



44 * PAPAVERACEAE ¹

Dennis I Morris ²

Annual or perennial herbs, rarely shrubs, with latex generally present in tubes or sacs throughout the plants. Leaves alternate, exstipulate, entire or more often deeply lobed. Flowers often showy, solitary at the ends of the main and lateral branches, bisexual, actinomorphic, receptacle hypogynous or perigynous. Sepals 2–3(4), free or joined, caducous. Petals (0–)4–6(–12), free, imbricate and often crumpled in the bud. Stamens usually numerous, whorled. Carpels 2-many, joined, usually unilocular, with parietal placentae which project towards the centre and sometimes divide the ovary into several chambers, ovules numerous. Fruit usually a capsule opening by valves or pores. Seeds small with crested or small raphe or with aril, with endosperm.

A family of about 25 genera and 200 species; cosmopolitan with the majority of species found in the temperate and subtropical regions of the northern hemisphere. 6 genera and 15 species naturalized in Australia; 4 genera and 9 species in Tasmania.

Papaveraceae are placed in the Ranunculales. Fumariaceae (mostly temperate N Hemisphere, S Africa) and Pteridophyllaceae (Japan) are included in Papaveraceae by some authors: here they are retained as separate families (see Walsh & Norton 2007; Stevens 2007; & references cited therein).

Synonymy: Eschscholziaceae.

Key reference: Kiger (2007).

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

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|----|--|------------------------|
| 1. | Fruit a globular or oblong capsule opening by pores just below the stigmas | 2 |
| 1: | Fruit a linear capsule opening lengthwise by valves | 3 |
| 2. | Stigmas joined to form a disk at the top of the ovary; style absent | 1 Papaver |
| 2: | Stigmas on spreading branches borne on a short style | 2 Argemone |
| 3. | Sepals free; latex orange; stigmas 2 | 3 Glaucium |
| 3: | Sepals joined to form a hood which is pushed off as the petals open; latex watery; stigmas 4 | 4 Eschscholtzia |

1 * PAPAVER

Papaver L., *Sp. Pl.* 1: 506 (1753).

Annual, biennial or perennial herbs, often with colourless latex. Leaves forming a basal rosette in the young plant, alternate on stems, usually lobed or pinnately divided. Flowers solitary on long peduncles, the buds drooping. Sepals 2, free, caducous. Petals 4, free, imbricate, crumpled in the bud. Stamens numerous. Carpels joined; stigmas 4–20, sessile, radial on a disc covering the top of the ovary; placentae immediately below the stigmas; ovules numerous. Fruit a capsule dehiscent by pores below the stigmatic disc. Seeds small.

¹ This work can be cited as: Morris DI (2009) 44 Papaveraceae, version 2009:1. In MF Duretto (Ed.) *Flora of Tasmania Online*. 7 pp. (Tasmanian Herbarium, Tasmanian Museum & Art Gallery: Hobart). ISBN 978-1-921599-04-0 (PDF). www.tmag.tas.gov.au/floratasmania

² (deceased) formerly Tasmanian Herbarium, Tasmanian Museum & Art Gallery, Private Bag 4, Hobart, Tasmania 7001, Australia.

A genus of about 80 species found mostly in temperate regions of the northern hemisphere, several species now widespread as introduced weeds. 6 species naturalized in Australia.

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|----|--|------------------------|
| 1. | Capsule with stiff hairs or bristles | 2 |
| 1: | Capsule glabrous | 3 |
| 2. | Capsule almost globose, bristles spreading | 4 P. hybridum |
| 2: | Capsule clavate, more than 3 times as long as broad, bristles antrorse | 5 P. argemone |
| 3. | Capsule ovoid or oblong, ± twice as long as broad | 4 |
| 3: | Capsule subglobose or broadly turbinate, not much longer than broad | 5 |
| 4. | Peduncle with scattered stiff, spreading bristles | 1 P. aculeatum |
| 4: | Peduncle with soft appressed hairs | 3 P. dubium |
| 5. | Plant hairy, not glaucous, upper leaves pinnately lobed | 2 P. rhoeas |
| 5: | Plant glaucous or sub-glaucous; upper leaves stem-clasping, shallowly lobed or toothed | 6 P. somniferum |

1 * Papaver aculeatum Thunb., *Prodr. Pl. Cap.* 1: 92 (1794)

Bristle Poppy, Native Poppy

Papaver horridum DC., *Syst. Nat. (Candolle)* 2: 79 (1821). *Papaver aculeatum* var. *pusillum* F.Muell., *Pap. Proc. Roy. Soc. Tas.* for 1877: 30 (1877).

