

5. ALPHITONIA, Reissek.

Calyx 5-lobed, spreading. Petals involute. Stamens 5, included in the petals. Disk thick, filling the calyx-tube. Ovary immersed in the disk, 2- or rarely 3-celled, tapering into a shortly lobed style. Drupe globular or broadly ovoid, the epicarp of a dry, mealy or somewhat corky substance; endocarp of 2 or 3 hard coriaceous nuts or cocci, opening inwards by a longitudinal slit. Seeds with a shining hard testa, completely enclosed in a membranous brown shining arillus, open at the top, but with the edges folded over; albumen cartilaginous or horny; cotyledons flat.—Tree. Leaves alternate, penninerved. Cymes dichotomous, many-flowered. Seeds often persisting on the torus after the pericarp has fallen off.

The genus is probably limited to a single species, ranging from Australia to the Pacific islands.

1. **A. excelsa**, *Reissek*, in *Endl. Gen.* 1098. A tall hard-wooded timber-tree, the young branches, petioles, and inflorescence hoary or rusty with a close tomentum. Leaves petiolate, varying from broadly ovate or almost orbicular and very obtuse, to ovate or lanceolate and acute or acuminate, usually 3 to 6 in. long, entire, coriaceous, glabrous or slightly hoary above, white, or rarely rust-coloured underneath with a close tomentum, the parallel pinnate veins very prominent. Flowers 2 to 3 lines diameter, in little umbel-like cymes, arranged in dichotomous cymes in the upper axils or in a terminal corymbose panicle. Calyx tomentose. Disk broad and nearly flat. Fruit 3 or 4 lines diameter, or sometimes rather larger.—*Colubrina excelsa*, Fenzl, in *Hueg. Enum.* 20.

N. Australia. Islands of the Gulf of Carpentaria (Cape Van Diemen), *R. Brown*; Sweers Island, *Henne*; Arnhem's Land, *F. Mueller*.

Queensland. Curtis Island, *Henne*; Rockhampton, *Thozet*; Port Denison, *Fitzalan*; Brisbane river, Moreton Bay, *A. Cunningham*, *Fraser*, *F. Mueller*, and others.

N. S. Wales. Hunter's, Paterson's, and Williams rivers, *R. Brown*; Hastings and Clarence rivers, *Beckler* and others; Blue Mountains, *Miss Atkinson*; Illawarra, *M'Arthur*.

The Carpentaria island specimens belong to a variety with remarkably large obtuse leaves, the flowers rather larger than usual, and the tomentum somewhat rusty. To this belongs *Zizyphus pomaderroides*, Fenzl, in *Hueg. Enum.* 20, judging from *R. Brown's* specimens corresponding to *Bauer's* *Alphitonia zizyphoides*, *A. Gray*, *Bot. Amer. Expl. Exped.* i. 278, t. 20 (*Rhamnus zizyphoides*, *Solaud.*), which extends from Borneo and New Caledonia to the Pacific islands, does not appear to differ at all from some of the eastern Australian specimens; whilst *A. franguloides*, *A. Gray*, l. c. 280, is very like some of the more tomentose N. Australian specimens.

NIB

RHAMNACEAE

Alphitonia obtusifolia
Braid

NID

RHAMNACEAE

Blackallia connata
C.A. Grand

NSB

RHAMNACEAE

Cryptandra intratropica
W. V. Fitzg.

6. **EMMENOSPERMUM**, F. Muell.

Calyx 5-lobed, the tube campanulate. Petals hood-shaped, inserted with the stamens on the margin of the disk. Stamens 5, enclosed in the petals. Disk thin, lining the calyx-tube. Ovary inserted on the disk in the bottom of the calyx-tube, but not immersed, 2-celled or rarely 3-celled, tapering into a shortly-cleft style. Fruit almost capsular, with a very thin almost dry epicarp, the endocarp separating into 2 or rarely 3 cartilaginous almost crustaceous cocci, opening along the inner face in two valves. Seeds inserted on a turbinate or slightly cup-shaped funicle, without any arillus; testa hard and shining; albumen cartilaginous; cotyledons flat.—Trees. Leaves opposite

or alternate, penninerved. Cymes or panicles trichotomous, many-flowered. Seeds often persisting on the torus after the pericarp has fallen off.

The genus is endemic in Australia. It is closely allied in technical characters to the S. African *Nollia*, but with a different habit.

