



45 * FUMARIACEAE ¹

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Annual or perennial herbs, sometimes tuberous; stems procumbent to erect, sometimes climbing, brittle, sap clear and watery. Leaves alternate, lacking stipules, sometimes basal only, pinnately compound, sometimes bi- or tri- or 4-pinnate. Inflorescence a raceme or spike, flowers rarely solitary. Flowers bisexual, hypogynous, usually strongly zygomorphic, rarely almost actinomorphic (*Hypecoum* L.). Sepals 2, small, often peltately attached, not enclosing the bud, caducous. Petals 4 in 2 pairs; outer pair larger, dissimilar, often one or both pouched or spurred at the base; inner pair similar, often partly united. Stamens usually 6 in 2 bundles of 3, a spurred nectary sometimes present at the base of the fused filaments; central anther bilocular, lateral anthers unilocular. Gynoecium of 2 fused carpels; ovary unilocular; stigmas 2 or 2-several; lobed; ovules 2-many. Fruit a longitudinally dehiscent capsule or a nutlet or breaking transversely into 1-seeded segments.

A family of about 19 genera and 400 species, mostly from temperate regions of the Northern Hemisphere but also in southern Africa. In Australia 4 genera and 10 species are naturalized; 2 genera and 5 species in Tasmania.

Fumariaceae are placed in the Ranunculales and, along with Pteridophyllaceae (Japan), has, by some botanists, been included in the Papaveraceae but are retained as distinct here (see Walsh & Norton (2007) & Stevens (2007) & references cited therein). Several species are cultivated as ornamentals.

Key reference: Walsh & Norton (2007).

External resources: accepted names with synonymy & distribution in Australia (APC); author & publication abbreviations (IPNI); mapping (AVH, NVA); nomenclature (APNI, IPNI).

- 1. Flowers white, tipped yellow; fruit a capsule
- 1: Flowers pink or purple; fruit a nutlet

- 1 **Pseudofumaria**
- 2 **Fumaria**

1 * PSEUDOFUMARIA

Pseudofumaria Medik., *Philos. Bot. (Medikus)* 1: 110 (1789).

Glabrous tufted perennials, commonly growing in rock or wall crevices. Leaves \pm glaucous; petioles elongated; lamina bi- or tri-pinnatisect. Inflorescence a lax several-flowered pedunculate raceme; bracts shorter than the pedicels; pedicels spreading or recurved at maturity. Flowers strongly zygomorphic. Sepals 2, caducous. Inner petals clawed at the base, expanded and with a shallow median crest at the apex; outer petals white or yellow, dissimilar, broadly winged; upper petal with a distinct basal spur; lower petal narrow, expanded at the apex, basal spur minute. Upper stamen turgid and papillose at the base. Stigma with 2 crescentic lobes and 2 short apical appendages. Fruit a linear or elliptical-oblong capsule, 3–13-seeded.

A genus of 2 species found in Italy and the Balkans; 1 species introduced to Australia and apparently naturalized in New South Wales and Tasmania.

¹ This work can be cited as: Morris DI (2009) 45 Fumariaceae, version 2009:1. In MF Duretto (Ed.) *Flora of Tasmania Online*. 4 pp. (Tasmanian Herbarium, Tasmanian Museum & Art Gallery: Hobart). ISBN 978-1-921599-05-7 (PDF). www.tmag.tas.gov.au/floratasmania
² (deceased) formerly Tasmanian Herbarium, Tasmanian Museum & Art Gallery, Private Bag 4, Hobart, Tasmania 7001, Australia.

1 * Pseudofumaria alba (Mill.) Lidén, *Opera Bot.* 88: 32, fig. 27b (1986) subsp. **alba**

Fumaria alba Mill., *Gard. Dict.* ed. 8, No. 3 (1768). *Corydalis ochroleuca* W.D.J.Koch, *Flora* 15: 708 (1831). *Corydalis capnoides* Pers. var. *albida* DC., *Syst. Nat. (Candolle)* 2: 126 (1821); *Capnoides albida* (DC.) Bernh., *Linnaea* 13: 665 (1838).

Perennial to 35 cm high; stems 4-angled, remains of old leaf petioles persistent at the base. Leaves: petiole 3-angled; leaflets glaucous, obovate to cuneate, entire or lobed, 10–15 mm long. Racemes erect, 12–25-flowered; bracts white, c. 2 mm long, lacinate; pedicels c. 5 mm long in flower. Sepals white, c. 2 mm long, ovate-cordate, dentate. Corolla creamy-white, 13–17 mm long; upper petal with a green area at the apex; inner petals tipped yellow. Capsule c. 1 cm long, 3–9-seeded. Seed ovate, c. 2 mm long. Flowering Aug.-Feb.; fruiting Nov.-Feb.

