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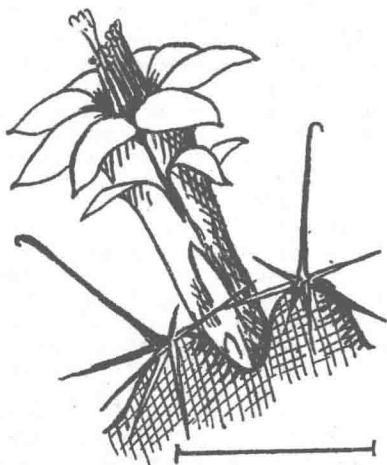
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COCHEMIEA (after an Indian tribe which once inhabited Lower California). FAM. *Cactaceae*. Plants cylindrical, often much elongated; tubercles spirally arranged, not milky or grooved. Flowers borne in the axils of the tubercles, as in *Mammillaria*, but differing from that genus by being narrowly tubular, curved, and 2-lipped. Fruit round, red. **A**

C. Hal'ei. Plants elongated, growing in clusters; tubercles short, axils woolly; radial spines 10 to 20; centrals 3 or 4. *fl.* scarlet, up to 2 in. long. Islands of S. Lower California. (B.R.C. 4, f. 22.) SYN. *Mammillaria Halei*.

C. Pondii. Stems cylindrical, simple or branched; axils bristly; radial spines 15 to 25, white; centrals 8 to 11, much longer and stouter. *fl.* scarlet, slender, up to 2 in. long. Islands off the W. coast of N. Lower California. SYN. *Mammillaria Pondii*.



Cochemiea Poselgeri

C. Posel'geri. Stems numerous from a central root, spreading or prostrate, up to 6 ft. long; areoles and young axils woolly; tubercles somewhat flattened; radial spines 7 to 9, yellowish; central 1, hooked. *fl.* scarlet, shorter. Lower California. (B.R.C. 4, t. 2.) SYN. *Mammillaria Poselgeri*.

C. setispina. Stems erect, cylindrical; axils woolly; radial spines 10 to 12, white with black tips, slender; centrals 1 to 4, stouter, 1 hooked. *fl.* large, scarlet. S. Lower California. SYN. *Mammillaria setispina*.

V. H.

cochinchinen'sis -is -e, of Cochin-China.

COCHINEAL. Dye obtained from a scale insect which lives on *Opuntia*, *Nopalea*, &c., used also as a colouring agent in cooking.

COCHINEAL FIG. See *Nopalea cochenillifera*.

COCHLEA'RIA (*cochlear*, spoon; the leaves of many species are shaped like the bowl of a spoon). FAM. *Cruciferae*. Annual or perennial herbs with about 15 species in Europe and N. America, usually smooth and fleshy. Leaves very variable; radical leaves usually stalked; stem leaves often arrow-shaped and auricled. Flowers small, white, yellowish, or purplish, in racemes. Fruit an inflated silicula with very convex valves; seeds many. Few species are sufficiently beautiful to justify their cultivation but those that are cultivated grow freely in ordinary rich, damp, but well-drained soil, from seed sown in the open. All are hardy. *C. officinalis* is the Scurvy Grass so well known to sailors of old and valued for its anti-scorbutic properties; the green parts are acrid with a tarry flavour. *C. Armoracia*, Horse-radish, has recently been moved into other genera by different botanists, into *Radicula*, *Roripa*, and *Nasturtium*, and while this difference of opinion exists it seems best to retain it in this genus where it has for so long been well known. Some species may be grown on the rock-garden for they make neat rosettes of glossy leaves, *C. danica* and *C. officinalis* being typical and as good as any.

C. Armoracia. Horse-radish. Perennial. Root large, fleshy, its fangs going deeply into the soil. Stem about 2 ft. h. *l.* at base large, oblong, with rounded teeth; stem-*l.* lanceolate, more or less deeply toothed or cut. *fl.* white; cal. spreading. May. E. temperate Europe, naturalized in Britain. (E.B. 129.) See **Horse-radish**.

C. danica. Annual, tufted, 6 to 8 in. h. *l.* radical, rounded kidney-shaped, rarely 1 in. long. *fl.* small, white, numerous. May, June. N. temperate and Arctic regions. (L.B.C. 1482.)

C. officinalis. Common Scurvy Grass. Biennial, 2 to 12 in. h. Radical *l.* stalked, heart-shaped; stem-*l.* ovate, toothed, angled. *fl.* white. Spring. Northern parts of N. hemisphere. (E.B. 130.)

C. saxatilis. A synonym of *Kernera saxatilis*.

cochlea'ris -is -e, spoon-shaped.

cochlea'tus -a -um, twisted so as to resemble the shell of a snail.

COCHLIO'DA (*kochlion*, a little snail; in reference to the curiously shaped callus). FAM. *Orchidaceae*. A genus embracing about 10 species of evergreen, epiphytic Orchids, natives of the Andes. Flowers often red, disposed in loose racemes, pedicellate; sepals equal, spreading, free, or the lateral ones more or less connate; petals nearly similar; claw of the lip erect, the lamina spreading, the lateral lobes round and often reflexed, the middle one narrow, entire or emarginate, not exceeding the sepals; column erect, often slightly incurved; stigmatic surfaces 2, rather obscure; scapes from base of pseudobulbs. Leaves oblong or narrow, leathery, contracted into the petioles. Pseudobulbs 1- or 2-leaved. Cultural treatment, compost, &c. exactly as for *Odontoglossum crispum*. The pseudobulbs and foliage are of slightly harder texture than that of true *Odontoglossums* with which genus *Cochlioda* readily intercrosses, the hybrids (*Odontiodas*) being valuable for their brilliant hues, obtained chiefly by the use of *C. densiflora*, better known as *C. Noezliana*.

C. brasiliensis. A synonym of *Binotia brasiliensis*.

C. densiflora. *fl.* orange-scarlet, about 1 in. across; disk of lip yellow; lateral sep. narrower and longer than dorsal one and pet.; lip 3-lobed, mid-lobe bluntly-obcordate; column triquetrous, dark; peduncles nodding or pendulous, racemose, many-fl. *l.* linear-oblong, acute, 4 to 6 in. long. Pseudobulbs 1½ to 2 in. long, 1 or 2-lvd. S. America. 1891. (L. 266; W.O.A. 509; B.M. 7474.) SYN. *C. Noezliana*, *Odontoglossum Noezlianum*. var. *aurantiaca* has yellower *fl.* than type.



Cochlioda sanguinea (p. 514)

C. Flor'yi. Possibly a natural hybrid between *C. densiflora* and *C. rosea*. fl. cinnabar-red, 1½ in. across; sep. lanceolate; pet. shorter, broader, elliptic-oblong; lip 3-lobed with a yellow crest. Peru. 1911.

C. minia'ta. Probably a natural hybrid between *C. densiflora* and *C. vulcanica*. (L. 562.)

C. Noezlia'na. A synonym of *C. densiflora*.

C. ro'sea. fl. rosy-carmine, except the white tip of the column, about 1 in. across; sep. and pet. oblong-elliptic; lip cuneate at base, the small lateral lobes enclosing the disk, which bears a 4-lobed callus, mid-lobe longer, linear, dilated at end; racemes drooping, 12- to 20-fld. Winter. l. ligulate-oblong. *Pseudobulbs* green, ovate, 2-edged. Peru. 1851. (B.M. 6084.) SYN. *Mesospinidium roseum*, *Odontoglossum roseum*.

C. sanguin'ea. fl. numerous, bright rose, waxy in appearance; lower sep. partially connate; racemes slender, drooping, slightly branched. Summer, autumn. l. 2, cuneate-ligulate. *Pseudobulbs* oval, compressed, sometimes banded with mottled brown. Peru and Ecuador. 1867. (B.M. 5627 as *Mesospinidium sanguineum*.)

C. stric'ta. fl. rose, numerous, erect, smaller than in *C. rosea* which they otherwise resemble; peduncle slender, erect. l. narrow, acute. *Pseudobulbs* ovate, compressed, bronzy-green. Colombia. 1897.

C. vulcan'ica. fl. 1½ to 2 in. across; sep. and pet. dark rose; lip bright rose in front, paler on disk where there is a 4-keeled callus, side lobes roundish, mid-lobe emarginate; racemes erect, 12- to 20-fld.; peduncle slender, erect. l. oblong, keeled, 3 to 5 in. long. *Pseudobulbs* ovoid, compressed, more or less 2-edged. E. Peru. 1872. (B.M. 6001 as *Mesospinidium vulcanicum*.) var. *grandiflora* has deep rose fl. in racemose spikes, larger than in type. 1893. E. C.

cochlio'des, resembling Cochlioda.

COCHLIOSTE'MA (*kochlion*, spiral, *stema*, stamen; the stamens being spirally curved). FAM. *Commelinaceae*. A genus of 2 species (sometimes combined in one) of very handsome perennial, stemless, epiphytic herbs, natives of Ecuador, with the habit of a *Billbergia*. Leaves large, oblong-lanceolate, sheathing at base. Flowers large, in crowded terminal cymes forming large panicles in the leaf-axils. The individual flowers last but a short time and open successively over a long period. Sepals 3, concave; petals 3, nearly equal, wider than sepals, with long marginal hairs; staminodes 3, 2 erect, linear, 1 short, feathery; staminal column hooded, its incurved margins enclosing 3 spirally twisted anthers. The *Cochliostemas* are stove plants growing well in a compost of peat and loam in equal parts with a small quantity of sand and well-decayed sheep or cow manure. They need plenty of water, both overhead and by syringing, and perfect drainage, and though less water is needed in winter they must not be allowed to become dry. Propagation is by division of the plants in spring or by seed, sown as soon as ripe. To make certain of seed artificial pollination is necessary.

C. Jacobis'num. l. oblong-lanceolate, 1 to 3 ft. long, 6 to 8 in. wide, rich dark green with a narrow purple margin. fl. blue, delicately sweet-scented, numerous, stalked, in crowded cymes. September. Ecuador. 1867. (B.M. 5705.)

C. odoratis'simum. Habit of *C. Jacobis'num*. l. pale green above, margined red, red with deep red-violet lines beneath. fl. yellowish-green at base, reddish above; pet. deep blue with large white claw. More strongly scented than *C. Jacobis'num*. Ecuador. (G.F. 590.)

