

Lysimachia nummularia (Primulaceae) naturalised in New South Wales, Australia

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Abstract

In November 2015 the first naturalised collection of *Lysimachia nummularia* L. (Primulaceae) was made for New South Wales from the Apsley River in the Northern Tablelands. This creeping, perennial herb is native to Eurasia and previously recorded as naturalised in Australia in Victoria and Tasmania. It has the potential to be an invasive weed, particularly in wetland and other damp habitats. A description of *L. nummularia* is provided as well as a key to *Lysimachia* taxa occurring in New South Wales.

Introduction

Lysimachia nummularia L. (Primulaceae), commonly known as Creeping Jenny or Moneywort, is a creeping perennial herb native to Eurasia where it grows near water bodies and in swamps and other damp habitats. Introduced to North America, where it is an invasive species in some areas, it aggressively spreads in favourable conditions such as wet ground and near water bodies. In Australia, *L. nummularia* has previously been recorded as naturalised in Victoria (Walsh 1996) and Tasmania (Curtis 1967). The earliest herbarium specimen was collected in 1884 from Sandhurst near Bendigo, Victoria (MEL; CHAH 2016a), although whether or not the specimen is from a naturalised or cultivated plant is unknown; the second herbarium collection, made in 1955, is from near Macquarie River at Ross, Tasmania (HO; CHAH 2016a). Most subsequent specimens are likely to be from naturalised plants and were collected from the 1980s onwards. It has now been found naturalised in New South Wales with a collection made by RWJ in November 2015 from the Apsley River in the Northern Tablelands.

Lysimachia taxa in New South Wales have previously been described by Makinson (1990), Kodela (2006) and Kodela et al. (2014). This paper provides an account of the first naturalised record and weed alert of *Lysimachia nummularia* in the State, providing information for its presence in New South Wales for the *Australian Plant Census* (CHAH 2016b).

Methods

The description of *Lysimachia nummularia* is based on morphological observation and assessment of specimens from Australia, Europe and the United States of America held at NSW, and from images provided by HO and MEL. Additional data was obtained from Australian flora treatments, including Walsh (1996).

Botanical regions cited for New South Wales follow those of Anderson (1961) and Jacobs and Pickard (1981), and Walsh (1996) for Victoria.

Description

Lysimachia nummularia L., *Species Plantarum* 1: 148 (1753)

Lysimachusa nummularia (L.) Pohl, *Tentamen Florae Bohemicae. Prag* 1: 163 (1809); *Ephemerum nummularia* (L.) Schur, *Enumeratio Plantarum Transsilvaniae* 549 (1866)

?*Lysimachia zawadzki* Wiesn., *Oesterreichisches Botanisches Wochenblatt. Gemeinnütziges Organ für Botanik* 4: 257 (1854)

Creeping, stoloniferous perennial herb; stems prostrate, rooting at nodes, to 40 cm or more long, grooved, narrowly winged (wings decurrent along stem), glabrous, with scattered minute reddish glandular dots and short streaks (papillae). Leaves opposite; lamina (ovate–) broadly ovate to orbiculate, with round or ± cordate base, entire, mostly 10–25 (–35 in lit.) mm long and (5–) 10–26 (–35 in lit.) mm wide (sometimes wider than long), glabrous, minutely dotted with reddish or orange-brown sessile glands; petiole (1–) 2–6 mm long, glabrous, narrowly winged, shallowly grooved adaxially. Flowers simple, solitary in leaf axils, axillary (although solitary in leaf axils they often appear as pairs from the stem nodes where the opposite leaves meet); pedicel 5–35 mm long, glabrous, without a basal bract; sepals 5(6), virtually free, green, 4–10 mm long, 3–7 mm wide, ovate with acute (to acuminate) apex, cordate base, scattered minute sessile glands; petals 5(6), shortly fused (united at base forming short corolla tube), exceeding the sepals, ovate, c. 10–15 mm long, yellow, glandular-spotted, margin minutely glandular puberulent, apex acute or obtuse/rounded; stamens 5(6); filaments often minutely glandular puberulent. Capsule globose or subglobose, 2–3(–4) mm diam., much shorter than persistent calyx, longitudinally dehiscent from apex by 5 valves, many-seeded. **Fig. 1a, b.**

Phenology: Flowering mostly in summer; November–February (–April) in Australia, c. June–July in Northern Hemisphere.