Tas. (TSE); also naturalized in NSW; native to the Mediterranean region. Occasional in walls in the Hobart area, sometimes grown as an ornamental and persisting in gardens.

2 * FUMARIA

Fumaria L., *Sp. Pl.* 2: 699 (1753).

Annual herbs, glabrous and usually glaucous; stems delicate, angular, often straggling or climbing by means of sensitive petioles. Leaves 2–4-pinnate. Inflorescence a leaf-opposed or terminal raceme; bracts shorter than to shortly exceeding the pedicels; pedicels spreading or recurved at maturity. Flowers strongly zygomorphic. Sepals peltately attached, caducous. Upper petal spurred at the base, the distal end forming a central keel and lateral wings which may spread or be recurved, hiding the keel; inner petals shortly united at the apex. Stigma with 2 crescentic lobes. Fruit a spherical nutlet with 2 apical pits.

A genus of about 50 species found mainly in Europe with a few species extending into southern Asia and eastern Africa; 7 species naturalized in Australia.

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| 1. | Bract equalling or exceeding the pedicel; sepals broad-ovate to sub-orbicular, wider than the corolla | 1 F. densiflora |
| 1: | Bract shorter than to almost equalling the pedicel; sepals elliptical to ovate-lanceolate, narrower than the corolla | 2 |
| 2. | Ultimate leaf-segments linear to linear-lanceolate, up to 1.5 mm wide; lower petal spatulate with spreading margins | 2 F. officinalis |
| 2: | Ultimate leaf-segments oblanceolate, more than 1.5 mm wide; lower petal without spreading margins | 3 |
| 3. | Inflorescence 15–25-flowered; inner petals yellowish in the middle and proximal part with a darker yellow mid-vein; fruit ± square at the base | 3 F. bastardii |
| 3: | Inflorescence 12–15-flowered; inner petals pinkish-purple in the middle and proximal part, usually without a yellow mid-vein; fruit rounded at the base | 4 F. muralis |

1 * Fumaria densiflora DC., *Cat. Pl. Horti Monsp.* 113 (1813)

Small-flowered Fumitory

Fumaria officinalis var. *densiflora* (DC.) Parl., *Monogr. Fumar* 55 (1844). *Fumaria micrantha* Lag., *Gen. Sp. Pl. (Lagasca)* 21 (1816).

Illustrations: Walsh, *Fl. Victoria* 3: 73, fig. 16l-m (1996); Harden, *Fl. New South Wales* 1, rev. edn: 175 (2000).

Suberect or scrambling annual herb; stems up to 50 cm long. Ultimate leaf-segments up to 1 mm wide, linear to spatulate, ± cupped, apiculate. Inflorescence a raceme, 20–25-flowered, at first very dense, the axis elongating in fruit; peduncle shorter than remainder of inflorescence; bracts pink or purplish, oblong-spatulate, cuspidate or mucronate, equalling or exceeding the fruiting pedicel; pedicels in flower 2–2.5 mm long, in fruit up to 3 mm long, remaining suberect in fruit. Sepals 2.5–3.5(–4) mm long, broad-ovate to suborbicular, subentire above, lacinate below. Corolla purple, darker at the tip, 6–7.5 mm long; lower petal spatulate, the margins spreading at the apex. Fruit globose, c. 2.3 mm long and wide. Flowering Aug.-Feb.; fruiting Oct.-Feb.

Tas. (TNM°, TNS, TSE); naturalized in all Australian states; native to the Mediterranean region. Occasional weed of arable areas and gardens.

2 * *Fumaria officinalis* L., *Sp. Pl.* 2: 700 (1753) subsp. *officinalis*

Common Fumitory

Illustrations: Harden, *Fl. New South Wales* 1, rev. edn: 174 (2000), as *F. officinalis*; Walsh & Norton, *Fl. Australia* 2: 404, fig. 76h-i (2007).

Erect or scrambling annual herb. Ultimate leaf segments up to 1(–1.5) mm wide, linear or spatulate. Inflorescence a raceme, 12–30-flowered; peduncle shorter than remainder of inflorescence; bracts whitish with green midnerve, shorter than to almost equalling the fruiting pedicels, linear-spatulate, apiculate. Sepals 2.5–3 mm long, lanceolate, apiculate, lacinate in the lower half. Corolla pale purple, blackish-purple at the tip, 6.5–8 mm long; lateral petals often with an orange or yellow mid vein in the middle and proximal part; lower petal spatulate, margins spreading at the apex. Fruit broad-obovate, c. 2.3 mm long, usually slightly wider than long, rugulose. Flowering Aug.-Dec.; fruiting ?

Tas. (FLI, TNM, TNS); also naturalized in SA, Qld, NSW, Vic.; native to Europe, Mediterranean region. Apparently rare and known only from vegetable cropping areas. A number of subspecies are recognised in Europe for this species (see Walsh & Norton 2007).