COCHLOSPERMA'CEAE. Dicotyledons. A family of about 18 tropical trees in a single genus, *Cochlospermum*. Some species have a short, stout underground stem. Leaves usually palmately lobed, or digitate, alternate, stipulate. Flowers perfect, usually regular, in panicles; sepals and petals 4 or 5; stamens many; carpels 3 to 5, joined, with many ovules on parietal or central placentae. Fruit a capsule. Related to *Bixaceae* with which it was at one time united.

COCHLOSPERM'UM (*cochlo*, to twist, *sperma*, seed; in reference to the form of the seed). FAM. *Cochlospermaceae*. The only genus in its family, containing 18 magnificent trees, usually evergreen but in many species dropping their leaves in the dry season. For characters see Family. Flowers yellow, large. The plants grow

well in a compost of loam and peat and require stove treatment. Cuttings of ripe shoots made in April will root in sand under a bell-glass, but do not make such good trees as seedlings.

C. Gossyp'ium. Tree up to 50 ft. l. 3- to 5-lobed, lobes acute, entire, hairy beneath. fl. yellow, large. India. 1822. SYN. *Bombax Gossypium*.

Cockburnia'nus -a -um, in honour of H. Cockburn, 1859-1932?, British consul in China, or Rev. G. Cockburn, of the Scottish church in China.

COCKCHAFERS. See *Chafers*.

COCKLE BUR. See *Xanthium*.

COCKROACHES. The 5 kinds that are of economic importance in this country are the Common or Oriental (*Blatta orientalis*), the German (*Blatella germanica*), the American (*Periplaneta americana*) the Australian (*P. australasiae*), and *Leucophaea surinamensis*. The Common and German species are commonly found in dwelling-houses and are generally referred to as 'Black-beetles', while the other three occur in glasshouses and warehouses. They are omnivorous in their habits, being partial to a varied diet and, when short of food, may resort to cannibalism. The household species do more harm by tainting and spoiling food than from the actual amount of food consumed. They are nocturnal, swift runners, have very flat bodies that allows them to gain entrance into buildings through small cracks and crevices in brick- and wood-work, possess a large and broad upper segment of the thorax which almost entirely conceals the head, and very long antennae. Their eggs are laid in conspicuous, horny, purse-like sacs containing a varying number of eggs. The young nymphs resemble their parents but are wingless, the wing-buds lengthening as the insects develop—an exception being the female of the Common Cockroach which is practically wingless. The American and Australian species abound in glass-houses and forcing-pits where they eat seeds, seedlings, and leaves, and nibble the aerial roots of Orchids.

The presence of plant refuse beneath the staging of glasshouses encourages these pests, and all rubbish should be cleared from the houses. Trapping is a useful measure for reducing their numbers, and effective traps are made by sinking jam-jars in the borders and floor baited with stale beer and treacle or peeled Banana. The use of poisonous baits (Paris Green and bran or D.D.T. dust) or non-poisonous dressings (powdered borax and fresh pyrethrum powder) is desirable in heavy infestations (see F. Laing, Economic Series No. 12, British Museum (Natural History), Bulletin 'Cock-roaches').

G. F. W.

COCKSCOMB. See *Celosia*.

COCKSFOOT GRASS. See *Dactylis glomerata*.

COCKSPUR FLOWER. See *Plectranthus*.

COCKSPUR THORN. See *Crataegus Crus-galli*.

COCKTAIL BEETLE. See Devil's Coach Horse.

COCO DE MER. See *Lodoicea*.

COCOA. See *Theobroma Cacao*.

COCOA PLUM. See *Chrysobalanus Icaco*.

COCOA ROOTS. Roots of *Caladium bicolor* and other species of *Caladium*.

cocoi'des, Cocos-like.

cocoi'nus -a -um, like coco-nut in some way, e.g. in odour.

COCO-NUT. The fruit of *Cocos nucifera*.

COCO-NUT, DOUBLE. See *Lodoicea*.

COCO-NUT FIBRE. The fibre between the outer skin and the shell of the coco-nut was at one time extensively used in horticulture and was most useful, but since the dried flesh of the nut (copra) is the form in which it is now commonly imported, instead of as the whole nut, little is available. It is free from acid, salts of any kind and tannin, or any other substance injurious to young plants and proved very suitable as a medium for the raising of cuttings of tender bedding plants which rooted readily in it. The fresher it is the longer it will last and therefore the better for all purposes. Being very light and easily handled it formed one of the best materials for plunging small pots in, either in the house or frame in winter and spring or outside at any time. It could be used for potting young bedding plants but not for permanent potting since it held water too tenaciously and decayed too quickly. It was frequently used for surfacing flower-beds in summer, and for protecting roots of tender plants in winter, and its cheapness was greatly in its favour, especially as it was also useful as an addition to stiff soils to lighten them, and to dry soils to enable them to hold more moisture. There is nothing that can quite take its place, a good peat being the nearest.

CO'COS (*coco*, Portuguese name for monkey, from the likeness of the end of the nut to a monkey's head). **FAM.** *Palmaceae*. Like many other genera of Palms *Cocos* has undergone many changes and the genus as understood by many botanists now contains but one species, *C. nucifera*, the Coco-nut. Other species once included in it have been distributed over the genera *Arecastrum*, *Arikuryroba*, *Butia*, *Rhyticocos*, and *Syagrus* and should be sought under these headings. For characters of *C. nucifera* see below. The Coco-nut Palm has, in its native home and in the many parts of the tropics in which it has become naturalized, been put to almost innumerable uses, its leaves for thatch, the outer part of its trunk as timber for various purposes (porcupine wood) and its fruit for divers purposes. The fruit is readily transported by ocean currents and, probably mainly by this means, the tree has spread far from its place of origin which is supposed to be Trop. America. Among the purposes it serves are the making of toddy and its derivatives from the sap which exudes from the end of the unopened spathe when its tip is sliced off (as it is day after day by the collectors). This is used fresh as a beverage, or as a source of alcohol, or sugar, or vinegar. The fibrous coat outside the shell of the nut provides Coir, used in the manufacture of cordage, for coco-nut matting, and for brooms. The third important product and the most important is Copra, made by drying the flesh of the nut either in the sun or by artificial heat, a source of fat and oil used in making soap, candles, and substitutes for butter. Desiccated coco-nut is exported from Ceylon, and a certain number, much smaller however than formerly, of the ripe nuts are also imported into this country. The coco-nut produces 1 seedling from the largest of the 3 soft disks at the end of the nut (2 of the 3 ovules contained in the flower aborting). It does not as a rule grow satisfactorily in this country, being more exacting in its requirements than many other Palms. It needs stove conditions, a compost of 2 parts rich loam, 1 of peat, and 1 of sand, much water during the growing season, and a gradually reduced supply as winter approaches. It is reproduced by the nuts.

C. australis. A synonym of *Butia capitata*.

C. capitata. A synonym of *Butia capitata*.

C. dactyl. A synonym of *Arecastrum Romanzoffianum australe*.

C. flexuosa. A synonym of *Butia Yatay*.

C. flexuosa. A synonym of *Arecastrum Romanzoffianum australe*.

C. leiopoda. A synonym of *Butia leiopoda*.

C. nucifera. Coco-nut Palm. Tree of 40 to 100 ft., slender, thickened at base. L. pinnate, 6 to 20 ft. long; lfts. linear-lanceolate, 2 to 3 ft. long, more or less pendent, leathery, bright glossy-green; stalk stout, 3 to 5 ft. long. Introduced from E. Indies. 1690. Native of Cocos and Keeling Is. and probably Trop. America. var. *au'rea*, sheaths, stalks, and midribs of l. orange-yellow.

C. odora'ta. A synonym of *Butia capitata odorata*.

C. petraea. A synonym of *Syagrus petraea*.

C. plumosa. A synonym of *Arecastrum Romanzoffianum*.

C. Procopia'na. A synonym of *Syagrus macrocarpa*.

C. Romanzoffia'na. A synonym of *Arecastrum Romanzoffianum*.

C. schizophyl'la. A synonym of *Arikuryroba schizophylla*.

C. Weddellia'na. A synonym of *Syagrus Weddelliana*.

C. Ya'tay. A synonym of *Butia Yatay*.

CODIAE'UM (from the native name, *kodiho*, in Ternate). **FAM.** *Euphorbiaceae*. A genus of perhaps 6 species of evergreen shrubs natives of Malaya and the Pacific Is. Leaves alternate, leathery, rather thick, glabrous, with slightly milky juice. Flowers monoecious, in slender axillary racemes; staminate flowers with 3 to 6 reflexed sepals (mostly 5); 5 petals, scale-like, shorter than sepals; 20 to 30 stamens; pistillate flowers without petals, sepals 5; ovary 3-celled, with 1 ovule in each cell. Only 1 species is in general cultivation, *C. variegatum*, and of that only the variety *pictum* of which there are a great number of forms, many of which have received names of Latin form as though they were species. Among plants with ornamental foliage few are as useful or striking as the forms of this plant. They are usually called Crotons (but differ in several ways from the true Crotons, particularly in having glabrous leaves, milky sap, and erect stamens). In addition to the remarkable range of bright colours found in these plants the leaves often assume singular forms, and except *Dracaenas* no group of plants of a similar type is more easily grown than *Codiaeums*; and, furthermore, they are available the year round. When wanted for table decorations the plants should be grown with a single stem. To obtain this the best way is to take off the tops of strong leading shoots and use them as cuttings. They may be struck by placing singly in small pots, covering with bell-glasses, in strong, moist heat, when they soon form roots losing none of the leaves that were on the shoots when they were inserted. When rooted they should be given a little air, gradually giving more until they can bear full exposure. The most useful size for table decoration is from 12 to 18 in. high. When used for this purpose the plants frequently lose their lowest leaves and when they reach this height it is best to make cuttings of their tops and start again. Besides this use for table decoration and for use in rooms generally *Codiaeums* are equally useful for conservatories and other cool houses during summer and autumn. For this purpose they must be gradually hardened before they are taken out of the stove heat as they are very susceptible to cold, and sudden changes cause their leaves to fall. The soil best suited for them is fibrous loam with a good sprinkling of sand to keep it open and porous. In this, given due attention to water-supply and temperature, they will grow very freely. The temperature most suitable in winter ranges from 60 to 70° F. according to the state of the weather. In order to bring out to the fullest extent their brilliant colourings it is necessary to give the plants plenty of light; they should be placed on pans or inverted pots to raise them above neighbouring plants which might shade them. Plants which it is desired should grow into large specimens should be encouraged to make plenty of side shoots by pinching the end of the leading shoots if they do not start freely without, but they usually grow naturally into bushy plants. They need a moist atmosphere and must be well attended to in regard to watering and syringing otherwise Red-spider-mites will become troublesome. This is one of the worst enemies of the *Codiaeums* and Thrips is another, and no

pains should be spared to keep them in check. (See special headings.) For the different forms see Appendix.

