

National Library of Australia
Cataloguing-in-publication entry (PDF):
Flora of the Darwin Region Volume 1
ISBN: 9781921519949 (PDF)
Series: Northern Territory Botanical Bulletin No. 37
Notes: Includes bibliographical references and
index.
Subjects: Botany – Northern Territory – Darwin
region – Plants – Identification
Other Authors/Contributors: Short, P.S.,
Cowie, I.D., Northern Territory Department
of Natural Resources, Environment, the Arts
and Sport.
Dewey Number: 581.994295
ISSN: 0314-1810
Date of Publication: March 2011

Cover: *Helicteres procumbens* (Benth.) Cowie, *ined.*
Cover Artist: R. Walter
Editors: P.S. Short and I.D. Cowie
Illustrations: M. Osterkamp
Typesetting: D. Bisa and M. Voukalis
Photographic Editor: B.M. Stuckey
Authors contributing to this publication:
D.E. Albrecht
Northern Territory Herbarium, Department of
Natural Resources, Environment, the Arts and
Sport, P.O. Box 1120, Alice Springs, N.T. 0871,
Australia
R.M. Barker
State Herbarium of South Australia, Plant
Biodiversity Centre, P.O. Box 2732, Kent Town,
S.A. 5071, Australia
I.D. Cowie; B. Crase*; D.J. Dixon*; C.R. Dunlop*;
R.K. Harwood*; R.A. Kerrigan*; G.J. Leach*;
C. Mangion*; P.S. Short; G.M. Wightman*
Northern Territory Herbarium, Department of
Natural Resources, Environment the Arts and

Sport, P.O. Box 496, Palmerston, N.T. 0831,
Australia
L.A. Craven
Australian National Herbarium, Centre for
Plant, Biodiversity Research, G.P.O. Box 1600,
Canberra, A.C.T. 2601, Australia
L.L. Forman† (deceased)
Royal Botanic Gardens, Kew, Richmond,
Surrey, TW9 3AB, UK
B. Jackes
James Cook University Herbarium, School of
Marine and Tropical Biology, James Cook
University, Townsville, Qld 4811, Australia
L. Jessup
Queensland Herbarium Mt Coot-tha Road,
Toowong, Qld 4066, Australia
J. Palmer
Australian National Herbarium, G.P.O. Box
1600, Canberra, A.C.T. 2601, Australia

*Former employee NT Herbarium

This book is copyright. Apart from any fair dealing
for the purpose of private study, research, criticism
or review, as permitted under the Copyright Act, no
part of this publication may be produced by any
process whatsoever without the written permission
of the publisher.

© Northern Territory Government

Publisher:

Northern Territory Herbarium
Department of Natural Resources,
Environment, the Arts and Sport
P.O. Box 496
Palmerston, N.T. 0831, Australia

Suggested citation for this article:

Short, P.S. (2011). Polygonaceae. *In* Short, P.S.
& Cowie, I.D. (eds), *Flora of the Darwin Region*.
(Northern Territory Herbarium, Department of
Natural Resources, Environment, the Arts and
Sport). Vol. 1, pp. 1–6.
[http://www.nt.gov.au/nreta/wildlife/plants_
herbarium/index.html](http://www.nt.gov.au/nreta/wildlife/plants_herbarium/index.html)

POLYGONACEAE

P.S. Short

Herbs, shrubs or lianas or very rarely trees. *Leaves* alternate, opposite or whorled, usually entire but sometimes palmately or pinnately cleft, petiolate or sessile, sometimes articulate; stipules usually well developed, membranous or scarious, connate and forming an often bilobed or fringed sheath (ocrea) around the stem. *Flowers* bisexual or unisexual (if unisexual plants usually dioecious), small, actinomorphic, inflorescences simple or branched and often flowers in small involucrate clusters, each flower commonly subtended by an ocreola; pedicels usually articulate and falling with the fruit. *Perianth* segments mostly 4–6 and usually in about 2 whorls, basally connate and forming a small to conspicuous tube, sepaloïd or petaloïd, commonly persistent and sometimes enlarged in fruit. *Stamens* mostly 2–9, sometimes more, commonly 6 in 2 rows of 3; filaments distinct or basally connate, sometimes of two lengths and those of the inner series may be basally dilated; anthers tetrasporangiate and dithecal, opening by longitudinal slits. *Gynoecium* of (2) 3 (4) carpels united to form a superior, compound, unilocular ovary; ovary with a solitary basal ovule; styles 1–4, free or united. *Fruit* a nut or achene, often trigonous or lenticular. *Seed* with a straight or curved dicotyledonous embryo and well-developed endosperm.

