

FAMILY—COMPOSITAE (ASTERACEAE)

(Prepared by D. A. Cooke, except certain genera as noted.)

Herbs, undershrubs and shrubs, glabrous or with glandular and/or non-glandular hairs, often aromatic; leaves alternate or opposite, simple to variously compound, lacking stipules; inflorescence a capitulum developing from the outside inwards, surrounded by an involucre; capitula solitary or aggregated in loose or dense cymose groups or in compound heads; florets more or less sessile on a receptacle, sometimes each subtended by a scale, epigynous, bisexual or unisexual, rarely in unisexual capitula; calyx modified as a pappus consisting of bristles, scales, a scarious cup or ring or absent; corolla sympetalous, either actinomorphic and *tubular* with a limb of 3–5 valvate lobes, or zygomorphic with the lobes united on one side as a flat *ligule*, or the outer female florets *filiform* and tapered to a minutely toothed apex or lacking a corolla; stamens as many as the lobes, alternating with them and inserted on the tube; anthers linear, basifixed, 2-celled, introrse, usually connate or cohering to form a cylinder which is filled with pollen when the floret opens; style with 2 stigmatic branches, in the bisexual florets with hairs or appendages which lift the pollen out of the floret, in sterile florets unbranched, in female florets without appendages; ovary inferior, 1-celled; ovule solitary, anatropous, on a basal placenta; fruit an achene, often with a persistent pappus; seed non-endospermic, with a straight embryo; testa thin, often adhering to the pericarp. The largest angiosperm family, with about 1,100 genera and 25,000 species worldwide; about 200 genera native to Australia.

The *receptacle* of the capitulum is the dilated axis or peduncle apex, in shape a disc, hemisphere or cone; in a compound head small capitula are aggregated on an axis called a *common receptacle*, which may be of various shapes.

The involucre consists of 1 or more rows of bracts, usually crowded, enveloping the capitulum like a calyx around a flower. The outer bracts may be leaf-like, but usually all involucre bracts are smaller

than the leaves and differ from them in shape and texture. In some Australian genera, (the 'everlastings'), the bracts have conspicuous white or coloured papery appendages analogous to the rays of a radiate capitulum.

A capitulum containing only bisexual flowers is *homogamous*; a *heterogamous* capitulum has the outer florets female or neuter and sterile, and the inner ones bisexual or functionally male with reduced style branches and abortive achenes. If all florets are tubular or the outer ones filiform or lacking corollas, the capitulum is *discoid*; if the outer, or *ray*, florets are conspicuously ligulate, the capitulum is *radiate*. In a *ligulifloral* capitulum all the florets are ligulate.

The bristles forming the pappus may be simple or smooth, barbellate, with more or less microscopic barbs, or plumose, with the barbs developed into secondary hairs. The pappus may be raised above the seed-containing body of the achene on a rigid beak.

