant.com/families/piperaceae.html. Accessed 27-09-2017.

Fig. 1. *Araujia* species