A family of perhaps 46 genera and *c.* 1,200 species. In Australia ten genera, four of which are native, and about 60 species. In the N.T. seven genera and 16 species, with three genera in the D.R.

The family includes Buckwheat (*Fagopyrum esculentum*) and Rhubarb (*Rheum rhaponticum*).

Taxonomic references: Cronquist (1981); Philcox (1997); Walsh (1996); Atha (2004); Mabberley (2008).

- | | | |
|----|-------------------------------------------------------------------------------------------------------------|----------------------|
| 1 | Ocrea absent; inflorescences terminating in tendrils (of many, usually pink, flowers) | Antigonon |
| 1: | Ocrea present; inflorescences not terminating in tendrils | 2 |
| 2 | Flowers unisexual; stigmas flattened, peltately attached, fringed; upper margins of ocrea not ciliate | Muehlenbeckia |
| 2: | Flowers usually bisexual; stigmas capitate and smooth; upper margins of ocrea often with long cilia | Persicaria |

ANTIGONON Endl.

Perennial *herbs*, climbing by means of tendrils above the inflorescence. *Leaves* alternate, entire, petiolate; ocrea absent. *Flowers* bisexual, in racemes or panicles usually terminating in a tendril. *Perianth* segments 5 (6), petaloïd, the outer ones cordate and larger than the inner, increasing in size after anthesis. *Stamens* 7–9, their filaments basally connate. *Styles* 3, stigmas capitate. *Fruit* an angular nut enclosed in the persistent perianth.

Genus of three to eight species from Mexico and central America, with at least two common in cultivation and *A. leptopus* a weed in the N.T.

Taxonomic references: Wagner *et al.* (1990); Philcox (1997).

**A. leptopus* Hook. & Arn.

Vigorous, perennial *creeper* with a large tuber-like root; stems angular and at least potentially more than 10 m long, angular, sparsely to prominently hairy, the hairs all short or a mixture of short and much longer hairs present. *Leaves* with petioles 4–7 mm long; lamina ovate, 2–12 cm long, 1–5.5 cm wide, basally cordate or hastate, margins shallowly toothed, apically acuminate, reticulate venation prominent, major veins covered with short hairs

but otherwise lamina mostly glabrous; leaves dropping during the dry season. *Flowers* profuse, all held in clusters of 2–4 within the inflorescence, each cluster subtended by narrowly triangular bracts 1.5–2.5 mm long; pedicels 4–11.5 mm long, hairy, each pedicel jointed 2–5.5 mm above the base. *Perianth* segments pink or perhaps sometimes white, ovate, 3–10 mm long, 1.5–4.5 mm wide and papery at fruiting. *Staminal filaments* connate to *c.* half their length; anthers 0.7–0.9 mm