Common names: Creeping Jenny, Moneywort, Creeping Loosestrife, Herb Twopence, Twopenny Grass, Creeping Penny, Wandering Jenny, Creeping Charlie, Yellow Myrtle.

Habitat: in the Northern Hemisphere grows on margins of water bodies, on stream and river banks, floodplains, in wetlands, wet meadows, forests, on wet ground, ditches; also a weed in lawns, parks, ponds, pastures, yards and waste ground (Cholewa 2009, Innes 2011, Cao and Berent 2014, NatureGate 2016). In New South Wales only recorded as occasional on basalt, growing in a wet river bed among *Schoenoplectus* sp. and *Bulboschoenus* sp., with *Potamogeton australiensis* and *Azolla* sp. occupying deeper pools (**Fig. 1c**).

Distribution: Native to Eurasia; naturalised in North America (including Canada and the United States of America), New Zealand and south-eastern Australia, as well as sometimes escaping from cultivation as a weed in Europe. In Australia, *Lysimachia nummularia* is naturalised in north-east Tasmania, central-south Victoria, and now known from a single locality at Apsley River in the Northern Tablelands of New South Wales.

Specimens examined: AUSTRALIA: NEW SOUTH WALES: NORTHERN TABLELANDS: Apsley River, c. 150 m W of Apsley Falls carpark, R.W. Jobson 3018, 11 Nov 2015 (CANB, NE, NSW848185). VICTORIA: EASTERN HIGHLANDS: Millgrove, W side of Warburton Highway, J.C. Reid 2399, 5 Dec 2000 (MEL2089344); VICTORIAN VOLCANIC PLAIN: Ballarat, northwest side of Lake Wendouree, V. Stajsic 3648, 22 Feb 2004 (MEL2280562); VICTORIAN MIDLANDS: Sandhurst, R. Thom 14, 1884 (MEL2234755). TASMANIA: MIDLANDS: West Tamar Fitness Trail, R. Schahinger s.n., 7 Feb 2002 (HO521685), Mersey River at Kimberley, P. Milner s.n., 17 Feb 2002 (HO521686), Macquarie River at Ross bridge, M. Allan s.n., 12 Feb 1981 (HO515542); NORTH EAST: Ringarooma River, M. Wapstra 136, 27 Jan 2007 (HO555073). U.S.A.: ILLINOIS: Naperville, L.M. Umbach s.n., 13 Jul 1897 (NSW). HOLLAND: VULKENBURG: near Wassenaar prov, P. van Ryen s.n., 27 Jun 1947 (NSW); RIJSENBURG: Utrecht, Beverweert Castle, R.C. Bakhuizen s.n. & D. Brink, 5 Jul 1937 (NSW); KRANENBURG: Den Haag, M.R.S. Boetje van Ruyven s.n., 1899 (NSW). DENMARK: Peninsula Mols, Kalo, L. Holm-Nielsen s.n. & S. Jeppesen, 18 Jul 1969 (NSW). ROMANIA: Transilvania district, E.I. Nyarady s.n., 5 Jul 1929 (NSW). UNITED KINGDOM: GLOUCESTERSHIRE: Dursley s.n., 12 Jul 1850 (NSW).