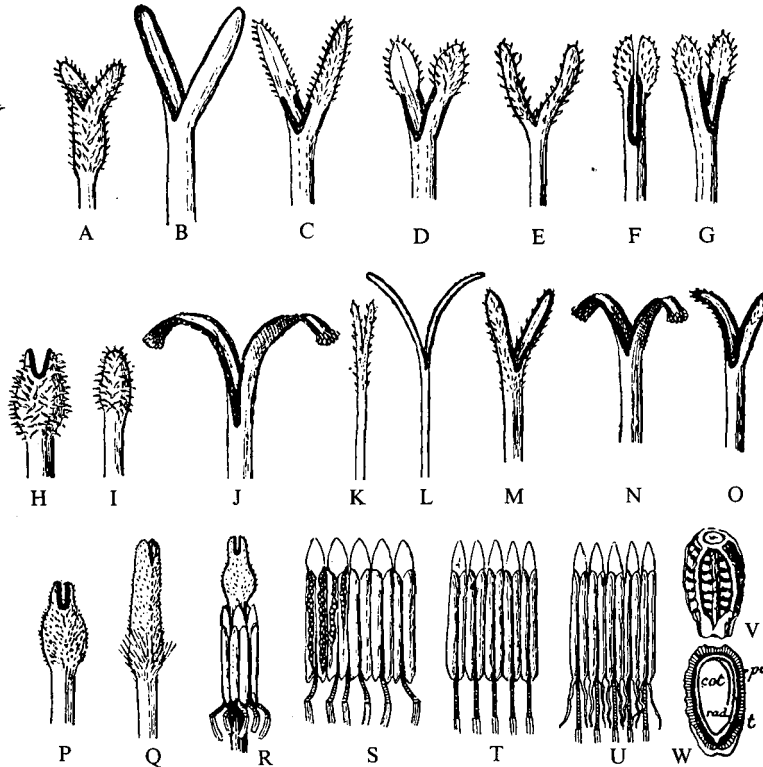


Fig. 641—Style branches. A, *Erodiophyllum elderi* (sterile disk floret); B, *E. elderi* (ray floret); C, *Brachycome trachycarpa* (fertile disk floret); D, *Erigeron sessilifolius* (fertile disk floret); E, *Lagenifera stipitata* (sterile disk floret); F-G, *Olearia ferresii* (fertile disk floret); H, *Epaltes australis* (fertile floret); I, *Epaltes cunninghamii* (sterile floret); J, *Ixiolaena supina* (fertile floret); K, *Streptoglossa cylindriceps* (sterile disk floret); L, *S. cylindriceps* (ray floret); M, *Dittrichia graveolens* (fertile disk floret); N, *Flaveria australasica* (fertile disk floret); O, *Sigesbeckia orientalis* (fertile disk floret); P, *Cymbonotus preissianus* (fertile disk floret); Q, *Centaurea calcitrapa* (fertile floret). Stamens. R, *Cymbonotus preissianus* anther forming a tube around the style; S, *C. preissianus* the anther tube opened out to show acute (shortly sagittate) anthers; T, *Ixiochlamys cuneifolia* anthers obtuse at base; U, *Ixiolaena tomentosa* anthers tailed at base. V, *Cymbonotus preissianus* achene and in longitudinal section; pc, pericarp; t, testa; cot, cotyledons; rad, radicle.