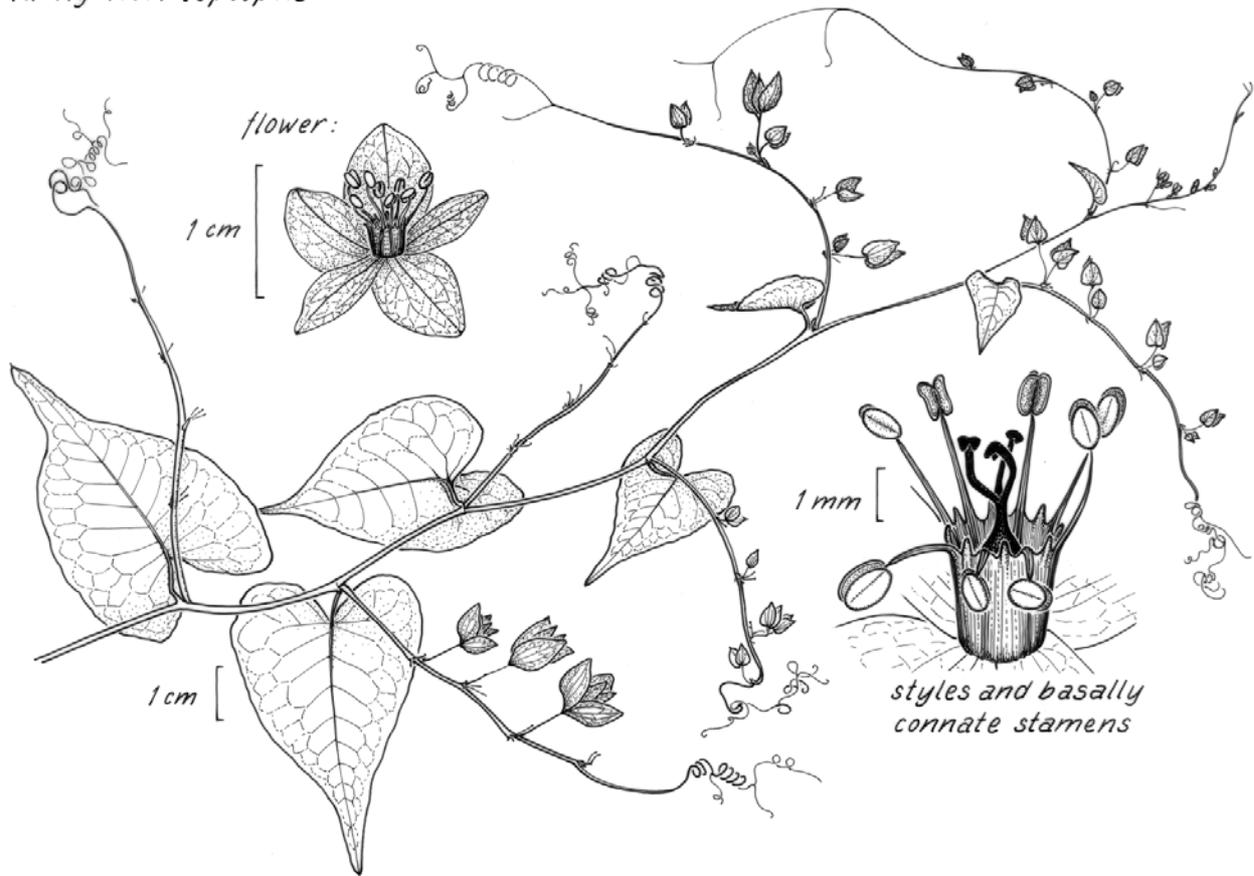
Antigonon leptopus

Fig. 1

long. *Nut* not seen, apparently ovoid-conical, angular. *Flowering* probably throughout the year.

Coral vine.

Fig. 1 (*Dunlop 9078*; *Smith 3135*); Pl. 1 (unvouchered).

Native to Mexico and central America but widely cultivated and a garden escape in many tropical parts of the world, *e.g.* Sri Lanka, Timor and

Hawaii. Known from scattered localities in the Top End, *e.g.* Galiwinku (Elcho Island), open woodland at Milingimbi, and disturbed areas at Nhulunbuy. At DNA the first herbarium specimen verifying its escape from cultivation was collected from cliffs near Fannie Bay in 1972; it had been collected from a cultivated plot at East Point in 1964.

MUEHLENBECKIA Meisn.

Perennial *shrubs* or climbers, dioecious or sometimes monoecious, glabrous. *Leaves* alternate, entire, petiolate or sessile, base of petiole with a band of abscission tissue, pit nectaries present; ocreas tubular, short, upper margins not ciliate, soon disintegrating. *Flowers* unisexual, in subsessile clusters or in spike-like inflorescences or solitary at nodes. *Perianth* segments 5, sepaloid, unwinged, enlarging and fleshy or membranous when fruiting. *Stamens* usually 8 in male flowers; anthers versatile; staminodes present in female flowers. *Styles* 3-fid, stigmas flattened, peltately attached, fringed. *Fruit* a trigonous or globose nut at least partly enclosed in the persistent perianth. **Lignums.**

A genus of *c.* 19 species; found in South America, New Zealand, New Guinea and Australia (14 species). Two species in the N.T. but only one, as yet not formally named, in the D.R.