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| Leaves opposite or nearly so | 1. <i>E. alphonoides</i> . |
| Leaves alternate | 2. <i>E. Cunninghamii</i> . |

2. **E. (?) Cunninghamii**, *Benth.* Leaves alternate, similar to those of *E. alphitonioides*, except that the petioles are longer. Flowers not seen. Umbel-like cymes apparently not numerous, in a terminal corymbose panicle. Fruits rather larger than in *E. alphitonioides*, 3- or 4-celled; epicarp scarcely any; cocci 2-valved. Seeds red and shining as in that species, but not persistent on the torus, and the funicle very small.

N. Australia. Port Warrender, N.W. coast, *A. Cunningham*. The specimens are very imperfect; they were referred to *Croton* by Cunningham, but the seeds are erect and present all the characters of *Rhamnea*, as already observed by Planchon in Herb. Hook.

1. **VENTILAGO**, Gærtn.

Calyx 5-lobed, spreading. Petals hood-shaped or none. Stamens 5, scarcely exceeding the petals when present. Disk flat or concave, filling the short calyx-tube. Ovary more or less immersed in the disk, 2-celled; style short, with 2 short erect stigmatic lobes. Nut globular at the base, produced into an oblong or linear coriaceous wing, 1-celled and 1-seeded, indehiscent. Seed globular; testa membranous; albumen none; cotyledons thick and fleshy.—Climbing shrubs or trees. Leaves alternate, penninerved. Flowers small, clustered along the branches of axillary or terminal panicles.

The genus is dispersed over the tropical regions of the Old World. The Australian species is endemic, differing from the others in habit and foliage as well as in the absence of petals.

1. **V. viminalis**, *Hook. in Mitch. Trop. Austr.* 369. A small glabrous tree. Leaves narrow-lanceolate, 2 to 4 or even 5 in. long, entire, narrowed into a petiole, coriaceous, the pinnate veins very oblique and sometimes almost parallel with the midrib, without the elegant transverse venation of the rest of the genus. Panicles not much branched, or almost reduced to simple racemes, shorter than the leaves, solitary or clustered in the axils. Calyx about 1 line long. Petals none. Disk entirely adnate to the short broad calyx-tube. Ovary slightly immersed in the disk. Fruit glabrous, about 1 in. long, including the wing, the turbinate adnate base of the calyx not attaining above a quarter the length of the globular nut.

N. Australia. Nicholson river, Gulf of Carpentaria, *F. Mueller.*

Queensland. High sandy ridges on the Maranoa, *Mitchell.*

N. S. Wales. Tributaries of the Upper Darling river, *Bowman.*

2. ZIZYPHUS, Juss.

Calyx 5-lobed, spreading. Petals hood-shaped or rarely none. Stamens 5, included in the petals or scarcely exceeding them, when present. Disk flat, filling the short calyx-tube. Ovary immersed in the disk, 2-, rarely 3- or 4-celled; style shortly branched or styles distinct; stigmas small. Drupe ovoid or globular, putamen woody or bony, 1- to 4-celled, 1- to 4-seeded. Seeds with a smooth fragile testa; albumen none or scanty; cotyledons thick. —Trees or shrubs, usually armed with stipular prickles. Leaves alternate, 3- or 5-nerved, often distichous and very oblique. Flowers small, greenish, in axillary cymes. Fruit often edible.

The genus ranges over the tropical and subtropical regions of the New and the Old World. Two of the Australian species are also common Asiatic ones, the third is endemic.

Leaves green on both sides, softly pubescent or villous, or at length glabrous. Drupe small, 2-celled 1. *Z. Euphoria*.

Leaves white or rusty underneath, with a close tomentum.

Ovary and drupes 2-celled 2. *Z. jujuba*.
 Ovary and drupes 4 celled 3. *Z. quadrilocularis*.
 (*Z. melastomoides*, A. Cunn. Herb. and Steud. Nom., is a *Celtis*.)

3. **Z. quadrilocularis**, *F. Muell. Fragm.* iii. 57. A tall shrub or small tree. Stipules lanceolate, appressed, very rigid and pointed, but not so spinous and more deciduous than in the other species. Leaves ovate, shortly acuminate, or rarely obtuse, 2 to 3 in. long, entire or scarcely crenulate, very oblique at the base, 3-nerved, glabrous above, rusty or hoary-tomentose underneath, as well as the young branches. Cymes small, dense, very shortly pedunculate. Ovary 4-celled, with a short 4-lobed style. Drupe globular, of the size of that of *Z. jujuba*, but the thick bony putamen 4-celled and 4-seeded.

N. Australia. Upper Victoria river, *F. Mueller.*