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| 1. All florets ligulate; plants usually with milky latex | GROUP A. |
| 1. At least the inner florets of each capitulum tubular; milky latex absent. | |
| 2. Capitula unisexual; female capitula forming burrs which fall intact with the achenes | GROUP B. |
| 2. Capitula bisexual or, if rarely unisexual, the female capitula not forming burrs but shedding the ripe achenes. | |
| 3. Some or all involucre bracts with pungent terminal spines | GROUP C. |
| 3. All involucre bracts without terminal spines. | |
| 4. Capitula sessile on a common receptacle and surrounded by a common involucre or so crowded as to be indistinct without dissection, forming a compound head | GROUP D. |
| 4. Capitula separate, if ever in a dense inflorescence then on distinct pedicels, without a common involucre. | |
| 5. Leaves mostly opposite (those near the summit of flowering stems often alternate) | GROUP E. |
| 5. Leaves mostly alternate or all radical. | |
| 6. Capitula radiate, with 1-3 series of ligulate florets surrounding the inner tubular florets. | |
| 7. Pappus at least as long as the ripe achene, usually of bristles, rarely of large scales or awns | GROUP F. |
| 7. Pappus much shorter than the ripe achene, of scales, awns, a minute crown or absent | GROUP G. |
| 6. Capitula discoid, without ligulate florets. | |
| 8. Involucre bracts uniseriate or almost so, equal, never imbricate (always herbaceous) | GROUP H. |
| 8. Involucre bracts 2-many-seriate, usually unequal, imbricate (herbaceous, scarious, cartilaginous or papery). | |
| 9. Shrubs with persistent woody stems | GROUP I. |
| 9. Annual or perennial herbs, rarely subshrubby with a short woody base. | |
| 10. Pappus absent or a vestigial scarious cup | GROUP J. |
| 10. Pappus of bristles or scales at least subequal to the achene | GROUP K. |
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GROUP A | |
| 1. Ligules blue to purple. | |
| 2. Basal leaves absent; plant lacking milky latex | MINURIA 26. |
| 2. Basal leaves forming a conspicuous cluster or rosette; plant with milky latex. | |
| 3. Basal leaves runcinate; pappus of scales | CICHORIUM 122. |
| 3. Basal leaves entire; pappus of plumose bristles | TRAGOPOGON 136. |
| 1. Ligules yellow. | |
| 4. Leaves basal in a flat rosette; stems leafless or almost so, often reduced to unbranched scapes or absent. | |
| 5. Capitula sessile at ground level; flowering stems absent | CREPIS 123. |
| 5. Capitula borne above ground level on flowering stems. | |
| 6. Flowering stems branched, with scale-leaves. | |
| 7. Capitula sessile in the axils of reduced leaves along the branches of a tough stem | CHONDRILLA 121. |
| 7. Capitula terminal on the corymbose branches of a weak hollow scape | HYPOCHOERIS 125. |
| 6. Flowering stems reduced to naked unbranched scapes. | |
| 8. Pappus of the outer achenes reduced to a scarious crown c. 1 mm long; forked hairs present on leaves | LEONTODON 128. |
| 8. Pappus of all achenes similar, consisting of bristles over 1 mm long; forked hairs absent. | |
| 9. Achenes beakless; pappus of acuminate scales produced into bristles | MICROSERIS 129. |
| 9. All or most achenes with filiform beaks; pappus of bristles. | |

10. Receptacle with long scarious scales; leaves sinuate-dentate to pinnatifid HYPOCHOERIS 125.
 10. Receptacle naked; leaves runcinate TARAXACUM 134.
4. Leaves basal and cauline; stems leafy.
11. Pappus of the outer achenes reduced to a minute crown.
 12. Outer bracts of involucre minute, appressed HEDYPNOIS 124.
 12. Outer bracts of involucre large, subulate, upcurved and loosely spreading TOLPIS 135.
11. Pappus of all achenes similar, never crown-like.
13. Involucral bracts uniseriate, connate below UROSPERMUM 137.
 13. Involucral bracts 2-6-seriate, free.
 14. Pappus absent LAPSANA 127.
 14. Pappus of hairs or bristles.
 15. Achenes beaked.
 16. Capitula mostly axillary and subsessile along the branches of the panicle LACTUCA 126.
 16. Capitula all terminal CREPIS 123.
 15. Achenes beakless.
 17. Plant prickly with stiff mostly hooked hairs PICRIS 130.
 17. Plant glabrous or with soft minute hairs.
 18. Pappus of plumose bristles SCORZONERA 132.
 18. Pappus of fine simple to barbellate hairs.
 19. Ligules purplish at the base; achenes tuberculate REICHARDIA 131.
 19. Ligules pure yellow; achenes not tuberculate.
 20. Achenes terete CREPIS 123.
 20. Achenes flattened SONCHUS 133.
- GROUP B**
1. Female capitula 1-flowered; involucral bracts of the male capitula connate AMBROSIA 1.
 1. Female capitula 2-flowered; involucral bracts of the male capitula free XANTHIUM 13.
- GROUP C**
1. Leaves without spines.
 2. Capitula discoid; involucral bracts closely imbricate CENTAUREA 113.
 2. Capitula radiate; involucral bracts leaf-like PALLENIS 62.
1. Leaves with spine-tipped lobes or a spiny margin.
 3. Pappus of free scales.
 4. Pappus scales entire, minute BERKHEYA 107.
 4. Pappus scales fringed, the longest one 5-10 mm long CARTHAMUS 112.
3. Pappus of bristles connate in a ring at the base.
 5. Involucral bracts each terminating in an appendage with several pinnately arranged spines PINOMON 118.
 5. Involucral bracts each terminating in a single spine.
 6. Leaves variegated with a white net-veined pattern SILYBUM 119.
 6. Leaves never variegated.
 7. Receptacle naked, honeycombed-pitted ONOPORDUM 117.
 7. Receptacle densely hairy.
 8. Pappus bristles barbellate CARDUUS 111.
 8. Pappus bristles plumose.
 9. Receptacle and involucral bract bases cartilaginous .. CIRSIUM 114.
 9. Receptacle and involucral bract bases fleshy CYNARA 116.
- GROUP D**
1. Leaves opposite FLAVERIA 4.
 1. Leaves all or mostly alternate.
 2. Branches winged; leaves mostly serrulate.
 3. Pappus of barbellate bristles PTEROCAULON 69.
 3. Pappus absent SPHAERANTHUS 73.
 2. Branches terete; leaves entire.
 4. Common involucre of white or scarious bracts.