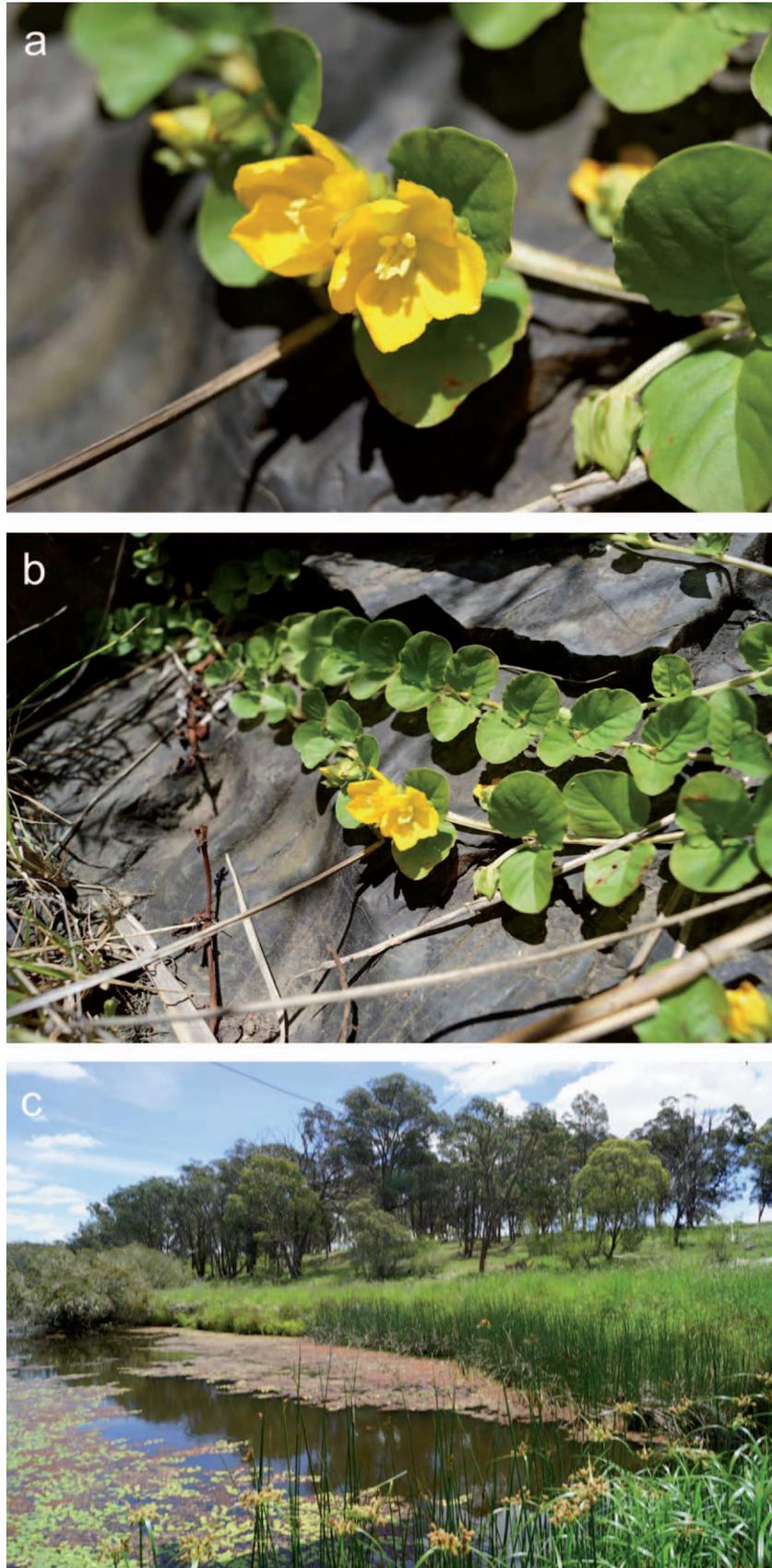


Fig. 1. *Lysimachia nummularia* in situ at Apsley River, Northern Tablelands: **a**, flowers and developing fruit capsule; **b**, trailing habit; **c**, river bed habitat. Images represent specimen and habitat of *R. W. Jobson 3018*.