Taxonomic references: Wilson (1990); Walsh (1996).

M. sp. Mt Brockman (L.A. Craven 2357)

P.S. Short & I.D. Cowie

M. arnhemica K.L. Wilson & R.O. Makinson, *ms**M. rhyticarya* *auct. non* F. Muell.

Scrambling, glabrous *shrubs* often forming thickets to *c.* 2 m tall; stems to at least 5 mm diam., finely striate, yellowish-brown or reddish-brown. *Leaves* with petioles 7–35 mm long; lamina widely ovate to ovate, 18–83 mm long, 9–55 mm wide, green and often slightly discoloured, base subtruncate to cordate and sometimes asymmetric, apices mostly acute to acuminate, rarely subobtusate, venation usually prominent. *Ocrea* striate, brown, papery. *Flowers* clustered in interrupted terminal or near-terminal spike-like or paniculate inflorescences *c.* 3–20 cm or more long; 3–5 flowers per cluster; pedicels variable in length, *c.* 0.5–3 mm long. *Perianth* segments 2–2.5 mm long, free for most of their length, mostly pale greenish-cream or greenish-white but with narrow white margins and slightly fleshy; elongating in fruit and brown and somewhat membranous when dry. *Anthers* 0.75–1 mm long, about the length of the filaments. *Staminodes* 8, 0.5–0.6 mm long. *Nut* 3-

angled but often obscurely so and subglobose, 2.9–3.3 mm long, dull black, with transverse wrinkles. *Flowering & fruiting.* Dec.–July.

Fig. 2 (*Harwood 1360; Russell-Smith 9281*).

Apparently endemic to the Top End. Mostly confined to the sandstone of Kakadu and western Arnhem Land but also on Elcho Island and known in the D.R. from coastal dunes at Pullchoo Bay, Melville Island. It has been collected from *Allosyncarpia* forest, vine thickets, heath and *Triodia* shrubland, and quickly regenerates after fire.

This taxon has been previously referred to in checklists of the N.T. flora as *M. rhyticarya* but that species is from the east coast of Australia, has glaucous leaves with obtuse apices, and manifestly 3-angled nuts. The name *M. arnhemica* K.L. Wilson & R.O. Makinson is listed on the electronic Australian Plant Census database (2006–) and is therefore included here. However, until the species is named and described following the rules of the *International Code of Botanical Nomenclature* the name has no formal nomenclatural standing.

PERSICARIA Mill.

Annual or perennial, decumbent to erect *herbs*, sometimes rooting at nodes, occasionally rhizomatous. *Leaves* alternate, entire, more or less evenly distributed along stem, sessile or petiolate, base of petiole lacking pit nectaries, not articulate; ocrea tubular, entire, membranous, commonly long-ciliate on upper margins. *Flowers* usually bisexual, in spike-like or capitate inflorescences and these usually forming panicle-like compound inflorescences. *Perianth* segments 4–5, usually petaloid, white, pink or green. *Stamens* 4–8; anthers versatile. *Styles* 2- or 3-fid, stigmas capitate and smooth. *Fruit* a lenticular, trigonous or subglobular nut enclosed in the persistent perianth. **Knotweeds.**

A genus previously included in *Polygonum s. lat.* and containing *c.* 150 species. Sixteen species (12 native) are recorded for Australia. Six or seven species are found in the N.T., with four taxa in the D.R.

Taxonomic references: Wilson (1988, 1990); Short (2000).