5. Compound heads solitary, discoid, with a flat common receptacle MYRIOCEPHALUS 61.
5. Compound heads grouped in globose clusters; common receptacle minute BASEDOWIA 37.
4. Common involucre of green leaves or absent.
6. Capitula heterogamous, the outer florets female, with filiform corollas, the inner ones bisexual and tubular.
7. Leaves petiolate STUARTINA 75.
7. Leaves sessile.
8. Inner florets sterile; pappus absent EVAX 49.
8. Inner florets fertile; pappus of bristles.
9. Capitular involucre bracts tapered into awns c. 1 mm long FILAGO 50.
9. Capitular involucre bracts with scarios awnless apices.
10. Compound heads manifestly terminal GNAPHALIUM 51.
10. Compound heads appearing axillary, each overtopped by a branch arising immediately below LOGFIA 59.
6. Capitula homogamous.
11. Capitular involucre bracts with conspicuous white or pink petaloid laminae CEPHALIPTERUM 41.
11. Capitular involucre bracts herbaceous or with inconspicuous scarios-hyaline apices.
12. Inflorescences each sessile at ground level in a rosette of leaves.
13. Pappus of 4 or 5 stiff bristles connate at the base ACTINOBOLE 32.
13. Pappus absent CHTHONOCEPHALUS 43.
12. Inflorescences terminal on aerial stems or scapes.
14. Achene attached obliquely to the floret; pappus an asymmetric scarios scale PLEUROPAPPUS 63.
14. Achene attached symmetrically to the floret; pappus symmetric or absent.
15. Compound head more than twice as long as wide.
16. Capitula subtended by scarios-hyaline bracts similar to the capitular involucre bracts; achenes brown ANGIANTHUS 34.
16. Capitula subtended by broad rounded scarios bracts herbaceous at the base, dissimilar to the capitular involucre bracts; achenes purplish CHRYSOCORYNE 42.
15. Compound head up to twice as long as wide.
17. Pappus absent.
18. Common involucre absent; florets 20-40 per capitulum ERIOCHLAMYS 48.
18. Common involucre present; florets 1 or 2 per capitulum.
19. Florets 2 per capitulum, mostly 3-merous ANGIANTHUS 34.
19. Floret 1 per capitulum, 5-merous.
20. Leaves densely hairy GNEPHOSIS 52.
20. Leaves hairy at the base only POGONOLEPIS 67.
17. Pappus present, consisting of a scarios cup or of bristles.
21. Pappus much shorter than the corolla GNEPHOSIS 52.
21. Pappus subequal to the corolla.
22. Compound heads overtopped by the surrounding leaves BLENNOSPORA 38.
22. Compound heads not overtopped.
23. Achenes glabrous to papillose CALOCEPHALUS 39.
23. Achenes sericeous CRASPEDIA 44.
- GROUP E
1. Involucre bracts scarios.
2. Pappus of scales or absent.
3. Pappus absent EPALTES 47.