C. variegatum pictum. Croton. *l.* ovate to linear, marked with various colours, entire or lobed. (B.M. 3051; L.B.C. 870.) The *l.* may be plane or recurved, entire or lobed, the margins may also be crisped, or the *l.* spirally twisted, the blade may have a hair-like apical projection or this projection may terminate in a *l.*-like appendage and each of these forms has appeared in a great variety of colourings.

CODLIN. A smooth green or golden apple without stripes and with at most a faint flush of reddish colour on one side, usually early, usually sour, sometimes sweet, always juicy, with more or less acidity, excellent cookers and usually very fertile. The term is applied generally and also with a prefix, as Manx Codlin, English Codlin, to particular varieties of apple. Sometimes spelt Codling.

CODLING MOTH, *Cydia pomonella*, one of the most widespread Apple pests, occurs in almost every country where apples are grown. Its caterpillar was long known as the 'Apple Worm'. The chief food plant is the Apple, but it attacks Pear, Quince, Walnut, and some wild species of *Pyrus*. The moths, which have brownish-grey wings with a copper-coloured patch towards the ends of the fore-wings, are not well known for they fly at dusk and rest during the day on tree trunks, branches, and leaves where they are difficult to detect. The female lays her oval flat eggs singly on the developing fruitlets, leaves, spurs, and shoots. The young caterpillar enters the fruit either through the 'eye' or the side, and burrows down and round the core devouring the flesh and the pips. The larvae are fully fed in 3 to 4 weeks, and are then about $\frac{1}{2}$ to $\frac{3}{4}$ in. long, pinkish-white with a brown head. They burrow their way out of the fruits, which may still be attached to the tree or have fallen to the ground, and seek shelter in which to overwinter. Positions chosen for hibernation are cracks and crevices in the bark, beneath old grease-bands and in dry rubbish on the ground nearby, and there they spin whitish or brown cocoons in which they remain until the following spring when they pupate. There may occur a partial second brood of caterpillars in August and September, but the extended period of egg-laying—mid-June to early August—has resulted in mistaken statements to the effect that this pest is invariably 3-brooded in this country. Much confusion still exists between attacks by this pest and the Apple Sawfly (q.v.), but the following may enable one to distinguish between these pests. Damage by Codling moth occurs later in the season than Sawfly; unlike fruits injured by the Sawfly, those attacked by the moth larvae have no unpleasant odour; Codling caterpillars emit no black frass from their tunnels, and do not give rise to ribbon-like scars on the fruits; Codling caterpillars feed chiefly in the region of the core, those of the Sawfly eat out large irregular cavities in the flesh; and the number of legs differs—the Codling larva possesses 8 pairs (3 pairs of true or thoracic legs and 5 pairs of prolegs or 'sucker feet') while the Sawfly larva possesses 10 pairs (3 pairs and 7 pairs respectively).

Control measures include the collection and destruction of all fallen and maggoty fruit; clearance of all rubbish and dead leaves round and near the fruit trees; scraping loose bark from the trunks of old and neglected trees; spraying of moss- and lichen-covered trunks and branches with caustic alkali or tar-distillate wash; placing of trap-bands (corrugated paper or sacking) round the trunks in July and their removal and destruction in October; and spraying with arsenate of lead, which should be directed into the 'eye' or calyx-cup of the developing fruits, within 14 days of petal-fall. The later (July) brood may be controlled by spraying with a D.D.T. emulsion.

A G. F. W.

CODLINS AND CREAM. See *Epilobium hirsutum*.

CODONANTHE (*kodon*, bell, *anthos*, flower; from the shape of the corolla). FAM. *Gesneriaceae*. A genus of about 12 species of herbs or sub-shrubs, which creep or climb over rocks and trees in Trop. America. Leaves opposite, often rather small and fleshy. Flowers solitary in the leaf-axils, short-stalked, whitish; calyx of 5 linear, free sepals; corolla tube curved or bent downwards, rather broad at the throat, lobes 5, spreading, oblique. Fruit a berry. For cultivation of the two mentioned, which make good basket plants, see *Gesneria*.

C. Devosiana. Nearly allied to *C. gracilis*. Branches many, pendent, slender, brown, rooting. *l.* rounded-oval, recurved at tip, fleshy, usually entire. *fl.* whitish-rose, 2-lipped, lower lip auricled at base; cor. tube velvety within, spotted golden-red in mouth; peduncles solitary or opposite. Organ Mts., Brazil. 1855. (L.H. 2 (1855), 56.)

C. gracilis. Stem branched, terete, purplish-brown, rooting below nodes. *l.* ovate, thick, fleshy, dark green above, pale and often blotched red beneath. *fl.* creamy-white, spotted orange on lower side of tube within; peduncles 1 or 2 in axils, short, red. June. Organ Mts., Brazil. 1850. (B.M. 4351 as *Hypocyrta gracilis*.)

codonodes, bell-bearing.

CODONOPSIS (*kodon*, bell, *opsis*, resembling; from the shape of the corolla). FAM. *Campanulaceae*. A genus of about 20 species of herbs, often with twining stems, natives of Asia from the Himalaya to Japan, annual or perennial. Branches usually opposite. Leaves alternate or nearly opposite, ovate; stalks short. Flowers whitish, yellowish, or bluish, bell-shaped, often malodorous; stamens free of corolla; ovary inferior or half superior; stigma lobes 3, broad. Fruit opening regularly at top. The species are easily raised from seed, are generally hardy, and are best planted on a high bank so that the interior of the hanging flowers can be seen, for there the chief beauty of the flower lies, the outer colouring, except in the very beautiful and uncommon *C. convolvulacea* which is blue without and within, being usually somewhat indeterminate. Good, light soil, suits them best.

C. clematidea. Perennial, 3 or 4 ft. h. *l.* ovate, slender-pointed, almost glabrous. *fl.* white, tinged blue. Mts. of Asia. (G.F. 167.)



Codonopsis convolvulacea Forrestii (p. 517)

C. convolvula'cea.* Perennial twiner. Stem slender, glabrous, slightly branched. *l.* usually smooth, alternate, ovate-lanceolate or ovate, $\frac{1}{2}$ to 2 in. long, more or less acute, entire or nearly so; stalk slender, $\frac{1}{2}$ to $\frac{1}{4}$ in. long. *fl.* blue, bell-shaped, $1\frac{1}{2}$ to 2 in. across; lobes $\frac{1}{2}$ to $1\frac{1}{4}$ in. long, oblanceolate, acute; cal. superior, tube about $\frac{1}{2}$ in. long, lobes 5, triangular, acute. Himalaya, W. China. 1906. (B.M. 8178.) var. **Forrestii**, differs by its more robust habit and larger *l.* and *fl.*, *l.* firm, ovate. Yunnan, Szechwan. 1923. (B.M. 9581.) SYN. *C. Forrestii*, *C. tibetica*.

C. Forrestii. A variety of *C. convolvulacea*.

C. lanceola'ta. Perennial twiner, 2 to 3 ft. h. Stems purplish, roots tuberous. *l.* oblong-lanceolate, 1 to 2 in. long, sometimes with rounded teeth. *fl.* pale lilac without, violet within; segs. ovate-deltoid. China. 1851. (F.d.S. 927 as *Campanumoea lanceolata*.)

C. Meleg'ris. Perennial herb with a large, fleshy rootstock. Stems erect, somewhat flexuous in upper part, 6 to 14 in. h., with 1 or 2 *l.* crowded at base, often in rosettes, elliptic-oblong, sessile or nearly so, margins wavy, lower surface glaucous, softly hairy. *fl.* 1 or 2, nodding, bell-shaped, 1 to $1\frac{1}{2}$ in. long, bluish to cream, netted chocolate-brown without, dull purple-violet from a narrow green base, sometimes spotted yellow within; lobes ovate, sub-acute, $\frac{1}{2}$ in. long. August. Yunnan, China. 1916. (B.M. 9237.)

C. mol'lis. Tufted with many leafy ascending stems. *l.* small, ovate, greyish-green, softly hairy. *fl.* pale blue, nodding, without the unpleasant odour of most species; cor. tubular, expanding from middle, lobes short, triangular; peduncle slender, long, leafless, 1- to 4-fld. Tibet. 1924. (J.R.H.S. 70, f. 91; B.M. 9677.) A difficult plant, for the rock-garden.



Codonopsis ovata

C. ova'ta. Perennial, 6 to 12 in. h., lower part of stem spreading, upper erect. *l.* ovate, up to $\frac{1}{2}$ in. long, hairy on both sides; stalks up to $\frac{1}{2}$ in. long. *fl.* pale blue, broadly bell-shaped, 1 to $1\frac{1}{2}$ in. long; peduncles 3 to 6 in. long. Himalaya. 1856. (B.M. 9208.)

C. rotundifo'lia. Annual twiner, tall. *l.* ovate, rather blunt, stalked. *fl.* yellowish-green veined dark purple, larger, bell-shaped, widening inwards. Himalaya. (B.M. 4942.) var. **grandiflo'ra**, cor. more variegated than in type, resembling that of Deadly Nightshade. (B.M. 5018.)

C. Tang'shen. Perennial twiner, up to 10 ft. h. Stems slender, smooth or almost so; roots long, fleshy. *l.* ovate to ovate-lanceolate, $1\frac{1}{2}$ to 2 $\frac{1}{2}$ in. long, usually minutely downy, blunt, remotely crenate. *fl.* greenish, with purple stripes and spots within, bell-shaped, about $1\frac{1}{2}$ in. long, lobes $\frac{1}{2}$ in. long. W. China. 1902. (B.M. 8090.) Root yields a tonic drug used in China.

C. tibet'ica. A synonym of *C. convolvulacea*.

COELESTI'NA ageratol'des. A synonym of *Ageratum corymbosum*. A

coelesti'nus -a -um, blue.

coeles'tis -is -e, sky-blue.

Coeli-ro'sa, Rose of heaven.