- | | | |
|----|---------------------------------------------------------------------------------------------------------------------------|----------------------|
| 1 | Leaf-bearing branches densely hairy; ocrea pubescent, mainly membranous but with a green, non-membranous apex | P. orientalis |
| 1: | Leaf-bearing branches glabrous or with scattered hairs; ocrea glabrous or with appressed hairs, the apex membranous | 2 |
| 2 | Flowers few, in clusters less than 13 mm long | P. dichotoma |
| 2: | Flowers many, in spike-like clusters mostly more than 30 mm long | 3 |
| 3 | Ocrea apically with no or usually few cilia, cilia if present less than 4 mm long; perianth segments 3–5 mm long | P. attenuata |
| 3: | Ocrea apically with prominent coarse cilia up to 20 mm long; perianth segments 2–3 mm long..... | P. barbata |

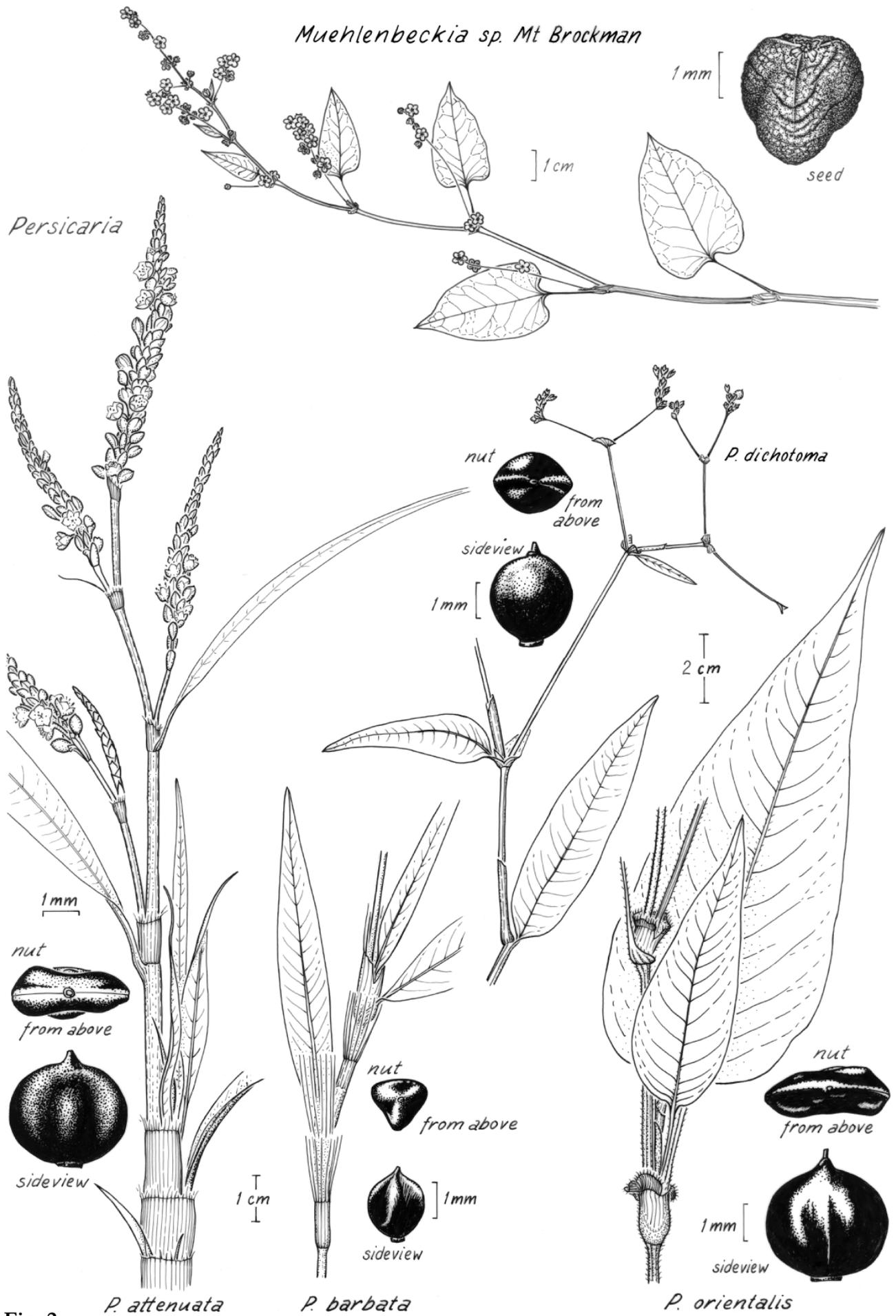


Fig. 2

P. attenuata (R. Br.) Soják*Polygonum attenuatum* R. Br.

Perennial herbs, erect and *c.* 1 m high when terrestrial, sometimes floating and decumbent and branches to *c.* 3 m long, branches glabrous or mostly so, rooting at nodes. *Leaves* with petioles often short or almost absent but up to 3 cm long; lamina narrowly ovate, somewhat falcate, (2) 5–20 (30) cm long, 1.5–4.5 cm wide, apex acuminate, both surfaces commonly with a somewhat dense indumentum of short, white, eglandular appressed hairs, at least the under surface usually with conspicuous sessile glands, sometimes the white hairs mainly restricted to the margins and major veins. *Ocrea* striate, glabrous or with some appressed hairs, truncate, with cilia absent or to 4 mm long, disintegrating with age. *Inflorescence* of 2–4 dense pseudo-spikes 3–13 cm long; main axis with short appressed hairs and/or glandular hairs; ocreola with apical cilia absent or present. *Perianth* segments 3–5 mm long, white or partly greenish. *Nut* lenticular, 2.5–3 mm long, dark reddish-brown, shiny. *Flowering & fruiting* throughout the year.

Fig. 2 (*Madsen 14*); Pl. 2 (*Stuckey 418*).

