
The Jewel Orchids

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In recent years, there has been renewed interest in both experienced orchid growers and the general public in several genera grouped under the common name Jewel Orchids. There are six major genera in the sympodial Jewel Orchid family, *Subfamily Orchidoideae, Tribe Cranichideae, Subtribe Goodyerinae* - *Anoectochilus*, *Dossinia*, *Goodyera*, *Ludisia*, *Macodes*, *Odontochilus* and *Rhomboda*. While these orchids do flower, by and large they are grown for their variegated, often brightly coloured leaves. In their natural habitat, these orchids are terrestrial and are pan-global from Madagascar through Mainland and island Southeast Asia, Australasia, Central and South America and Europe and North America. The demand for some of the rarer species has seen less common leaf-colour forms sell for relatively high prices. The most widely advertised species for sale are *Ludisia discolor* and *Macodes sanderiana* with other *Anoectochilus*, *Goodyera*, *Macodes*, *Odontochilus* and *Rhomboda* species available from specialist dealers. Recent advance in the meristem propagation of these genera has significantly increased the availability and reduced the price of the more common Jewel Orchids.

Most of the genera in this group are small to mid-size terrestrials with creeping horizontal fleshy stems. They are generally found growing in leaf litter on the forest floor, or occasionally as lithophytes in moss beds over rocks. Shade-loving, they require year-round moisture and good fresh air movement. The attractively coloured leaves with sometimes striking variegated patterning are considerably more eye-catching than the small, generally whitish insignificant flowers, although some of the less common species do have more attractively tinted flowers.

Anoectochilus pronounced an-eck-toe-Kye-luss is one of larger genera of Jewel Orchids. *Anoectochilus setaceus* Blume 1825 is the type species for the genus *Anoectochilus* Blume 1825 *Subfamily Orchidoideae, Tribe Cranichideae Subtribe Goodyerinae*. Some 40 species can be found from the Himalayas to New Caledonia as terrestrials or occasional as lithophytes on mossy rocks. They have velvety, very intricately variegated leaf patterns for which they are most often grown as the majority have small insignificant flowers. The common name for *Anoectochilus setaceus* refers to the projecting lip.

Dossinia C.Morren 1848 *Subfamily Orchidoideae, Tribe Cranichideae Subtribe Goodyerinae*. The type species in this monotypic terrestrial genus endemic to Borneo is *Dossinia marmorata* C.Morren 1848

Goodyera a R. Br. 1813 *Subfamily Orchidoideae, Tribe Cranichideae Subtribe Goodyerinae*. *Goodyera repens* [L.]R. Br. 1813 is the type species in a group of more than 100 terrestrial species widely distributed throughout Europe, temperate and tropical Americas, S. E. Asia, the Pacific Islands, New Guinea, Australia, and Madagascar. The genus is mainly terrestrial but occasionally found as an epiphyte with a creeping rhizome, an erect, leafy stem, basal or clustered, several, fleshy, usually petiolate, occasionally reticulate leaves and bloom on erect, terminal, few to many flowered, racemose, often pubescent inflorescence with small, often secund, pubescent or glandular, with sepals parallel to the floral axis, a dorsal sepal that forms a hood with the petals and a unlobed lip that is hollow or saccate basally. The short column has a long, deeply cleft rostellum, a large undivided stigma, 2 often deeply cleft, granulose, pyriform to clavate pollina and an elongate viscidium. The common name for this genus is the net-leafed orchid, and they are named for John Goodyear, an English botanist. Many of the species in this genus do not have the intricately patterned leaves that make the genus *Anoectochilus* so distinctive.

Ludisia A. Rich. 1825 *Subfamily Orchidoideae, Tribe Cranichideae Subtribe Goodyerinae* is a highly variable monotypic terrestrial genus from Southeast Asia and China. Coming from shady humid habitats, the type species *Ludisia discolor* [Ker-Gawl.] Blume 1859 makes a good house plant and can be easily grown by novice orchid growers. It is easily propagated by placing cuttings of the fleshy stems in sphagnum moss, commercial potting mix or in water and roots will appear in a few weeks. This species grows well in a hanging pot with well-drained media. As with other Jewel Orchids, they are principally grown for the coloured leaves rather than the insignificant flowers

Macodes (Blume) Lindl. 1840 *Subfamily Orchidoideae, Tribe Cranichideae Subtribe Goodyerinae*. *Macodes petola* Lindl. 1840 is the type species of this genus of approximately terrestrial to epiphytic 11 species in this genus grown more for the striking coloration and striping of the leaves than for the smaller and less striking flowers. Most species are found in Indonesia. The genus is closely related to *Ludisia* but differs in having non-resupinate flowers.