3 * *Fumaria bastardii* Boreau in Duchartre, *Rev. Bot. Recueil Mens* 2: 359 (1847)

Bastard's Fumitory

Illustrations: Walsh, *Fl. Victoria* 3: 73, fig. 16d-e (1996); Harden, *Fl. New South Wales* 1, rev. edn: 174 (2000); Richardson *et al.*, *Weeds of the South-East, an Identification Guide for Australia* 285 (2006); Walsh & Norton, *Fl. Australia* 2: 404, fig. 76d-e (2007).

Erect or diffuse herb; stems up to 55 cm long. Ultimate leaf-segments 1.5–2.3 mm wide, oblanceolate-cuneate. Inflorescence a raceme, (10–)20–28-flowered; peduncle shorter than the remainder of the inflorescence; bracts greenish or purple-tipped, $\frac{1}{3}$ – $\frac{2}{3}$ as long as the fruiting pedicels, narrow-triangular, apiculate. Sepals white, tipped pink, 2.5–3 mm long ovate-lanceolate to oblong-lanceolate, acute or apiculate. Corolla purple with a blackish-purple tip, 9–12 mm long; lateral petals with a yellow stripe along the mid-vein in the middle and proximal part; lower petal narrowly expanded at the tip, with narrow recurved margins. Fruit 2–2.5 mm long and wide, rounded above, truncate and narrowly winged at the base, rugulose. Flowering Aug.-Feb.; fruiting Oct.-Feb.

Tas. (BEL, TNM, TNS, TSE); also naturalized in WA, SA, Qld, NSW, Vic.; native to Europe and the Mediterranean region, widely naturalized. A weed of cropping areas.

4 * *Fumaria muralis* Sond. ex. W.D.J.Koch, *Syn. Fl. Germ. Helv.*, ed. 2, 1017 (1845) subsp. *muralis*

Wall Fumitory

Illustrations: Curtis & Morris, *The Student's Flora of Tasmania* 1, rev. edn: 30: fig. 9 (1975); Walsh, *Fl. Victoria* 3: 73, fig. 16f-g (1996); Harden, *Fl. New South Wales* 1, rev. edn: 174 (2000), as *F. muralis*; Richardson *et al.*, *Weeds of the South-East, an Identification Guide for Australia* 285 (2006); Walsh & Norton, *Fl. Australia* 2: 286, pl. 64; 404, fig. 76f-g (2007).

Suberect or scrambling herb; stems up to 1.5 m long. Ultimate leaf-segments 1.5–2 mm wide, oblanceolate-cuneate. Inflorescence a raceme, 12–15-flowered; peduncle ± equalling the remainder of the inflorescence; bracts green with white margins and a purple tip, $\frac{1}{2}$ – $\frac{3}{4}$ as long as the fruiting pedicels, oblong, apex cuspidate, very shallowly toothed; pedicels fairly slender, straight and semi-erect or becoming recurved. Sepals 2.5–3.5 mm long, ovate, lacinate in the proximal half. Corolla pink, 7–11 mm long; the upper and lateral petals blackish-purple at the apex; lower petal c. 0.5 mm wide in the middle portion, only slightly expanded at the apex. Fruit c. 2 mm long, slightly longer than wide, minutely rugulose. Flowering & fruiting Jul.-Mar.

Tas. (BEL, FLI, KIN, TNM, TNS, TSE, TSR); also naturalized in WA, SA, Qld, NSW, Vic.; native to W Europe, widely naturalized. Common in arable paddocks, gardens, roadsides and waste areas. Cleistogamous flowers with corollas up to 8 mm long are common and in the past have been mis-identified as *F. densiflora* or *F. officinalis*.

REFERENCES

- APC (Australian Plant Census) <http://www.chah.gov.au/apc/about-APC.html>
 APNI (Australian Plant Name Index) <http://www.anbg.gov.au/cgi-bin/apni>
 AVH (Australia's Virtual Herbarium) (Council of Heads of Australasian Herbaria) <http://www.anbg.gov.au/avh.html>
 IPNI (International Plant Name Index) <http://www.ipni.org/index.html> or <http://www.us.ipni.org/index.html>
 NVA (Natural Values Atlas) (Department of Primary Industries and Water: Hobart) <http://www.dpiw.tas.gov.au/inter.nsf/WebPages/LJEM-6TV6TV?open>
 Stevens PF (2007) Angiosperm Phylogeny Website. Version 7, May 2006. <http://www.mobot.org/MOBOT/research/APweb>
 Walsh NG, Norton GM (2007) Fumariaceae. *Flora of Australia* **2** 400–412.
 NOTE: Web addresses can and do change: a list of current web addresses will be maintained on the *Flora of Tasmania Online* website [www.tmag.tas.gov.au/floratasmania].

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