Occurs in Timor, New Guinea and Australia (W.A., N.T., S.A., Qld, N.S.W.). Highly variable in respect to the indumentum of the leaves and inflorescence this species occurs as far south as Longreach Waterhole near Elliott. It grows in sand or clay and is common in billabongs, dams and floodplains. Localities include Arafura Swamp, Fogg Dam, McMinns Lagoon and floodplains of the Finnis and West Alligator rivers.

P. barbata (L.) H. Hara*Polygonum barbatum* L.

Perennial herbs, erect and to *c.* 1 m high on land or longer if floating, glabrous or hairy, rooting at nodes. *Leaves* shortly petiolate; lamina narrowly elliptic or narrowly ovate, 5–15 (20) cm long, 1–3 cm wide, apex acuminate, rigid eglandular hairs present at least on lower midrib and margins. *Ocrea* membranous and striate, with appressed hairs, apically with coarse cilia 10–20 mm long. *Inflorescence* of 2–5 pseudo-spikes, spikes 3–7 cm long; main axis glabrous or with scattered, appressed, eglandular hairs; ocreola apically long-ciliate. *Perianth* segments 2–3 mm long, white or light green. *Nut* trigonous or sublenticular, *c.* 2–2.5 mm long, dark reddish-brown or blackish, shiny. *Flowering & fruiting* recorded Mar.–Nov.

Fig. 2 (*Lazarides 8831*).

A widespread species, ranging from Africa to Asia and Australia (W.A., N.T., Qld) and in the N.T. known as far south as Calvert Hills (*c.* 17° S). It grows in sand or clay on floodplains, at billabongs, and near springs and permanent streams. Localities include Arafura Swamp and floodplains of the Finnis and Goromuru rivers.

P. dichotoma (Blume) Masam.*Persicaria* (Bulkine Billabong entity)*Persicaria* sp. Bulkine Billabong (C.R. Dunlop 5911)

Herbs, branches weakly decumbent, mostly glabrous. *Leaves* with petioles 0.2–1 cm long; lamina narrowly ovate to lanceolate, (2) 6–12.5 cm long, (0.25) 1.5–2.2 cm wide, surface glabrous, margins minutely and antrorsely scabrous-ciliate. *Ocrea* glabrous, membranous, truncate, distinctly striate, the apex with or without a few short cilia *c.* 1 mm long. *Inflorescence* 2 or 3-branched, flowers several to 10 in very short clusters, clusters to *c.* 12 mm long; main axes reddish, glabrous and ridged; ocreola glabrous and not apically ciliate. *Perianth* segments *c.* 3–4 mm long. *Nut* lenticular, reddish-brown, *c.* 2.7 mm long, shiny. *Flowering & fruiting* Apr.