Codonopsis Tangshen

COE'LIA (*kailos*, hollow; the 8 pollen masses were wrongly thought to be concave within). FAM. *Orchidaceae*. A genus of 6 or 7 species of epiphytic orchids in Cent. America, the W. Indies, and Mexico. The pseudobulbs are comparatively small, globose, bearing 3 or 4 narrow, ribbed leaves, narrowed below into sheathing foot-stalks. The flowers are produced from their bases in short, usually densely flowered, bracteate spikes. With the exception of *C. bella*, the flowers are small. The column is produced into a short foot to which the 2 lateral sepals are adnate at their bases; capsule 3-winged. The species succeed well in the cool house, but *C. bella* should have a winter temperature of 55° F. *C. macrostachya* requires a rather longer rest than the other species with softer bulbs. Compost as for *Lycaste* with greater proportions of *Osmunda* fibre and Sphagnum.

C. Baueria'na. *fl.* small, greenish-white, fragrant; racemes densely-fld.; bracts long. June. *l.* ensiform, 12 to 15 in. long. *Pseudobulbs* ovate. 1 ft. h. W. Indies, &c. 1790. (B.R. 28, 36.)

C. bel'la.* *fl.* 3 or 4, erect, 2 in. long; perianth yellowish-white, with rose-purple tips to seg., and having an orange mid-lobe to lip, tubular below, funnel-shaped above; scape 2 to 4 in. long, clothed with brown sheaths. Autumn to December. *l.* 3 or 4, 6 to 10 in. long, elongate-ensiform, acuminate. *Pseudobulbs* $1\frac{1}{2}$ to 2 in. long, globose or ovoid. Ile St. Catherine. 1882. (B.M. 6628; W.O.A. ii. 51.) SYN. *Bifrenaria bella*, *Bothriochilus bellus*.

C. densiflo'ra. *fl.* pure white; anther-case yellow. Allied to *C. Baueriana* but differing in colour and in the shorter more densely-fld. infl. Guatemala. 1906.

C. guatemalen'sis. Spikes erect, bracteate, 4 in. h. *fl.* 4 or more, small, fleshy, soft rose; sep. forming a tube $\frac{1}{2}$ in. long, concealing the pet. and lip, slightly reflexed at tips; pet. and lip whitish. The bases of the lip and lateral sep. form a blunt, tapered, straight spur, as long as the sepaline tube. Fl. in axil of a greenish boat-shaped, acuminate bract. *Pseudobulbs* globose-conical, 2 in. h. *l.* narrow, 12 in. long. Summer. Guatemala. 1939.

C. macrostach'ya.* *fl.* red; racemes many-fld.; bracts red-brown, linear-lanceolate, acute, squarrose; lip lanceolate, 2-saccate at base. April. *l.* ensiform, plicate. *Pseudobulbs* large, almost globose. $1\frac{1}{2}$ ft. h. Guatemala. 1840. (B.M. 4712.)

C. trip'tera. A synonym of *C. Baueriana*.

E. C.

COELIOP'SIS (*Coelia*-like). FAM. *Orchidaceae*. The only species known is *C. hyacinthosma*, an epiphyte. Compost and cultivation should be as for *Stanhopeas*. The winter rest must not be drastic, and pots and pans may be used in place of baskets.

C. hyacinthos'ma. * fl. fragrant, fleshy, 12 to 20, closely set on short, lateral peduncles, produced from the base of the bulbs, about 1 in. across, broadly campanulate; sep. broadly lanceolate; pet. narrow; lip deeply saccate at the base, broadly rounded with the front lobe extended into a narrow reflexed tongue, white with the exception of deep ochre in the throat, a circular thin zone of purplish-red in front of it and a small anterior blotch of the same colour. Column stout, white, deep purplish-black on the basal half in front passing into the sac; slightly variable. Pollen masses 2. Spring. *Pseudobulbs* ovoid, 2 to 3 in. h., triphyllous. l. 15 to 18 in. long, lanceolate, plicate, contracted below into a channelled foot-stalk. Panama, Costa Rica. 1872.

E. C.

COELOGLOS'SUM. Included in *Habenaria*.

COELOG'YNE (*koilos*, hollow, and *gyne*, female; referring to the form of the stigma). FAM. *Orchidaceae*. A genus of 120 or more epiphytic species distributed from Ceylon, through the East. The species vary greatly, but in general they are pseudobulbous with bulbs from 1 to 6 in. high, usually diphyllous. The flowers solitary or racemose, erect or pendent, are in many species produced from the middle of the young growth, in others they do not fully develop until the pseudobulbs are complete. The sepals, larger than the petals, are free, but not always spreading; the petals in some species are so narrow as to be nearly filiform. The lip usually large and cucullate may be entire or 3-lobed, slightly saccate at the base with 2 or more longitudinal raised lines or keels; the side lobes are often comparatively large and erect. The column is curved and winged, often toothed on a membranous margin, nearly parallel with the lip. Pollen masses 4.

The great variation in the genus and its wide distribution governs the temperatures required. The Bornean, New Guinea, and Far Eastern species require a warm house with a winter night temperature of at least 60° F. The Indian and many of the Burmese species can be grown in the cool house during summer but should not fall below 50° F. in the winter, though the greater number then require but infrequent waterings. The species with pendent spikes should be placed in baskets or pans which can be suspended. The smaller growing species, particularly those with clustered pseudobulbs, can be placed in pans or pots; a few with straggling habit should be accommodated on rafts. All need a compost of 3 parts of shredded *Osmunda* fibre to 1 part of *Sphagnum* moss. When the foliage is young and enfolded the syringe should not be used; with all, water may be freely given when growths and roots are active.

Botanically, *Pleiones* are very nearly related to *Coelogyne*, but they differ widely in habit and in the cultivation required and are therefore kept separate here.

C. albolu'tea. fl. fragrant; white with deep yellow markings on the lip. Allied to and resembling *C. Huettneriana*. India. 1896.

C. annamen'sis. Differs from *C. fuscescens* in that the sep. and pet. are pale buff and the buff lip is marked with deep orange-brown. Summer. Annam. 1894.

C. Arthuria'na. A synonym of *Pleione Arthuriana*.

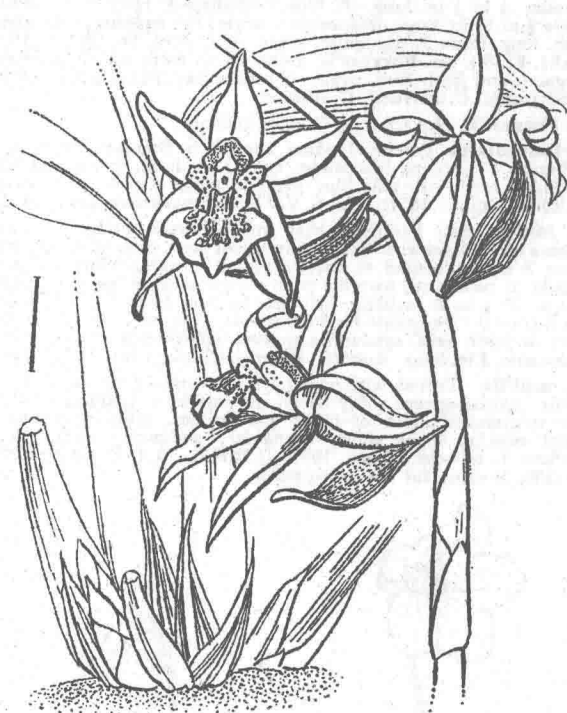
C. aspera'ta. * fl. about 3 in. across; sep. and pet. pale cream, nearly equal; lip ground-colour the same, marked with chocolate and yellow streaks and veins, which radiate from an orange central ridge; raceme pendulous, 12 to 18 in. long, several-fld. Summer. 2 ft. h. Borneo. (L. 582; W.O.A. 311.)

C. assam'ica. fl. 6 to 10, ochre, 1½ in. across; pet. linear; lip 3-lobed, side lobes margined brown, mid-lobe spreading, darker on margins. Autumn. Assam. 1857. (X.O. 2, 134.) Very near *C. fuscescens*.

C. barba'ta. * fl. snow-white, large; lip 3-fld, with projecting triangular acute mid-lobe, 3 rows of narrow lamellae on the disk, and a border of cilia; the lamellae, cilia, and the top are sepia-brown, verging to black, which forms an exceedingly neat contrast to the white of the other parts of the fl.; spikes erect. Winter and spring. l. 9 to 15 in. long. Assam. 1837. (W.O.A. 143.) Cool or intermediate house.

C. Bec'caril. fl. 1 to 5, large, yellowish-white; sep. 1½ in. long; pet. much narrower; lip 3-lobed as long as the sep., with 5 to 7 reddish keels. New Guinea. var. *brachyp'tera*, see *C. brachyptera*.

C. borneen'sis. fl. about 1 in. long; sep. and narrow pet. whitish; lip marked with reddish-brown; raceme about 5 in. long. l. obovate. *Pseudobulbs* ovoid, 2-leaved. Borneo. 1893.



Coelogyne brachyptera

C. brachyp'tera. fl. 3 to 6; sep. green, 1½ in. long, narrowly lanceolate; pet. shorter, almost linear; lip resembling that of *C. pandurata*, green sprinkled with sepia-black, but smaller and lighter in colour, the front lobe whitish; column green, winged. *Pseudobulbs* 4-sided, 4 to 6 in. h., diphyllous. l. 6 in. long by 1½ in. broad. Raceme apical, erect or curved. Burma. 1881. (B.M. 8582.) SYN. *C. Beccarii brachyptera*, *C. Parishii brachyptera*.

C. brun'nea. A variety of *C. fuscescens*.

C. burman'ica. A synonym of *Pleione burmanica*.

C. can'dida. A synonym of *Pleione maculata*.

C. carina'ta. fl. sep. and pet. whitish-green, 1 in. long; lip spotted with brown, 3-lobed; scape 4 to 8 in. long, 6-fld. l. oblong-lanceolate, 5 in. long. *Pseudobulbs* 4-angled, 2 in. long, 2-leaved. New Guinea. 1895.

C. chlorop'tera. fl. 4 to 8, about 1 in. across; sep. and pet. bright greenish-yellow; the 3-lobed lip marked and keeled red-brown. *Pseudobulbs* obscurely 4-sided, 1 to 1½ in. h., diphyllous. l. 4 to 6 in. long, 1 in. broad. Philippines. 1883. (X.O. 3, 235.)