3. Pappus of large obovate scales RUTIDOSIS 71.
2. Pappus of bristles.
4. Capitula sessile in the forks of dichotomous branches CHONDROPYXIS 94.
4. Capitula terminal on peduncles or branches.
5. Pappus bristles barbellate HELICHRYSUM 54.
5. Pappus bristles plumose HELIPTERUM 55.
1. Involucral bracts herbaceous.
6. Involucre narrow-cylindric, uniseriate, with bracts fused for almost their entire length TAGETES 14.
6. Involucre campanulate to hemispherical, 2- or 3-seriate, with bracts fused near the base only or free.
7. Capitula homogamous, crowded in dense panicles AGERATINA 120.
7. Capitula heterogamous, never crowded.
8. Disk florets sterile; receptacle naked MINURIA 26.
8. Disk florets fertile; receptacle with scales or hairs.
9. Leaves pale-grey beneath, green above VERBESINA 11.
9. Leaves concolourous, green.
10. Capitula axillary ECLIPTA 3.
10. Capitula terminal.
11. Pappus of the disk achenes over 1.5 mm long, of long scales or spines.
12. Ligules 2-3 cm long, yellow with a purple base GAILLARDIA 5.
12. Ligules 1-3 mm long, white, or absent.
13. Pappus of 2 or 3 barbed spines BIDENS 2.
13. Pappus of numerous lanceolate fimbriate scales GALINSOGA 6.
11. Pappus of the disk achenes much less than 1 mm long or absent.
14. Ligules 1-2 mm long; achenes terete SIGESBECKIA 10.
14. Ligules 7-30 mm long; achenes flattened.
15. Receptacular scales membranous; disk florets brown HELIANTHUS 8.
15. Receptacular scales herbaceous; disk florets yellow WEDELIA 12.
- GROUP F**
1. Involucral bracts not imbricate, in 1 series, sometimes with a few much smaller bracteoles at the base of the involucre.
2. Pappus a mass of tangled woolly hairs EURYOPS 84.
2. Pappus a tuft of erect silky bristles SENECIO 85.
1. Involucral bracts imbricate in 2 to several unequal series.
3. Fruiting heads burr-like; pappus of stiff barbed awns CALOTIS 18.
3. Fruiting head never burr-like; pappus of scales or fine soft bristles.
4. Pappus of scales or of scales and bristles.
5. Leaves densely white-tomentose, mostly pinnately dissected ARCTOTIS 106.
5. Leaves green, glabrous to pubescent, entire.
6. Leaves terete, basal, glabrous ACHNOPHORA 15.
6. Leaves flat, cauline, pubescent DIMORPHOCOMA 97.
4. Pappus of bristles only.
7. Involucral bracts with broad scarios laminae, the inner ones raised on narrower green claws; ligules deeply 3-5-lobed PODOLEPIS 65.
7. Involucral bracts herbaceous, with narrow scarios-hyaline margins, never clawed; ligules entire or subentire.
8. Ligules and disk florets all yellow.
9. Achenes beaked IXIOCHLAMYS 23.
9. Achenes beakless.
10. Dwarf shrub with terete semisucculent leaves KIPPISTIA 24.
10. Herbs with flat non-succulent leaves.
11. Annual, sticky and aromatic due to glandular hairs; anthers tailed at the base DITTRICHIA 46.
11. Perennial with rhizomes, non-glandular; anthers obtuse at the base SOLIDAGO 29.
8. Ligules white to blue or pink; disk florets a contrasting colour, usually yellow or violet.