Illustrations: Kiger & Walsh, *Fl. Victoria* 3: 68, fig. 15k-l (1996); Jacobs, *Fl. New South Wales* 1, rev. edn: 171 (2000).

Erect annual herb to 40 cm high, ± glaucous; leaves, peduncle and sepals bearing long stiff bristles. Leaves to 15 cm long, pinnately lobed and coarsely toothed; basal leaves contracted to a petiole; stem leaves ± stem-clasping. Petals pale red or brick-red, 12–25 mm long. Anthers yellow. Capsule 12–15 mm long, 6–8 mm diam.; stigmatic rays 4–8. Flowering Sep.-Feb.; fruiting Nov.-Feb.

Tas. (KIN); also naturalized in SA, Qld, NSW, Vic.; native of South Africa. Recorded only from King Is. At one time regarded an Australian native but now considered as introduced.

2 * Papaver rhoeas L., *Sp. Pl.* 1: 507 (1753)

Field Poppy, Corn Poppy, Flanders Poppy

Illustrations: Kiger & Walsh, *Fl. Victoria* 3: 68, fig. 15i-j (1996); Jacobs, *Fl. New South Wales* 1, rev. edn: oppo. 164, pl. 11; 172 (2000); Richardson *et al.*, *Weeds of the South-East, an Identification Guide for Australia* 331 (2006).

An annual or biennial herb; stems, leaves and flower stalks with spreading, rather stiff, hairs; stems erect, branched, 20–80 cm high. Basal leaves petiolate, pinnately lobed, the lobes lanceolate in outline; stem leaves sessile, usually deeply 3-lobed with the central lobe elongate-lanceolate in outline; all lobes cut or toothed. Petals scarlet, often with a dark blotch at the base, 30–45 mm long. Anthers purple. Capsule turbinate but less than twice as long as wide, 10–20 mm long, 6–10 mm wide, glabrous; the stigmatic disk with 8–12 stigmatic rays and lobed margin, the lobes overlapping. Flowering Oct.-Jan.; fruiting Dec.-Feb.

Tas. (FLI, TNM, TNS, TSE); also naturalized in WA, SA, NSW, Vic.; native of Europe, N Africa, SW Asia, widely naturalized, eg. in New Zealand. A weed of arable areas and along roadsides. Cultivated forms with white, pink or red flowers are grown as the ornamental ‘Shirley Poppy’ which does not appear to have escaped from cultivation in Tasmania.

3 * *Papaver dubium* L., *Sp. Pl.* 2: 1196 (1753)*Long-headed Poppy*

Illustrations: Kiger & Walsh, *Fl. Victoria* 3: 68, fig. 15g-h (1996); Jacobs, *Fl. New South Wales* 1, rev. edn: 172 (2000); Richardson *et al.*, *Weeds of the South-East, an Identification Guide for Australia* 331 (2006).

Annual herb, very variable in hairiness; stems erect, branched, to 60 cm high, densely to sparsely hairy, the hairs spreading. Leaves variable in extent of division of the leaf and shape of the lobes of the leaf; basal leaves petiolate, petioles with spreading hairs; stem-leaves \pm stem-clasping, bipinnately toothed or lobed, the lobes ovate to linear with long appressed hairs. Peduncles with hairs spreading basally, becoming appressed-hairy distally. Sepals with spreading, antrorsely curved hairs. Petals brick to salmon-red, sometimes with a black blotch at the base, 20–30 mm long. Anthers purplish. Capsule narrow-turbinate, \pm twice as long as wide, 10–25 mm long, 6–9 mm diam.; stigmatic rays 4–12. Flowering & fruiting Oct.-Jan.

Tas. (BEL, FLI, TNM, TSE); also naturalized in SA, NSW, Vic.; native of Europe, SW Asia, widely naturalized, e.g. in New Zealand. The most common of the weedy poppies and found in arable and urban areas, roadsides, etc at lower altitudes. The more densely hairy plants have leaves with ovate to lanceolate lobes; in plants having deeply divided bipinnate leaves the lobes are \pm linear and have hairs restricted to veins and margins.

4 * *Papaver hybridum* L., *Sp. Pl.* 1: 506 (1753)*Rough Poppy*

Illustrations: Kiger & Walsh, *Fl. Victoria* 3: 68, fig. 15c-d (1996); Jacobs, *Fl. New South Wales* 1, rev. edn: 171 (2000); Richardson *et al.*, *Weeds of the South-East, an Identification Guide for Australia* 331 (2006); Wilson (Ed.), *Fl. Australia* 2: 389, fig. 74e-h (2007).