Weed status: *Lysimachia nummularia* was introduced to North America where it is a naturalised invasive weed species (Innes 2011, Randall 2002, 2012 and references therein). In Australia it has been reported as a weed in Tasmania and sparingly naturalised in Victoria (Randall 2002, CHAH 2016b, Richardson et al. 2011), and although only recently recorded in New South Wales it has the potential to be distributed to other wetland habitats, with the ability to spread vegetatively via fragmentation within waterways especially during flooding. Once established, under favourable conditions, it can spread rapidly as a groundcover and form dense mats that crowd out or outcompete with native species, as seen in places overseas where it has become a significant weed (references herein). Hence, this species has the ability to form monocultures and reduce biodiversity. If seeds are produced they could be spread via water, although it appears that seeds are often not produced, e.g. North American populations of *L. nummularia* rarely, if ever, produce capsules (Cholewa 2009). In North America and New Zealand, plants most commonly reproduce vegetatively with dispersal mostly by stem fragments spread by water movement, deliberate planting, or garden discards (Innes 2011, Champion and Hofstra 2014).

The origin/source of the plants at Apsley River is unknown, however the species has often been introduced as an ornamental for water gardens, borders, containers and a dense groundcover for moist areas, from where it can become a garden escapee. The collection site is c. 150 m from the carpark for the popular tourist attraction Apsley Falls, and close to a walking track from which seed or propagules may have been introduced. *Lysimachia nummularia* has been developed and distributed as a horticultural ornamental groundcover and is available in Australia for cultivation from nurseries, including online suppliers, especially cultivars such as ‘Aurea’, ‘Gold Clusters’ and ‘Golden Creeping Jenny’; often promoted for the plant’s attractiveness, cascading habit, ability to grow rapidly in moist areas, and ease of propagation via cuttings.

Lysimachia nummularia is not listed as a declared noxious or invasive weed species in New South Wales. However, the species has the ability to become a potential problem weed, as indicated by its status as a sleeper weed species (Randall 2001, WWF 2006), and its inclusion in national and international weed lists (e.g. Randall 2007, HEAR 2015). This alert to the presence of a naturalised population of *Lysimachia nummularia* in New South Wales is a step towards increasing awareness of its presence in natural habitats and will assist in the identification and control of other naturalised occurrences.

Key to the *Lysimachia* taxa of New South Wales (Modified from Kodela 2006)

- 1 Flowers yellow 2
- 1: Flowers white to pinkish 4
- 2 Stems ± prostrate; leaves ovate to broadly ovate or ± spatulate or orbiculate,
to 3.5 cm long; flowers simple 3
- 2: Stems erect; leaves elliptic to narrowly elliptic, lanceolate or oblanceolate,
mostly 4–9 cm long; flowers in panicles or racemes *L. vulgaris* var. *davurica*
- 3 Stems and leaves with hyaline, septate hairs; corolla close to or barely exceeding
length of the calyx; sepals and peduncles with hairs *L. japonica*
- 3: Stems and leaves glabrous; corolla distinctly exceeding the calyx; sepals and
peduncles glabrous *L. nummularia*
- 4 Leaves not fleshy; pedicels 1–5 mm long; petals white to pinkish *L. fortunei*
- 4: Leaves slightly fleshy; pedicels usually 5–15 mm long; petals white *L. mauritiana*

Acknowledgments

We thank Neville Walsh (MEL) and Miguel de Salas (HO) for providing images of specimens used in the study. Material collected for this study was obtained during the ABRs Bush Blitz expedition to the Oxley Wild Rivers region of N.S.W.