12. Disk florets sterile, producing abortive achenes MINURIA 26.
 12. Disk achenes fertile.
 13. Shrubs or undershrubs with woody stems.
 14. Ray florets uniseriate OLEARIA 27.
 14. Ray florets 2- or 3-seriate VITTADINIA 30.
 13. Herbs.
 15. Involucral bracts a dark brown-purple, with white margins DICHROMOCHLAMYS 20.
 15. Involucral bracts green.
 16. Capitula numerous in panicles.
 17. Plant glabrous ASTER 16.
 17. Plant pubescent to scabridulous CONYZA 19.
 16. Capitula solitary or in loose groups of 2-4.
 18. Ripe achenes c. 1 mm long; pappus 1-2 mm long; style branches with triangular appendages ERIGERON 21.
 18. Ripe achenes 2.5-10 mm long; pappus 3.5-9 mm long; style branches with linear-subulate appendages VITTADINIA 30.

GROUP G

1. Achenes drupe-like, with an outer fleshy layer; shrub with an erect woody trunk CHRYSANTHEMOIDES 81.
 1. Achenes dry; herbs or weakly woody undershrubs.
 2. Pappus of minute barbed awns.
 3. Achenes broadly winged, hairy CALOTIS 18.
 3. Achenes wingless, linear, glabrous GLOSSOGYNE 7.
 2. Pappus of minute bristles or scales, sometimes fused into a crown or absent.
 4. Leaves grey-white tomentose beneath, less hairy and more or less green above.
 5. Achenes glabrous; pappus absent CYMBONOTUS 108.
 5. Achenes densely hairy; pappus of minute scales.
 6. Involucral bracts free ARCTOTHECA 105.
 6. Involucral bracts partially connate GAZANIA 109.
 4. Leaves concolourous, green.
 7. Receptacle with large bract-like scales subtending the disk florets
 8. Capitula numerous in dense compound corymbs ACHILLEA 86.
 8. Capitula solitary or few in loose cymes.
 9. Receptacular scales persistent, forming an accrescent hard fruiting head ERODIOPHYLLUM 22.
 9. Receptacular scales deciduous.
 10. Ligules yellow; achenes flattened, scarious-winged ANACYCLUS 87.
 10. Ligules white; achenes 3-5-angled obovoid, wingless.
 11. Annuals; receptacular scales subulate ANTHEMIS 88.
 11. Perennial; receptacular scales broadly oblong CHAMAEMELUM 93.
 7. Receptacle naked.
 12. Disk florets sterile, not producing achenes.
 13. Achenes all similar, wingless.
 14. Achenes terete, beakless; leaves cauline CALOTIS 18.
 14. Achenes flattened, beaked; leaves basal LAGENIFERA 25.
 13. Achenes polymorphic or broadly scarious-winged.
 15. Ray florets 2- or 3-seriate CALENDULA 80.
 15. Ray florets uniseriate OSTEOSPERMUM 83.
 12. Disk florets fertile.
 16. Shrub ARGYRANTHEMUM 89.
 16. Annual or perennial herbs.
 17. Receptacle flat; involucre uniseriate DIMORPHOTHECA 82.
 17. Receptacle steeply convex to conical; involucre 2-4-seriate.