Annual herb; stems, leaves and pedicels moderately to sparsely hairy, the hairs stiff but fine, spreading in the basal parts of the plant, appressed on distal parts; stems erect, branched, 15–50 cm high. Leaves bipinnately lobed; basal leaves petiolate, lobes obovate-obtuse to narrow lanceolate; stem leaves sessile, lobes narrow-lanceolate to linear. Sepals with antrorsely arcuate hairs. Petals crimson with a dark purple blotch at the base, 18–24 mm long. Anthers yellow. Capsule almost globular, 10–15 mm long, 6–10 mm wide, with stout stiff, spreading, antrorsely arcuate bristles; stigmatic disc small, convex, with 4–8 stigmatic rays. Flowering & fruiting Sep.-Jan. (Jul.).

Tas. (FLI, KIN, TNM, TSE); naturalized in all Australian states; native of Eurasia, N Africa, widely naturalized, e.g. in New Zealand. Found in arable and waste areas and roadside at lower altitudes.

5 * *Papaver argemone* L., *Sp. Pl.* 1: 506 (1753)

Illustrations: Kiger & Walsh, *Fl. Victoria* 3: 68, fig. 15a-b (1996); Jacobs, *Fl. New South Wales* 1, rev. edn: 171 (2000).

Annual herb; stems branched, ascending or erect, 15–45 cm high, with hairs spreading in the basal parts and appressed distally. Leaves bipinnately lobed; basal leaves petiolate; upper leaves sessile; petioles and veins, especially on the lower surface with fine spreading hairs. Peduncles appressed-hairy. Sepals with weak antrorsely arcuate hairs. Petals scarlet with a dark blotch at the base, 20–25 mm long. Anthers yellow. Capsule narrow-turbinate to clavate, more than twice as long as wide, 15–20 mm long, 4–8 mm wide, prominently ribbed, with stout, half-spreading arcuate bristles often restricted to the distal half; stigmatic disc conical, with 4–6 stigmatic rays. Flowering & fruiting Oct.-Jan.

Tas. (TNS^o, TNM, TSE); also naturalized in SA, NSW, Vic.; native of Europe, SW Asia, widely naturalized, e.g. in New Zealand. Weed of arable and waste areas, and roadsides at lower altitudes.

6 * *Papaver somniferum* L., *Sp. Pl.* 1: 508 (1753)*Opium Poppy*

Illustrations: Kiger & Walsh, *Fl. Victoria* 3: 68, fig. 15e-f (1996); Spencer, *Horticultural Flora of South-eastern Australia* 1: 83 (1997).

Glaucous annual, glabrous to setose; stems erect, 30–60(–150) cm high. Leaves oblong 4–15(–20) cm long, 2–8(–12) cm wide, shallowly or deeply lobed or toothed; lower leaves cuneate at the base or narrowing to a short petiole; stem leaves amplexicaul. Peduncle up to 30 cm long, glabrous or sparingly bristly. Sepals glabrous or sparingly bristly. Petals white, pink or lilac, with a dark blotch at the base, 25–50 mm long. Anthers yellow. Capsule broadly obovoid to globose, glaucous, 10–40 mm long and wide; stigmatic rays 7–15, marginal lobes of the disc antrorsely curved at maturity. Flowering & fruiting (Apr.) Oct.–Jan.

Tas. (BEL, KIN, TNM, TNS, TSE); also naturalized in WA, SA, Qld, NSW, Vic.; native of Eurasia, widely naturalized, e.g. in New Zealand. An ornamental form of *P. somniferum* in which the stamens are petaloid, giving the flower a peony-like appearance has been referred to as *P. paeoniaeflorum* Hort. It has been grown for many years and may still be found in Tasmanian gardens.

In Tasmania 2 subspecies occur.

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| 1. | Leaves shallowly lobed, obtusely dentate, glabrous; capsule 20–40 mm diam. | 6a subsp. somniferum |
| 1: | Leaves more deeply lobed, acutely dentate, the teeth bristle-tipped, midrib on abaxial surface with scattered stiff bristles; capsule 10–15 mm diam. | 6b subsp. setigerum |

6a * *Papaver somniferum* L. subsp. *somniferum*

Illustration: Jacobs, *Fl. New South Wales* 1, rev. edn: 172 (2000).