C. cilia'ta. fl. yellow and white, with brown markings. Autumn. Compact growing, with light green leaves, and *pseudobulbs* about 4 in. h. Philippines.

C. cinnamo'mea. fl. 3 to 4, yellowish-white, 1½ in. across; lip 3-lobed, side lobes brown with lighter stripes, margined yellow, mid-lobe viol-shape, bluntly pointed, reflexed at tip, brown and yellow. rhiz. creeping. *Pseudobulbs* about 3 in. h. l. 12 to 15 in. long, including foot-stalk, 1 to 1½ in. broad. Java. 1909.

C. Clark'ei. fl. sep. and pet. light brown; lip yellowish-brown, margined with brown. Allied to *C. prolifera*. Habitat? 1893.

C. con'color. A synonym of *Pleione concolor*.

C. corona'ria. A synonym of *Eria coronaria*.

C. corruga'ta. * fl. 1½ in. wide, sep. and pet. pure white; lip white, with a yellow disk in front, and veined with orange; racemes erect, shorter than l. Autumn. l. twin, about 6 in. long, leathery. *Pseudobulbs* much corrugated, yellowish. India. 1866. Cool house, needing a decided rest. (B.M. 5601.)

C. corymbo'sa. * fl. 3 to 7, about 3 in. across; sep. and pet. white; lip white, pointed, with 2 ocellate yellow brown-edged blotches. June. *Pseudobulbs* 2 in. h., obscurely 4-sided. l. 4 to 6 in. Himalaya. 1876. (B.M. 6955; A.B.G.C. 8, 185.)

C. crista'ta. * fl. fragrant in some forms, 3 to 4 in. wide; sep. and pet. snow-white; lip white, with a large blotch of rich yellow in the middle, veins ornamented with a golden crest-like fringe; raceme somewhat drooping, 5- to 8-fld. December to March. l. twin, narrow, leathery, dark green. *Pseudobulbs* roundish oblong, smooth,

shining, apple-green, 2 to 3 in. h. Nepal. 1837. (B.M. 8477; W.O.A. 501.) A very popular, showy, easily grown species. Though capable of resisting low temperatures better results are obtained when the plants are grown in the cool house during summer and in winter and spring kept at 50 to 55° F. Abundance of water is needed from early April to October but through the winter infrequently. Of rather straggling habit, it can be grown in shallow pans or on tree-fern sections. var. *al'ba*, fl. pure white throughout, *pseudobulbs* set at greater intervals on the rhizome. (L. 173; W.O.A. 54.) *Chatsworth*, fl. larger than in type, usually 8 on a spike; *citr'na*, a synonym of var. *Lemoniana*; *hololeu'ca*, a synonym of var. *alba*; *Lemonia'na*, middle of lip stained delicate lemon. Nepal; *ma'for*, larger than type, with stouter sep. and pet. India; *max'ima*, sep. and pet. very broad, side lobes of lip shallow, 1836; *Woodland's* var., fl. white, faintly tinged lemon-yellow in the throat.

C. Cum'ingii. fl. 5 or 6; sep. and pet. white; lip white, with yellow down the middle. Summer. 2 ft. h. Singapore. 1840. (B.M. 4645; B.R. 27, 29.) A pretty species, retaining its beauty for a considerable period.

C. cu'pres. fl. somewhat resembling those of *C. speciosa*, but smaller, drooping; stalks bearing 5 to 8 bracts. l. oblong. *Pseudobulbs* 2 or 3 in. long. Sumatra. (X.O. 3, 263.) 1892.

C. Daya'na. fl. light ochreous; sep. and pet. narrow, acute; lip broad, 3-lobed, the side lobes striped dark brown, wavy, the mid-lobe somewhat quadrate, point reflexed, crenulate, with a dark brown crescent, 2 keels run from base of lip to base of mid-lobe where they divide into 6; infl. 2 to 3 ft. long, many-fld. May, June. l. stalked, oblong, 18 to 24 in. long, acuminate, stiffly plicate. *Pseudobulbs* long, narrow, fusiform, 5 to 9 in. h. Borneo. 1884. (L. 687; W.O.A. 247.)

C. ela'ta. fl. 5 to 12 opening in succession, medium-sized; sep. and pet. white, narrowish; lip white, with a forked, yellow band in centre, and 2 orange-striped crests on disk; racemes erect springing with the l. from the apex of the *pseudobulbs*. Spring. l. 12 to 18 in. long, 2 to 3 in. wide. *Pseudobulbs* 3 to 6 in. h., stout, oblong, angled. Tongoo, Darjeeling (8,000 to 9,000 ft.). 1837. (B.M. 5001; A.B.G.C. 8, 188.)

C. el'e'gans. A synonym of *C. Huettneriana*.

C. fimbria'ta. fl. sep. yellowish-green or brownish, ovate-lanceolate, $\frac{1}{2}$ in. long; pet. filiform; lip yellow, streaked with reddish-brown, mid-lobe fringed; scape 1 to 2 in. long, 1- or 2-fld. Summer. l. sessile, 2 to 5 in. long, lanceolate. *Pseudobulbs* ovoid-oblong, $\frac{1}{2}$ to 1 $\frac{1}{2}$ in. long. Khasia, China. (B.R. 868.)

C. flac'cida. fl. 1 $\frac{1}{2}$ in. wide with a somewhat heavy odour; sep. and pet. whitish; lip white, stained with pale yellow in front, and streaked with crimson towards its base; racemes pendulous, 7- to 12-fld. Winter and spring. l. twin, dark green, leathery. *Pseudobulbs* oblong. Nepal. (B.M. 3318; B.R. 27, 31; A.B.G.C. 8, 183.) Requires a decided rest.

C. flav'ida. fl. 8 to 10, yellow, $\frac{1}{2}$ in. across; spikes erect, bracteate; scape slender. Spring. l. 3 to 6 in. long, petiolate, narrow-lanceolate, acuminate. *Pseudobulbs* 1 to 2 in. long, distant, on a slender, scaly rhizome. Sikkim. 1838. (A.B.G.C. 8, 191.)

C. flexuo'sa. fl. $\frac{1}{2}$ in. across, white, with a slight yellow stain across middle of lip, extended as a narrow line on either side of disk to near base, where the lip is very sharply constricted, forming a narrow, transverse channel underneath. Java. 1892.

C. Foersterman'ni. fl. white, with some yellowish-brown on disk of lip; sep. and pet. ligulate, acute; lip 3-fld, lateral lobes rounded, mid-lobe rounded, apiculate; peduncles sometimes 40-fld. l. cartilaginous, ribbed, 1 $\frac{1}{2}$ ft. long, 3 in. or more wide, on very short petioles. Sunda Is. 1887.

C. fulgino'sa. fl. 1 to 3, expanding one at a time, 2 in. across; sep. and narrower pet. brownish-white, tinged rosy; lip similarly coloured, mid-lobe nearly covered and margined with sooty-black hairs; racemes shorter than l. Summer. l. broadly lanceolate, 5 to 7 in. long. *Pseudobulbs* 2 to 3 in. long. N. India. 1838. (B.M. 4440.) Habit straggling, suitable for a raft.

C. fusces'cens. fl. large; sep. and pet. pale yellowish, suffused with brown-red; tipped with white; lip edged with white and streaked with orange-yellow, and having on each side of base 2 spots of cinnamon-brown; raceme slightly pendulous, 6- to 12-fld. Winter. l. about 9 in. long, broad, dark green. *Pseudobulbs* about 4 or 5 in. h. Moulmein. (A.B.G.C. 8, 181; B.M. 5494.) var. *brun'nea*, fl. brown.

C. Gardneria'na. fl. 10 to 15, large, pure white, except at base of lip, where they are stained with lemon; segs. narrow; raceme long, nodding; bracts large, white or brown, fleshy. Winter. l. twin, lanceolate, thin, bright green, 1 to 1 $\frac{1}{2}$ ft. long, 3 in. wide. *Pseudobulbs* 4 to 6 in. long, narrow, tapering from the base upwards. Khasia. 1837. (W.O.A. 153.) Intermediate house in winter, cool in summer. SYN. *Neogyne Gardneriana*.

C. glandulo'sa. fl. pure white, 1 $\frac{1}{2}$ in. across, in a nodding raceme; front lobe of lip ovate, marked on disk with yellow lines. l. oblong-lanceolate. *Pseudobulbs* ovate, sulcate. Nilghiri Hills. 1882.

C. Gow'eri. fl. sep. and pet. snow-white; lip white, with 3 parallel raised lines and a lemon blotch on disk; raceme pendulous,

many-fld. Winter and spring. l. lanceolate, about 6 in. long, bright green. *Pseudobulbs* ovate, shining green. Assam. 1869. A lovely small species, suitable for cultivation on a block of wood; requiring cool treatment.

C. graminifo'lia. fl. nearly 2 in. across; sep. white, narrowly oblong-lanceolate, acute; pet. similar, but rather narrower; lip 3-lobed, lateral lobes white, streaked brown, oblong, mid-lobe orange-yellow, with 3 whitish ridges; raceme 2- to 4-fld.; scape 1 to 2 in. long, reflexed. January. l. 2, grass-like, 1 to 1 $\frac{1}{2}$ ft. long. *Pseudobulbs* 1 to 1 $\frac{1}{2}$ in. long. Moulmein. 1888. (B.M. 7006.)

C. Hookeri'na. A synonym of *Pleione Hookeriana*.

C. Huettneria'na. fl. white, 8 to 10 in an arched raceme; lip toothed, with a rounded-ovate mid-lobe; bracts 1 in. long, cymbiform; scape 7 in. long. Summer. l. petiolate, oblong-lanceolate. *Pseudobulbs* fusiform, much wrinkled. Tenasserim. (W.O.A. 459 as *C. lactea*.) SYN. *C. elegans*.

C. hu'milis. A synonym of *Pleione humilis*.

C. integer'rima. fl. 8 to 12, 1 $\frac{1}{2}$ in. across, light green; lip with 4 brown bands. Summer. *Pseudobulbs* 1 to 2 in. h., smooth, somewhat cylindrical. l. 3 to 5 in. long, 1 in. broad. Racemes arching. Philippines. 1890. (B.M. 8856.)

C. lac'tea. A synonym of *C. Huettneriana*.

C. lagena'ria. A synonym of *Pleione lagenaria*.

C. lamella'ta. fl. whitish-green; sep. and pet. oblong-lanceolate, keeled, 1 $\frac{1}{2}$ in. long; lip 3-lobed, corrugated; scape erect, 3- to 5-fld. New Hebrides. 1895.