18. Involucral bracts with very narrow scarious-hyaline margins; plant sometimes with sparse glands but never aromatic BRACHYCOME 17.
18. Involucral bracts with thinly scarious expanded obtuse apices; plant aromatic with chamomile-like odour.
19. Leaves serrate or dentate LEUCANTHEMUM 100.
19. Leaves pinnatisect to tripinnatisect.
20. Ligules yellow; ray achenes narrowly 3-winged, disk achenes mostly 1-winged CHRYSANTHEMUM 95.
20. Ligules white; all achenes similar, wingless, ribbed.
21. Annual; capitula in loose cymes MATRICARIA 101.
21. Perennial with rhizomes; capitula in dense compound corymbs TANACETUM 104.
- GROUP H**
1. Pappus of bristles or awned scales, longer than the achene.
2. Capitula mostly solitary or paired in leaf axils; pappus of awned scales QUINETIA 70.
2. Capitula in a terminal panicle; pappus of bristles SENECIO 85.
1. Pappus absent or shorter than the achene.
3. Capitula heterogamous, axillary or apparently so in a leafy inflorescence.
4. Annual; achenes with wings produced into horn-like apical appendages CERATOGYNE 92.
4. Perennial with rhizome; achenes without wings or appendages IVA 9.
3. Capitula homogamous, terminal and solitary.
5. Achene with an apical cup SCYPHOCORONIS 72.
5. Achene with an apical beak.
6. Involucral bracts 6-18; achene beak straight MILLOTIA 60.
6. Involucral bracts 3-5; achene beak curved TOXANTHES 76.
- GROUP I**
1. Branches spine-tipped ACANTHOCLADIUM 31.
1. Spines absent.
2. Pappus absent.
3. Leaves pinnately dissected; capitula heterogamous ARTEMISIA 90.
3. Leaves entire; capitula homogamous.
4. Involucral bracts all pale, scarious, without petaloid laminae HAECKERIA 53.
4. Involucral bracts greenish, the inner series with conspicuous white spreading petaloid laminae IXODIA 57.
2. Pappus present, of bristles.
5. Pappus bristles plumose; plant dioecious CRATYSTYLIS 45.
5. Pappus bristles simple to barbellate; plant never dioecious.
6. Capitula heterogamous, with the outer female florets surrounding bisexual or functionally male inner florets.
7. Female florets uniseriate; inner florets fertile, producing achenes OLEARIA 27.
7. Female florets multiseriate; inner florets functionally male, not producing achenes PLUCHEA 64.
6. Capitula homogamous.
8. Receptacle naked HELICHRYSUM 54.
8. Receptacle with scarious scales.
9. Leaf apex bilobed HELICHRYSUM 54.
9. Leaf apex entire, acute CASSINIA 40.
- GROUP J**
1. Stems with decurrent wings; all or the inner involucral bracts with white petaloid laminae.
2. Plant non-glandular, with whitish tomentum; white bract laminae many-seriate AMMOBIUM 33.
2. Plant glandular-viscid, glabrous; white bract laminae uniseriate IXODIA 57.
1. Stems wingless; involucral bracts without petaloid laminae.

3. Leaves simple, entire to dentate.
4. Leaves all in a basal rosette SOLENOGYNE 28.
4. Leaves cauline.
5. Capitula solitary on terminal peduncles COTULA 96.
5. Capitula either in terminal panicles or axillary and almost sessile.
6. Achenes with 4 obtuse pubescent ribs CENTIPEDA 91.
6. Achenes finely 8-10-ribbed, glabrous except for a few bristles at the base EPALTES 47.
3. Leaves pinnately dissected.
7. Florets raised above the receptacle on minute pedicels which persist when the achenes have fallen COTULA 96.
7. Florets sessile on the receptacle, which appears slightly pitted when the achenes have fallen.
8. Capitula sessile among the leaves; achenes with a pungent apical spine SOLIVA 103.
8. Capitula pedunculate; achenes spineless.
9. Capitula solitary or in corymbs of 2 or 3.
10. Plant subglabrous; florets 4-merous MATRICARIA 101.
10. Plant greyish-tomentose; florets 5-merous PENTZIA 102.
9. Capitula numerous in dense compound corymbs.
11. Leaves 2-4 cm long; florets all bisexual, 4-merous PENTZIA 102.
11. Leaves 5-20 cm long; inner florets bisexual, 5-merous; outer florets female, 3-merous, rarely absent TANACETUM 104.
- GROUP K**
1. Some leaves serrate to deeply dissected; corollas pink to purple.
2. Capitula numerous in dense panicles; fertile achenes lacking a pappus EPALTES 47.
2. Capitula solitary or in loose cymes of 2-5; fertile achenes with a pappus.
3. Cauline leaves all pinnatisect with narrow-linear segments CRUPINA 115.
3. Cauline leaves dentate to entire.
4. Involucres ovoid, the inner bracts with fringed apices far exceeded by the florets ACROPTILON 110.
4. Involucres hemispherical to broadly campanulate, the inner bracts with entire apices subequal to the florets.
5. Inner florets functionally male, with abortive achenes PLUCHEA 64.
5. Inner florets fertile STREPTOGLOSSA 74.
1. All leaves entire; corollas orange, yellow or white.
6. Involucral bracts uniformly scarios to herbaceous, never clawed.
7. Stemless plant with linear leaves and capitula sessile at ground level ISOETOPSIS 99.
7. Capitula on stems above ground level; leaves never linear.
8. Involucral bracts linear, cartilaginous-herbaceous, with distinct scarios apices IXIOLAENA 56.
8. Involucral bracts not as above.
9. All florets tubular, bisexual.
10. Pappus bristles barbellate APALOCHLAMYS 35.
10. Pappus bristles plumose.
11. Involucre scarios HELIPTERUM 55.
11. Involucre herbaceous PODOTHECA 66.
9. Outer florets filiform, female.
12. Inner florets sterile with abortive achenes; pappus of outer fertile achenes of large scales ELACHANTHUS 98.
12. All florets producing achenes; pappus of capillary bristles.
13. Capitula pedunculate in a large panicle; involucral bracts herbaceous CONYZA 19.
13. Capitula sessile to subsessile in dense clusters; involucral bracts scarios.
14. Capitula green to brown or stramineous GNAPHALIUM 51.