Stems to 150 cm high. Leaves glabrous, bluntly dentate or shallowly lobed. Capsule 20–40 cm diam., usually indehiscent (in Tas.); stigmatic rays 8–12(–15).

Tas. (BEL, KIN, TNM, TNS, TSE); also naturalized in Vic.; native of Europe, Asia, widely naturalized, e.g. in New Zealand. Occasional in arable areas and on roadsides. *Papaver somniferum* subsp. *somniferum* is grown commercially in Tasmania for processing by the pharmaceutical industry. The seed of the poppy is an important by-product and strains selected for the industry are indehiscent in order to reduce seed loss. Isolated plants may appear in paddocks in the year following poppy crops and on roadsides from seed dropped by transport travelling to the processing plants.

6b * *Papaver somniferum* subsp. *setigerum* (DC.) L. Corb., *Nouv. Fl. Normandie* 30 (1894)

Papaver setigerum DC., *Fl. Franc. (DC. & Lamarck)*, ed. 3., 6: 585 (1815).

Illustrations: Jacobs, *Fl. New South Wales* 1, rev. edn: 172 (2000); Richardson *et al.*, *Weeds of the South-East, an Identification Guide for Australia* 332 (2006).

Stems up to 60 cm high. Leaves fairly deeply pinnately lobed and acutely dentate, the teeth bristle-tipped, midrib setose on the abaxial surface. Capsule 10–15 mm diam., dehiscent.

Tas. (BEL, KIN, TNM, TNS, TSE); also naturalized in WA, SA, Qld NSW, Vic.; native in W Mediterranean, widely naturalized, e.g. in New Zealand. Weed of arable and waste areas and roadsides, occasionally occurring as a contaminant in commercial crops.

2 * ARGEMONE

Argemone L., *Sp. Pl.* 1: 503 (1753).

Herbs with yellow latex. Leaves prickly, lobed. Sepals 2–3, with a horn-like appendage below the apex, partly joined, caducous. Petals 4–6, free. Stamens numerous, whorled. Carpels joined; ovary unilocular; stigmatic branches free, spreading, each stigma in a depression along the centre of a branch. Capsule with stiff bristles, opening by valves below the apex.

A genus of 32 species of the Americas and Hawaii; 3 species naturalized in Australia.

Key reference: Ownbey (2007).

1 * *Argemone ochroleuca* Sweet, *Brit. Fl. Gard.* 3, t. 242 (1828) subsp. **ochroleuca** *Mexican Poppy*

Argemone mexicana L. var. *ochroleuca* (Sweet) Lindl., *Edward's Bot. Reg.* 16: t. 1343 (1830). *Argemone mexicana sensu* WM Curtis & DI Morris, *The Student's Flora of Tasmania* 1, rev. edn: 28 (1975), *auct. non* L. (1753).

Illustrations: Kiger & Walsh, *Fl. Victoria* 3: 68, fig. 15m (1996); Jacobs, *Fl. New South Wales* 1, rev. edn: oppo. 164, pl. 11; 170–171 (2000); Richardson *et al.*, *Weeds of the South-East, an Identification Guide for Australia* 330 (2006), as *A. ochroleuca* var. *ochroleuca*.

Erect annual, glabrous; stems branching 40–80 cm high. Leaves alternate, pale green with white mottling, lobed, the lobes and veins spinous. Petals pale yellow, c. 2.5 cm long. Capsule ovoid-oblong, 2.5–3.5 cm long, with stiff bristles; stigmatic branches borne on a short style. Flowering Jun.–Jan.; fruiting Jan.–Feb.

Tas. (TSE); naturalized in all Australian states; native of Mexico, naturalized in New Zealand. Recorded only twice from the Hobart area and doubtfully naturalized.

3 * GLAUCIUM

Glaucium Mill., *Gard. Dict. Abr.*, ed. 4, 547 (1754).

Annual, biennial or perennial herbs with yellow latex. Leaves pinnately lobed or divided, often glaucous. Flowers large, solitary, axillary on short pedicels. Receptacle hypogynous. Sepals 2, caducous. Petals yellow to red, 4, free, rolled in the bud. Stamens numerous. Carpels 2, joined; stigma 2-lobed, the lobes over the placenta which meet in the centre of the ovary to form a spongy partition bearing numerous ovules. Fruit a linear capsule opening from the top almost to the base by 2 valves, leaving the seeds adhering to the placenta.