Coelogyne Lawrenceana

C. Lawrencea'na. fl. large, showy; sep. 2 $\frac{1}{2}$ in. long, $\frac{1}{2}$ in. broad, tawny-yellow; pet. linear; lip 2 in. long, front lobe 1 in. broad or more, broadly ovate, white with crimped edges and central thickened tongue, slightly reflexed; side lobes erect, white, margined and spotted brown; at base of winged, hooded, creamy-white green tinged column is a clear yellow blotch, bearing 5 raised fimbriated keels, with red-brown papillae more numerous and pronounced on an orange-yellow and sepia-brown ground. June. *Pseudobulbs* ovoid, 2 to 4 in. h., diphyllous. l. 7 to 12 in. long, 1 to 1 $\frac{1}{2}$ in. broad; peduncle from apex of bulb, 6 to 9 in. long, 1- to 2-fld. Annam. 1904. (B.M. 8164.) Winter temperature about 55° F. var. *super'ba*, fl. larger, finer.

C. lentigino'sa. fl. 1 $\frac{1}{2}$ in. across; sep. and pet. straw-coloured or clear yellow; side lobes of lip margined brown, the larger mid-lobe white with orange blotches; broadly clawed; raceme 5- to 8-fld. (including scape) 4 to 5 in. long, sheathed up to fl. Summer. l. linear-oblong, 6 to 8 in. long. *Pseudobulbs* 3 to 4 in. long, obtusely 4-angled Tenasserim. 1847. (B.M. 5958; W.O.A. 442.)

C. Lowii. A synonym of *C. asperata*.

C. macrobulbon. A synonym of *C. Rochussenii*.

C. maculata. A synonym of *Pleione maculata*.

C. Mascangaena. * fl. sep. and pet. light ochre; lip 3-fid, marked with maroon-brown, and ochre-coloured veins; raceme pendulous, many, but loosely, fld. *Pseudobulbs* pyriform, bearing 2 Stanhopea-like l. Assam. 1879. (B.M. 6979; L. 548.) Intermediate to cool house.

C. Mayeria. * fl. 3 to 7, 2½ in. across, with green sep. and pet., and a green and black lip, resembling those of *C. pandurata*, but smaller. *rhiz.* freely branching with pseudobulbs at intervals. Trop. Asia. 1894. Succeeds well on a tree-fern section.

C. media. * fl. on spikes 10 in. h.; sep. and pet. creamy-white; lip yellow and brown. *Pseudobulb* short, round. l. 7 in. long. Khasia. 1837. Pretty, small-growing, winter-flowering.

C. Micholiczia. * fl. 2 to 4, opening successively, pure white except the thick, fleshy, raised, dark chocolate-brown disk. Summer. Resembling *C. speciosa* in habit but scapes taller. New Guinea. 1895. (X.O. 3. 256.)

C. minia. * fl. 3 to 7, small, cinnabar-red, on short erect spikes. *rhiz.* ascending. *Pseudobulbs* spaced, slender, obscurely ovate, red-shaded. l. 4 to 5 in. long, 1 in. broad. Java.

C. Moorea. * fl. 4 to 12, on erect spikes, superficially resembling those of *C. cristata*; lip with golden hairs on disk, mid-lobe broadly ovate. *Pseudobulbs* ovate-globose, clustered, diphyllous. l. 12 to 16 in. long, rather fleshy. Annam. 1904. (B.M. 8297.) var. *magnifica*, has fl. 4 in. across; *Wes'tonbirt* has fl. larger than type.

C. Mosslae. * fl. pure white, 1½ in. across, with a yellow, crescent-shaped mark on lip; raceme 6 in. long, about 6-fld. Summer. l. 6 in. long. *Pseudobulbs* 1½ in. long, ovate, 2-leaved. Nilghiri Hills. 1894. (G.C. 15 (1894), 401.) Markings much as in *C. ocellata*.

C. nervosa. * fl. 2 to 4, sep. and pet. white, acute, former 1 to 1½ in. long; lip white and yellowish-brown; bracts very large; scape erect, sheathed up to the few fl. Summer. l. oblong-lanceolate, 4 to 6 in. long. *Pseudobulbs* 2 to 3 in. long, ovoid. Nilghiri Hills.

C. ocellata. * fl. 5 to 7, sep. and pet. pure white; lip white, streaked and spotted with yellow and brown at base; side lobes with 2 bright yellow spots on each; column bordered with bright orange; racemes upright. March, April. l. long, narrow, bright green, longer than racemes. *Pseudobulbs* ovate. India. 1822. (B.M. 3767.) Pretty species for cool house. var. *maxima* has a raceme of about 8 star-like fl., segs. lanceolate, lip saddle-shaped, with terminal lobe marked with yellow. 1879. (L. 243.)

C. ochracea. * fl. 7 to 9, 1½ in. across, white, very fragrant, in erect racemes; lip with two bright ochreous-yellow, orange bordered, horseshoe-shaped blotches on disk. Spring. l. 2 or 3, lanceolate. *Pseudobulbs* 2 to 4 in. h., 4-sided. NE. India. 1844. (B.M. 4661; B.R. 32, 69; A.B.G.C. 8, 182.)

C. odoratisima. * fl. 2 to 5, fragrant, pure white, except the centre of the lip, which is stained yellow; raceme slender. Summer. l. twin, pale green, lanceolate, about 4 in. long. *Pseudobulbs* thickly clustered about 1 in. h. India. 1864. (B.M. 5462.) This species grows freely in a cool house.

C. ovalis. * fl. 2 to 4. Very similar to *C. fimbriata* but stronger and with slightly larger fl. Himalaya. 1837. (A.B.G.C. 8, 187.) A

C. pachybulbon. * fl. about 9, 1½ in. across; sep. and narrower pet. straw-yellow; lip 3-lobed, side lobes erect, fuscous-brown and white, mid-lobe oblong, reflexed, light brown to yellow. *infl.* arching, 9 in. long. *Pseudobulbs* stout, brownish. l. 12 to 18 in. long. Malaya.

C. pandurata. * fl. 5 to 15, up to 4 in. across, very fragrant; sep. and pet. of a very lively green; lip of same colour, with several deep velvety black, parallel, raised ridges upon its surface, oblong, but curiously bent down at sides, thus assuming somewhat the form of a violin; raceme 15 to 30 in. long, arching, longer than the l. June, July. l. bright shining green, 1 to 1½ ft. long. *Pseudobulbs* large, broadly ovate, compressed at edges, set at intervals. Borneo. 1853. (B.M. 5084; W.O.A. 63; L. 86.) Requires a basket or raft.

C. Parishii. * fl. 3 to 5, about 3 in. across, resembling those of *C. pandurata* in form and colour; keels on lip fringed. Spring. Spike from apex of the *pseudobulbs*, which are diphyllous, 3 to 6 in. h. 4-sided. Moulmein. 1862. (B.M. 5323.) var. *brachyptera*, see *C. brachyptera*.

C. peltates. * fl. 4 to 6, 2½ to 3 in. across, resembling those of *C. pandurata*, except in the lip, which is creamy-white with yellowish-brown markings. Summer. *Pseudobulbs* crescent-shaped, compressed. Borneo. 1880. (L. 258.)

C. perakensis. * fl. many, about 1 in. across; sep. buff-yellow; keeled; pet. greenish; lip light yellow with deeper yellow disk; scape erect. l. 7 in. long, oblong-lanceolate. Malaya. Before 1929. (B.M. 8203.)

C. plantaginca. A synonym of *C. Rochussenii*.

C. pogonoides. A synonym of *Pleione pogonoides*.

C. praecox. A synonym of *Pleione praecox*.

C. prolifera. * fl. greenish-yellow, small; scape long, slender, many-fld. l. 3 to 7 in. long, petiolate, lanceolate. *Pseudobulbs* 1½ to 2½ in. long, distant, ovoid or oblong, compressed. Trop. Himalaya. 1837. (A.B.G.C. 8, 196.)

C. psittacina. * fl. 4 to 6, large; sep. 1½ in. long, like the filiform pet. greenish-yellow; lip large, orange-red at base with 3 ragged dark brown keels; mid-lobe broad, spreading, white, toothed; side lobes shaded and marked with brown. Summer. *Pseudobulbs* 3 to 5 in. h., somewhat conical. l. 12 to 15 in. long; scape taller. Amboina. (X.O. 2, 153.)



Coelogyne pandurata

C. pulchella. * fl. about 1 in. across, pure white, except a brown-black blotch on disk of lip and a smaller at base; scapes terminal, slender, bearing several fl. close together. Spring. l. rather thick, oblong-lanceolate. *Pseudobulbs* ovoid-oblong, 2-leaved. Habitat? 1898. (B.M. n.s. 28.)

C. purpurascens. * fl. nearly white, small; scape 3 to 4 in. long, 1- to 3-fld. l. 1 to 4 in. long, ½ to ¾ in. broad, leathery, often purplish. *Pseudobulbs* very slender. l. 1. Ceylon. (H.I.P. 2110.)

C. Reichenbachiana. A synonym of *Pleione Reichenbachiana*.

C. Rhodea. * fl. A synonym of *C. Rossiana*.

C. rigida. * fl. yellow, with 3 red ridges on disk of lip; sep. ½ in. long; scape (with the drooping raceme) 6 to 8 in. long, rigid. l. petiolate, elliptic-lanceolate, 4 to 6 in. long. *Pseudobulbs* 3 to 5 in. long, narrow-oblong. Tenasserim.

C. Rochussenii. * fl. 1½ to 1¾ in. across; sep. lanceolate, the upper slightly broader; pet. narrower, all inclined forward and yellowish-green; lip 3-lobed, mid-lobe white, cordate, with toothed margins, side lobes white, lined with red-brown on their inner surfaces, crest with 3 or 4 white tomentose keels; column winged, toothed on upper margin. *Pseudobulbs* 8 in. h., cylindrical, tapered, diphyllous. l. 12 in. long by 5 in. broad, elliptical-oblong, narrowed to a short, channelled base. Raceme pendulous, 18 to 24 in. long, of 40 fl. or more. Java. (X.O. 1, 85.)