References

- Anderson RH (1961) Introduction. *Contributions of the New South Wales National Herbarium* 1–18: 1–15
- CHAH (2016a) AVH - Australia's Virtual Herbarium. (accessed 22 February 2016) <http://avh.chah.org.au/>
- CHAH (2016b) *Australian Plant Census*. Council of Heads of Australasian Herbaria. Centre for Australian National Biodiversity Research <http://www.chah.gov.au/apc/index.html> (accessed 22 February 2016)
- Cao L, Berent L (2014) *Lysimachia nummularia*. USGS Nonindigenous Aquatic Species Database, Gainesville, FL, and NOAA Great Lakes Aquatic Nonindigenous Species Information System, Ann Arbor, MI <http://nas.er.usgs.gov/queries/GreatLakes/FactSheet.aspx?SpeciesID=2680>
- Champion P, Hofstra D (2014) *Lysimachia nummularia*. New Zealand Plant Conservation Network. http://www.nzpcn.org.nz/flora_details.aspx?ID=3452 (accessed 22 February 2016)
- Cholewa AF (2009) *Lysimachia*. Pp. 308–318 in Flora of North America editorial committee (eds), *Flora of North America*, vol. 8 (Oxford University Press: Oxford) http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=242416813
- Curtis WM (1967) Angiospermae: Plumbaginaceae to Salicaceae. *The Student's Flora of Tasmania* 3: 467
- Innes RJ (2011) *Lysimachia nummularia*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer) (accessed 22 February 2016) <http://www.fs.fed.us/database/feis/plants/forb/lysnum/all.html>
- Jacobs SWL, Pickard J (1981) *Plants of New South Wales* (D West, Government Printer: Sydney) pp. 226
- Kodala PG (2006) *Lysimachia* (Myrsinaceae) in New South Wales. *Telopea* 11(2): 147–154 https://www.rbgsyd.nsw.gov.au/__data/assets/pdf_file/0004/75118/Tel11Kod147.pdf.
- Kodala PG, Adam P, Wiecek, BM (2014). *Lysimachia mauritiana* (Primulaceae) on seacliffs in the eastern suburbs of Sydney: a new naturalised record for Australia. *Cunninghamia* 14: 89–95 <https://www.rbgsyd.nsw.gov.au/RoyalBotanicGarden/media/RBG/Science/Cunninghamia/Volume%2014%20-%202014/Cun14kod089.pdf>
- Makinson RO (1990) Primulaceae. Pp. 504–506 in Harden GJ (ed.), *Flora of New South Wales* vol. 1. (New South Wales University Press: Kensington)
- NatureGate (2016) Creeping Jenny *Lysimachia mauritiana* (accessed 22 February 2016) <http://www.luontoportti.com/suomi/en/kukkakasvit/creeping-jenny>
- Randall RP (2001) garden thugs, a national list of invasive and potentially invasive garden plants. *Plant Protection Quarterly* 16: 138–171
- Randall RP (2002) *A global compendium of weeds*. (RG and FJ Richardson: Meredith, Melbourne)
- Randall RP (2007) *The introduced flora of Australia and its weed status*. (CRC for Australian Weed Management: Glen Osmond)
- Randall RP (2012) *A global compendium of weeds* 2nd edn. (Department of Agriculture and Food, Western Australia: Perth)
- Richardson FJ, Richardson RG, Shepherd RCH (2011) *Weeds of the South-East. An identification guide for Australia* 2nd edn. (RG and FJ Richardson: Meredith)
- Walsh NG (1996) Primulaceae. Pp. 517–522 in Walsh NG, Entwisle TJ (eds), *Flora of Victoria* vol. 3, *Dicotyledons Winteraceae to Myrtaceae* (Inkata Press: Melbourne). *VicFlora*. <http://data.rbgsyd.vic.gov.au/vicflora/flora/taxon/2f840759-afab-4f43-8b99-bc281c147c3f>
- WWF (2006) National list of naturalised invasive and potentially invasive garden plants http://awsassets.wwf.org.au/downloads/sp092_list_invasive_garden_plant_4apr06.pdf