Fig. 2 (*Dunlop 5911*).

Asia, Malesia, Australia (N.T., Qld, N.S.W.). Only known in the N.T. from a single collection from Bulkine Billabong, Wagait Reserve, where it was growing on floating grass mats. Although having the leaf shape of *B. dichotoma* it lacks the strongly retrorse-strigose hairs typical of that species; because of this it has been previously referred to as *Persicaria* (Bulkine Billabong entity) (Short 2000).

P. orientalis (L.) Spach*Polygonum orientale* L.

Herbs, annual or perhaps perennial, to 2 m high, densely hairy, hairs spreading to antrorse and to 1 mm long. *Leaves* with petioles 2–11 cm long; lamina ovate, 6–24 cm long, 3.5–8.5 (12) cm wide, with spreading to antrorse, somewhat rigid eglandular hairs and sessile glands. *Ocrea* pubescent, mainly membranous and distinctly striate but with a green, non-membranous apex 1–7 mm long. *Inflorescence* of 1–several dense pseudo-spikes 4–17 cm long; main axis pubescent; ocreola hairy. *Perianth* segments 3–4.5 mm long, pale pink. *Styles* 2. *Nut* more or less lenticular, 2.6–3 mm long, dark reddish-brown. *Flowering & fruiting* recorded Mar.–Nov.

Fig. 2 (*Dunlop 3082*).

Found in Asia and Australia (N.T., Qld, N.S.W.). In the N.T. confined to the Top End. Found in billabongs and floodplains, including those of the Daly, Mary and South Alligator rivers. Also recorded for Fogg Dam and Harrison Dam. Usually grows in clay soils.

REFERENCES

- Atha, D. (2004). Polygonaceae. In Smith, N., Mori, S.A., Henderson, A., Stevenson, D.W. & Heald, S.V. (eds), *Flowering Plants of the Neotropics*. (Princeton University Press: Princeton, New Jersey). pp. 308–310.
- Australian Plant Census (2006–). A database of plant names for Australia. <http://www.chah.gov.au/apc/index.html> [Accessed Mar. 2010].
- Cronquist, A. (1981). *An Integrated System of Classification of Flowering Plants*. (Columbia University Press: New York).
- Mabberley, D.J. (2008). *Mabberley's Plant-Book: a Portable Dictionary of Plants, their Classification and Uses*. (Cambridge University Press: Cambridge).
- Philcox, D. (1997). Polygonaceae. In Dassanayake, M.D. & Clayton, W.D. (eds), *A Revised Handbook to the Flora of Ceylon*. (A.A. Balkema: Rotterdam). Vol. 11, pp. 389–408.
- Short, P.S. (2000). Polygonaceae. In Cowie, I.D., Short, P.S. & Osterkamp Madsen, M., *Floodplain Flora. A Flora of the Coastal Floodplains of the Northern Territory, Australia*. (Flora of Australia Supplementary Series Number 10). (Australian Biological Resources Study: Canberra). pp. 67–70.
- Wagner, W.L., Herbst, D.R. & Sohmer, S.H. (1990). *Manual of the Flowering Plants of Hawai'i*. (University of Hawaii Press & Bishop Museum Press: Honolulu). Vol. 2, pp. 1055–1056 (Plumbaginaceae), pp. 1059–1070 (Polygonaceae).
- Walsh, N.G. (1996). Polygonaceae. In Walsh, N.G. & Entwisle, T.J. (eds), *Flora of Victoria*. (Inkata Press: Melbourne). Vol. 3, pp. 272–295.
- Wilson, K.L. (1988). *Polygonum sensu lato* (Polygonaceae) in Australia. *Telopea* 3: 177–182.
- Wilson, K.L. (1990). Polygonaceae. In Harden, G.J. (ed.), *Flora of New South Wales*. (New South Wales University Press: Kensington). Vol. 1, pp. 278–293.



Pl. 1 *Antigonon leptopus* (Photo: D.E. Bisa)



Pl. 2 *Persicaria attenuata* (Photo: B.M. Stuckey)