C. Rossiana. * fl. sep. and pet. creamy-white, ligulate, acute; lip mostly ochre, disk, broad claw, and top of mid-lobe white; column white with a brown mid-line in front; bracts linear, acuminate. Summer. l. 2, long-petiolate, cuneate-oblong-lanceolate, acute, over 1 ft. long and 1½ in. broad. *Pseudobulbs* 2 to 3 in. long, nearly pear-shaped. Burma. 1884. (B.M. 7176.)

C. Rumph'ii. fl. 1 or 2, spike 6 in. long; sep. and pet. greenish, sep. lanceolate, pet. linear; lip pandurate, side lobes spotted red, mid-lobe pure white. l. 1 ft. long, obovate. *Pseudobulbs* oblong. Amboina. 1896.

C. San'derae.* fl. 4 to 10, white, 2 in. across, with a yellow blotch on lip and a fringe of long, brown hairs on the 3 parallel keels; scapes erect. Summer. l. ovate-lanceolate. *Pseudobulbs* ovate, tapering, 3 to 4 in. long. Upper Burma. 1893. (R. 2, 56.)

C. Sanderia'na.* fl. 7 to 10, 3 in. across, snow-white, large and showy; sep. keeled, acute; pet. lanceolate, acute, dilated above; side lobes of lip marked with 3 brown stripes, mid-lobe yellow with a few white marks and yellow crests. Spring. l. petiolate, cuneate-oblong, acute, 10 to 15 in. long. *Pseudobulbs* ovoid, 2 to 4 in. long, diphyllous. Sunda Is. 1887.

C. Schilleria'na. A synonym of *Pleione Schilleriana*.

C. siamen'sis. fl. sep. and pet. pale green; lip yellow, marked with brown. Allied to *C. lentiginosa*. Siam. 1914.

C. spar'sa. fl. white; lip 3-lobed, having a brown spot in front of the keels, smaller ones on side lobes, and a yellow one at base; peduncle 1- to 7-fld. l. cuneate-oblong, acute, glaucous, 3 to 4 in. long, 1 in. broad. *Pseudobulbs* glaucous, fusiform. Philippines. 1883. Charming dwarf plant; fl. fragrant.

C. specio'sa.* fl. 1 to 3, over 3 in. across; peduncle slender; sep. and pet. brownish or olive-green, the latter much narrower than sep.; lip oblong, very beautiful both in the colour and marking, and in the exquisite fringe of the crests and margin, ground-colour yellow, variously veined with dark red, base dark brown, apex pure white. l. solitary, 9 in. long, 2 in. wide, oblong-lanceolate, thin, dark green. *Pseudobulbs* somewhat oblong, 1 to 3 in. long. Java, Sumatra. 1845. Almost a perpetual bloomer. (B.M. 4889; W.O.A. 494; B.R. 33, 23.) var. *alba*, sep. and pet. greenish, lip soft, flesh-colour. (B.M. 9539.) Java; *ma'jor*, fl. larger and deeper colour than the type. Java; *salmonic'olor*, fl. solitary, salmon, lip tessellated with brown, l. undulate, *pseudobulbs* tetragonal, pear-shaped. 1883.

C. stella'ris. fl. sep. and pet. green; lip white, marked with brown lines on side lobes. *Pseudobulbs* tetragonal. Borneo. 1886.

C. suaveo'lens. fl. 9 to 12, glistening white, fragrant, $\frac{1}{2}$ in. wide; sep. lanceolate, keeled; pet. narrower; lip 3-lobed, side lobes erect, mid-lobe reflexed, oblong, tapered, with 5 obscure, crenulated laminae. *Pseudobulbs* $2\frac{1}{2}$ in. h., conical, set at intervals on the rhizome, diphyllous. l. 8 to 10 in. long, 2 in. broad, lanceolate, conduplicate at base. Spike 6 in. h. from young growth. Shan States. (A.B.G.C. 5, 40.)

C. sulphu'rea. fl. 9 to 15, $\frac{1}{2}$ in. wide, yellowish-green; lip white with a yellow middle band and cleft mid-lobe; pet. linear reflexed; column with a yellow blotch at base. *Pseudobulbs* 1 to 2 in. h., conical. l. 6 to 10 in. long. Java. 1871.

C. Swania'na. fl. 12 to 20, 2 in. across; sep. white, 1 in. long; pet. white, narrower; lip pale brown, darker round margins and tips of lobes; column yellow; raceme 1 ft. long, pendent. May and June. l. 2, 6 to 8 in. long, elliptic-lanceolate; petioles 2 to 3 in. long. *Pseudobulbs* $3\frac{1}{2}$ to 4 in. long, obtusely 4- to 6-angled. Philippines. 1892. (B.M. 7602; R. 2, 92.)

C. ten'uis. fl. light buff, small. Borneo. 1893. Allied to *C. borneensis*, but with slender scapes, and 1-lvd. *pseudobulbs*.

C. testa'cea. fl. $1\frac{1}{2}$ in. across; sep. and pet. pale brown; side lobes of lip dark brown, margined white, narrow, mid-lobe broad; column white; raceme many-fld., pendulous. l. 2, 9 to 15 in. long, lanceolate, petiolate. *Pseudobulbs* 3 to 5 in. long, narrow-ovoid. Singapore. 1842. (B.M. 4785.)

C. Thunia'na. A synonym of *C. uniflora*.

C. tomento'sa.* fl. 15 to 30, 2 to $2\frac{1}{2}$ in. across; sep. and pet. light orange-red; lip white, streaked red within, obovate, mid-lobe 3 keeled; racemes pendulous, rachis and pedicels reddish tomentose. Summer. l. 9 to 12 in. long, variable. *Pseudobulbs* elongate-ovoid, 2 to 3 in. long. Borneo. 1873.

C. triplicat'ula. fl. sep. $1\frac{1}{2}$ in. long, over $\frac{1}{2}$ in. wide at base, lanceolate, honey-yellow with a few brown lines; pet. filiform; lip $1\frac{1}{2}$ in. long, side lobes erect, veined yellowish, flushed sepia-brown, front lobe rounded with reflexed, softly fringed margins, base with 3 yellow waved keels, the 2 outer extending on the blade, becoming black-brown and meeting; column winged, hooded, with a red-brown basal blotch. *Pseudobulbs* cylindrical, 4 in. h., diphyllous. l. 3 to 6 in. long. Burma. 1846. (X.O. 2, 166.) Habit of *C. fuliginosa* with which it has been confused, but always ascending.

C. unifl'ora. fl. white or flesh-coloured; sep. 1 in. long; lip with 3 to 7 orange spots; scape $\frac{1}{2}$ to 1 in. long, 1- or 2-fld. Summer. l. 3 to 6 in. long, erect, narrow-lanceolate. *Pseudobulbs* up to 1 in. long, ovoid, crowded. India. (A.B.G.C. 8, 192.) SYN. *C. Thunia'na*, *Pamisia uniflora*.

C. val'ida. fl. 4 or more, on a slender peduncle, 3 to 5 in. long, cream-white, except lip; sep. oblong, $1\frac{1}{2}$ to $1\frac{1}{4}$ in. long, $\frac{1}{2}$ in. wide at base, tapering to a blunt apex; pet. as long, very narrow; all segs. directed forwards; lip white, as long as sep., side lobes erect, upper margins parallel with column, front margins projecting, fringed, mid-lobe $\frac{1}{2}$ in. long, deflexed, fringed and crimped on margin, base ochre, almost red, hairy, furnished with 2 curved, red-haired keels

enclosing a yellow area. *Pseudobulbs* at intervals on rhizome, 3 to 4 in. h., oval, compressed, ribbed. l. 2, stalks 2 to 3 in. long, blade lanceolate, 9 to 15 in. long, $1\frac{1}{2}$ to 2 in. wide. Summer. Assam. 1918. Intermediate house. fl. somewhat resemble those of *C. Sanderia*, but are larger.

C. Veitch'ii. fl. pure white, about 1 in. across; racemes drooping, 2 ft. long, many-fld. Summer. l. lanceolate, 6 in. long. *Pseudobulbs* fusiform, 3 to 4 in. long. New Guinea. 1895. (B.M. 7764.)

C. venus'ta.* fl. numerous, 1 to $1\frac{1}{2}$ in. across; sep. and much narrower pet. buff-yellow; lip whitish with the side lobes and centre of the mid-lobe light yellow; base with 6 brown-tipped keels. Spring. *Pseudobulbs* at short intervals on the rhizome, 2 to 3 in. h., diphyllous. l. 5 to 8 in. long. infl. pendulous 10 or more in. long. Yunnan. 1904. (B.M. 8262.)

C. vires'cens. Closely allied to *C. Parishii*. fl. 3 to 7, with green sep. and pet; lip marked with deep sepia-brown. Summer. Annam. 1904.

C. visco'sa. fl. sep. and pet. white; lip white, side lobes broadly streaked with rich brown. Summer. l. dark green, tapering towards base. *Pseudobulbs* fusiform. India. 1870. Rare, near *C. flaccida*.

C. Wallichia'na. A synonym of *Pleione Wallichiana*.

C. Zurowet'zii. fl. about 3 in. across; sep. $1\frac{1}{2}$ in. long, $\frac{1}{2}$ in. broad, the lower somewhat falcate, with the narrower pet. bright yellow-green; lip 3-lobed, side lobes whitish, veined chestnut, erect, slightly incurved; mid-lobe shortly clawed, abruptly spreading, whitish suffused chestnut, palest at base, with warts white at first, then chestnut, except at apex, between lateral lobes are 2 white green-tipped keels. rhiz. ascending. *Pseudobulbs* overlapping, 3 in. long by $1\frac{1}{2}$ in. broad. l. 10 in. long by 2 or more broad. Borneo. 1933. (O.R. 1934, 45.) Allied to *C. peltastes*.

E. C.

coerules'cens, bluish.

coeru'leus -a -um, blue.

COFF'FEA (from the Arabic name of the beverage made from the dried seeds). FAM. *Rubiaceae*. A genus of perhaps 40 species of shrubs or small trees, natives of Trop. Asia and Africa. Leaves evergreen, opposite with interpetiolar stipules. Flower white or cream, fragrant, clustered in leaf-axils; calyx 5- or 4-parted; corolla salver-shaped, tube straight, throat often hairy, lobes oblong. Fruit a berry, globose or oblong, usually with 2 horny seeds. The seeds form the coffee 'beans' of commerce. Some species are grown for ornament but their main interest is as economic plants. They need stove or warm house conditions, plenty of water, ample pot room and a compost of turfy loam and sand. Best raised from ripe cuttings in sand under a bell-glass in moist heat, the plants thus raised flowering and fruiting better than seedlings.