A genus of about 25 species, chiefly of the Mediterranean and south-western Asia; 2 species naturalized in Australia.

1 * *Glaucium flavum* Crantz, *Stirp. Austr.* edn. 1, 2: 133 (1763) *Yellow Horned Poppy, Horned Poppy*

Chelidonium glaucium L., *Sp. Pl.* 1: 506 (1753); *Glaucium luteum* Scop., *Fl. Carniol.*, ed. 2, 1: 369 (1771). *Glaucium leiocarpum* Boiss., *Fl. Orient. [Boisser]* 1: 122 (1867); *G. flavum* var. *leiocarpum* (Boiss.) Stoj. & Stef., *Fl. Bulg. [Stojanov & Stefanoff]* 1: 471 (1924).

Illustrations: Kiger & Walsh, *Fl. Victoria* 3: 68, fig. 15o (1996); Spencer, *Horticultural Flora of South-eastern Australia* 1: 79 (1997); Jacobs, *Fl. New South Wales* 1, rev. edn: 170 (2000); Richardson *et al.*, *Weeds of the South-East, an Identification Guide for Australia* 330 (2006); Wilson (Ed.), *Fl. Australia* 2: 389, fig. 74a-d (2007).

Erect biennial or perennial; stems branched, 30–100 cm high, glabrous. Rosette leaves petiolate, lyrate-pinnatifid, with a dense indumentum of multicellular crisped hairs; stem leaves amplexicaul, sinuately lobed, rather thick, lower leaves with a sparse indumentum of multicellular crisped hairs, upper leaves glabrescent. Flowers solitary on short thick pedicels. Sepals with sparse multicellular crisped hairs. Petals yellow with a darker basal blotch, c. 3.5 cm long, 4 cm wide. Capsule 15–30 mm long, arcuate, papillose-tuberculate. Flowering Nov.-Mar.; fruiting Dec.-Mar.

Tas. (FLI, TSE); also naturalized in SA, NSW, Vic.; native of Mediterranean, E Europe, naturalized in New Zealand. Weed of coastal sands.

4 * **ESCHSCHOLZIA**

Eschscholzia Cham., *Horae Phys. Berol.* 73, t. 15 (1820).

Annual or perennial herbs, glabrous and glaucous, with watery sap. Leaves alternate or, when subtending a flower, opposite, petiolate, much dissected, the ultimate segments linear. Flowers solitary or in leafy cymes. Receptacle perigynous, forming a conspicuous ledge around the ovary. Sepals 2, united into a conical hood (calyptra) which is pushed off by the expanding petals. Petals 4, free. Stamens numerous, with short filaments and linear anthers. Ovary linear, unilocular; style short; stigmatic lobes 2–6, linear, unequal, divergent. Capsule linear, opening from below by two valves.

A genus of 12 species in western North America; 1 species naturalized in Australia.

1 * *Eschscholzia californica* Cham., *Horae Phys. Berol.* 74, t. 15 (1820)

Californian Poppy

Illustrations: Morley & Toelken (Eds), *Flowering Plants in Australia* 57, fig. 26a-b (1983); Kiger & Walsh, *Fl. Victoria* 3: 68, fig. 15p (1996); Spencer, *Horticultural Flora of South-eastern Australia* 1: 78 (1997); Jacobs, *Fl. New South Wales* 1, rev. edn: 170 (2000); Richardson *et al.*, *Weeds of the South-East, an Identification Guide for Australia* 330 (2006); Wilson (Ed.), *Fl. Australia* 2: 398, fig. 75d-g (2007).

Erect, often many-stemmed, annual or perennial, 20–40 cm high. Leaves: petiole longer than lamina; lamina pinnatisect. Petals pale yellow to orange, darker at the base, 20–40 mm long. Capsule 7–10 cm long, ribbed. Seeds black, spherical, reticulate. Flowering & fruiting (Sep.) Oct.-Mar.(-May).

Tas. (FLI, TNM, TSE, TSR); also naturalized in WA, SA, Qld, NSW, Vic.; native of North America, naturalized in New Zealand. Found in disturbed areas.

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>
- Kiger RW (2007) Papaveraceae (less *Argemone*). *Flora of Australia* **2** 386–389, 392–400.
- NVA (Natural Values Atlas) (Department of Primary Industries and Water: Hobart) <http://www.dpiw.tas.gov.au/inter.nsf/WebPages/LJEM-6TV6TV?open>
- Ownby GB (2007) *Argemone* (Papaveraceae). *Flora of Australia* **2** 390–391.
- 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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