14. Capitula yellow PSEUDOGNAPHALIUM 68.
6. Inner and intermediate involucre bracts manifestly divided into a cartilaginous-herbaceous claw and a scarious, papery or plumose lamina.
15. Pappus of spatulate scales RUTIDOSIS 71.
15. Pappus of bristles.
16. Laminae of the involucre bracts conspicuous, petaloid, papery, white to coloured.
17. Achenes filiform-beaked WAITZIA 79.
17. Achenes beakless.
18. Pappus bristles plumose from the base HELIPTERUM 55.
18. Pappus bristles barbellate (rarely plumose at the apex only).
19. Capitula solitary or few in loose cymes HELICHRYSUM 54.
19. Capitula numerous in dense clusters.
20. Bract laminae yellow; pappus bristles plumose at the apex HELICHRYSUM 54.
20. Bract laminae white; pappus bristles finely barbellate to the apex VELLEREOPHYTON 78.
16. Laminae of the involucre bracts inconspicuous, scarious to plumose, never petaloid and white or coloured.
21. Bract laminae filiform-subulate, densely plumose ASTERIDEA 36.
21. Bract laminae flat, entire to long-ciliate on the margins.
22. Bract laminae ciliate.
23. Achenes with a distinct sterile beak LEPTORHYNCHOS 58.
23. Achenes beakless.
24. Capitula sessile, surrounded and usually exceeded by a cluster of leaves; pappus bristles dilated and flattened at the base TRIPTILODISCUS 77.
24. Capitula pedunculate, not surrounded by a cluster of leaves; pappus bristles filiform HELICHRYSUM complex (see HELICHRYSUM 54.)
22. Bract laminae not ciliate.
25. Achenes with a distinct sterile beak LEPTORHYNCHOS 58.
25. Achenes beakless.
26. Involucre consisting mainly of broad-ovate scarious bract laminae, the inner ones with narrow-linear claws concealed by the outer bracts PODOLEPIS 65.
26. Involucre consisting mainly of exposed linear cartilaginous-herbaceous claws, sometimes with scarious-hyaline margins, bearing shorter scarious laminae.
27. Corollas overhanging the margin of the involucre; achenes 3- or 4-ribbed IXIOLAENA 56.
27. Corollas not overhanging the involucre; achenes ribless HELICHRYSUM 54.