C. arab'ica. Arabian Coffee. 5 to 15 ft. h. l. oblong, 3 to 6 in. long, rather thin, with a long slender point, dark glossy green above, paler beneath. fl. in clusters of 4 or 5, cor. 5-, rarely 4-parted. September. fr. deep crimson. Abyssinia, Angola. 1696. (B.M. 1303.) var. *variegata*, l. variegated.

C. bengalen'sis. Small shrub. l. ovate, slender-pointed, entire, spreading, almost sessile. fl. solitary or in pairs or threes, larger than in *C. arabica*, segs. scarcely twice as long as wide. India, Malaya. (B.M. 4917.) Little grown for its seeds now.

C. Dewev'rel. Tree up to 45 ft. h. l. ovate-oblong, 10 to 12 in. long, 4 to 6 in. wide. Cor. 5-parted, tube $\frac{1}{2}$ in. long; stamens exerted. fr. red. Congo.

C. laurin'a. A synonym of *Craterispermum laurinum*.

C. libe'rica. Liberian Coffee. More robust than *C. arabica* with longer, wider l. with a shorter point. fl. in a dense cluster of 15 or more; cor. segs. usually 7. Liberia. 1875. With *C. arabica* the chief source of Coffee. It thrives in hot climates where *C. arabica* will not grow well.

C. Maragogi'pa. A S. American seedling of *C. arabica*.

C. robu'sta. Vigorous. l. large, ovate, apiculate. Congo. (G.C. 28 (1900), 311.)

C. stenophyl'la. About 10 ft. h. l. 4 to 6 in. long, relatively narrower than in *C. arabica* and with a longer, more tapering point, nearly sessile. fl. about $\frac{1}{2}$ in. long, solitary or in pairs or threes; pedicels short; cor. segs. usually 9. W. Africa. 1896. (B.M. 7475.)

C. Zanguebar'iae. About 6 ft. h., glabrous, branches ash-coloured. l. ovate or obovate, obtuse or shortly pointed, 2 to 4 in. long, veins in 6 pairs. fl. in dense clusters; cor. segs. 6 or 7. Berry red, becoming black. Trop. Africa.

coffea'tus -a -um, coffee-coloured.

COFFEE. See *Coffea*.

COFFEE-TREE. See *Gymnocladus*, *Polyscias* *Guilfoylei*.

Coggy'gria, ancient Greek name.

cogna'tus -a -um, closely related.

Cogniauxia'nus -a -um, in honour of A. Cogniaux, 1841-1916, director of the botanical museum, Brussels.

coherent, members of one organ, e.g. petals, joined together (cf. adherent).

cohesion, union of like organs.

COHUNE PALM. See *Orbignya Cohune*.

Coignet'iae, in honour of Mme Coignet, c. 1883.

COIR. The outer fibrous pericarp of the coconut, used for rope-making, &c.

CO'IX (old Greek name for a reed-leaved plant). A genus of 3 E. Indian species of tall, broad-leaved grasses with a globular or oval leaf-sheath about $\frac{1}{2}$ in. long at the end of each peduncle, which becomes hard and pearl-grey, from the apex of which project the staminate spikelets and the stigmas of the pistillate flower contained within the 'bead' as the very hard receptacle is called. *C. Lacryma-Jobi* is cultivated as a curiosity in the open sunny border, seed being sown under glass in heat in February or March or in the open in May.

C. Lacryma-Jo'bi. Job's Tears. Annual with smooth branching stems about 3 ft. h. l. $\frac{1}{2}$ in. or more wide, sheath smooth, ligule very short, split. fr., the 'tears', about $\frac{1}{2}$ in. long. Autumn. Tropics. (B.M. 2479 as *C. Lacryma*.) var. *au'rea zebri'na* has yellow-striped l.-blades. (SYN. var. *variegata*.) The fr. are frequently used as beads, and are used as food in India, and medicinally in China.

-cola, suffix implying loving, as *rupicola*, rock-loving. A

CO'LA (from the native name). FAM. *Sterculiaceae*. A genus of about 40 species of evergreen trees, natives of Trop. Africa. Leaves entire or lobed. Flowers unisexual or polygamous, clustered in leaf-axils or in terminal cymes; calyx 5-cleft; petals absent. Fruit of 4 or 5 leathery or woody carpels. Grown largely in Africa and in the W. Indies for its nuts which are said to sustain the natives in feats of endurance, and are used in medicine and for other purposes. *C. acuminata* is the source of the Cola or Goora Nut. It will grow best in rich, light loam, and is increased by seeds.

C. acumina'ta. Tree to 40 ft. with spreading head. l. leathery, oblong-ovate, 4 to 6 in. long, variable. fl. yellow, $\frac{1}{2}$ in. across, in panicles of about 15. January. fr. 5 to 6 in. long. Seed resembling the horse-chestnut, bitter. Trop. Africa. 1868. (B.M. 5699.)

CO'LAX (*Colax*, a parasite). FAM. *Orchidaceae*. A small epiphytic genus chiefly Brazilian, at times placed under *Maxillaria*, *Lycaste*, or *Zygopetalum*. Very closely related to *Zygopetalum* but the pollinia are slightly different. Several hybrids have been recorded between *Colax* and *Zygopetalum* under the name *Zygo-colax*. Under cultivation the temperatures should be as for *Odontoglossum crispum*. Compost should be that advised for *Odontoglossums*, but about one-third of loam fibre should be added.

C. jugo'sus. fl. 2 to 4, 2 to 3 in. across; sep. ovate-oblong, white; pet. nearly equal, white densely spotted with violet-purple; lip shortly clawed, 1 in. long, barely $\frac{1}{2}$ in. in breadth, 3-lobed, side lobes rounded, striated with violet-purple, front lobe rounded with numerous keels on the disk, striated and marked with violet-purple. *Pseudobulbs* 2 to 3 in. h., diphyllous. l. 6 to 10 in. long, 1 to 2 in. broad. *Peduncles* 4 to 8 in. h. Brazil. 1840. (B.M. 5661.) So far the most popular species of the genus. var. *puncta'tus*, fl. greenish-yellow, spotted reddish-black; *rufi'nus*, fl. yellowish-green, spotted black-purple; *vi'ridis*, a synonym of *C. viridis*.

C. placan'therus. fl. usually solitary; sep. over 1 in. long, $\frac{1}{2}$ in. broad; pet. smaller, yellowish-green thickly spotted brown-purple; lip with a longer claw than that of *C. jugosus*, side lobes pale green, streaked with brown, mid-lobe with a whitish purple-flushed central area, greenish near tip, disk smooth. *Pseudobulbs* 2- or 3-phyllous, rather smaller than in *C. jugosus*. Brazil. 1843. (L. 76; B.M. 3173 as *Maxillaria placanthera*.)

C. Puy'dtil. Differs from *C. viridis* of which it is often considered a variety by the hair at the base of the column. Spring. Brazil. (I.H. 369.)

C. trip'terus. fl. 2; sep. and pet. light green; pet. densely speckled with dark brown; lip yellowish-white with lines of minute purple dots on the fleshy disk. Differs from *C. placantherus* by its 3-winged ovary and the broad fleshy callus on the lip. Brazil. 1905.

C. vi'ridis. fl. 1 to 2, sub-globose; sep. green; pet. green spotted with brown-purple; lip lilac, light or dark. *Pseudobulbs* ovoid. l. narrowly lanceolate, 5 to 7 in. long. Variable. Brazil. 1843. (B.R. 1510 as *Maxillaria viridis*.) SYN. *C. jugosus viridis*.

E. C.

colchiciflo'rus -a -um, with *Colchicum*-like flowers.

COLCHICINE. An alkaloid ($C_{22}H_{25}O_6N$) obtained from corms and seeds of *Colchicum autumnale*. It occurs in yellow flakes, crystals, or a whitish-yellow amorphous powder, soluble in water, alcohol, and chloroform. It is very poisonous and should be kept in the dark. It has found a use in horticulture, for if seeds are soaked for a time in a weak solution (0.2 to 0.4 per cent. for 4 to 10 days) before sowing the resulting plants are dwarfed and malformed owing to changes in the number of chromosomes in the cells or in some of them. In many cases the number of chromosomes in the pollen grains and the egg cells is doubled and the seedlings in the succeeding generation differ from the original plants, often being considerably larger. The exact strength of the solution and time of soaking must be ascertained for each species.

COL'CHICUM (from Colchis in Asia Minor). FAM. *Liliaceae*. A genus of between 50 and 60 species closely related to *Bulbocodium* and *Merendera* and bearing a great resemblance to *Crocus* from which the species are easily distinguished by their 6 instead of 3 stamens, and their superior ovary (underground at flowering time). In *Colchicum* and *Bulbocodium* the perianth segments are united to form a long tube, in *Merendera* they are free to the base. In *Bulbocodium* the 3 styles are joined but in *Colchicum* and *Merendera* they are quite separate. The species are widely distributed from Britain to Turkestan and Persia and occur most abundantly in the E. Mediterranean region.

The corms which are covered with a brown tunic drawn out into a longer or shorter neck should be planted in July or early August in a rich well-drained loam which does not dry out rapidly in summer. The flowers of many species precede the leaves and it is important that the latter should remain green as long as possible, until they die down naturally in June or July when the seed ripens. The very large foliage of some species, e.g. *C. speciosum*, makes them undesirable on the rock-garden, but others can well be used there. A sunny place is best for them but some, e.g. *C. autumnale*, will put up with partial shade and this species also succeeds in thin grass. The corms should be planted 3 or 4 inches deep and should be allowed to remain undisturbed unless it is desired to increase them quickly when they should be lifted every other year in July, divided, and immediately replanted. The other means of increase is by seed which should be sown either outdoors in a sheltered place on a good seed bed, covering the seed lightly with fine soil, or in pans in a cold frame. The seedlings should be watered in dry weather up to the end of July. They may be transplanted into nursery beds when 2 years old and there remain till they flower at the age of 3 to 5 years. They should be protected from slugs which are fond of some species and do much damage by the early destruction of the leaves.

The similarity of the flowers and the habit of several species of producing them in autumn has gained the name of Autumn Crocuses for several, and our own native *C. autumnale* has, because of its habitat and that same similarity, been called Meadow Saffron.

Much confusion exists regarding the names of the species comprising this genus partly because many have