Odontochilus Blume 1859 *Subfamily Orchidoideae, Tribe Cranichideae Subtribe Goodyerinae*. The type species is *Odontochilus flavescens* (Blume) Blume 1859 (formerly *Anoectochilus flavescens* Blume). A genus of

approximately 50 terrestrial species mostly found in the Himalayan region of the far east is related to the *Goodyearinae*. A feature apparent in most species in the genus is a white midvein to the leaf and most all are found in tropical to subtropical regions. The spreading, 3 lobed lip is adnate to the bottom of the column and has a saccate hypochile, sac globose, hidden between more or less connate bases of the lateral sepals, shortly bifid and containing within it 2 conical calli. The mesochile is channeled and long to shortly fimbriate-toothed and the epichile is divided into two diverging undulate lobules. The stout column has 2 parallel appendages in front of the spur. The single, wide, contiguous or with a constriction separating into two parts stigma is placed in front of the column, or there are 2 distinct stigma devoid of any protuberances. The rostellum is usually twisted, the anther is beaked, there are 2 granular, much variable, generally oblique, unequal, clavate and flattened pollina.

Rhomboda Lindl. 1857 *Subfamily Orchidoideae, Tribe Cranichideae Subtribe Goodyerinae*. The type species is *Rhomboda longifolia* Lindl. 1857. This genus has 27 terrestrial species found from the Himalayas to Malesia and Australia as terrestrial or lithophytic herbs with few leaves and a leafless inflorescence and flowers with free sepals, oblique petals, connivent (converging) to median sepals forming a hood, lateral sepals spreading. Lip adnate to column base, broadly saccate at the base. The hypochile has two short, large peltate glands on the lateral margins, rounded side lobes and two prominent lamellate, closely parallel keels, sometimes with a low keel on flanges. The mesochile is channeled, clawed, usually very short, while the epichile is entire to 2-lobed. The clavate column has two wings at front, two lateral stigmas and slender rostellum, while the anther is ovate and acute. Two pollinia are sectile with stipe and viscidium.

Further research conducted identified five more Jewel Orchid genera.

The genus *Aspidogyne* Garay Bradea 2: 200 (1977) *Subfamily Orchidoideae, Tribe Cranichideae, Subtribe Goodyerinae* comes from Central and South America is a group of some 80 terrestrial species. Many of the species now in this genus were previously *Erythroides* but have been separated as they are new world orchids whilst *Erythroides* now only applies to old world species. Some other members of the genus *Erythroides* have been placed in the genus *Microchilus*. The common name or meaning for this genus is the Shield Orchid. The type species is *Aspidogyne foliosa* (Poepp. & Endl.) Garay 1977. The genus synonym is *Rhamphorhynchus* Garay

The genus *Cystorchis* Blume 1858 *Subfamily Orchidoideae, Tribe Cranichideae Subtribe Goodyerinae* consists of about 20 terrestrial species found in SE Asia and Southern China. The plants have interesting leaves and are therefore considered to be "Jewel Orchids". Terminal inflorescences and leafy stems carry resupinate, non-wide opening flowers where the dorsal sepal and petals form a hood over the column and the lateral sepals surround the base of the lip. The lip has a bilobed sac or basal spur and each side has a globular, sometimes warty, non-stalked callus. The blade is held parallel to the short column while the margins curl inward to form a tube and it has a single frontal stigma with two pollina. Its common name or meaning is the Bladder Orchid for its 'bladder-shaped hypochile. The genus synonym is *Aetheria* Endl. 1837, and the type species are *Cystorchis marginata* 1858 and *Cystorchis javanica* Blume 1858.

The genus *Erythroides* Blume, Bijdr. Fl. Ned. Ind.: 410 (1825). 1977, *Subfamily Orchidoideae, Tribe Cranichideae Subtribe Goodyerinae* consists of approximately 25 species of terrestrial herbs growing in wet forests of SE Asia. The species has fleshy hairy roots, cauline, petiolate leaves and small, thin, occasionally downy flowers with well-developed spurs or menta at the base of the lip. The short column has a setaceous, acuminate apex and a stigma with 2 pollina. The genus common name or meaning refers to the fact that many flowers in this genus have red perianths. The type species is *Erythroides latifolia* Blume 1825.

Microchilus C.Presl. 1827 *Subfamily Orchidoideae, Tribe Cranichideae, Subtribe Goodyerinae* and *Platythelys* were recognised to contain all the new world specimens of the panglobal genus *Erythroides* which has now been reduced to only the Asian species. The new world *Microchilus* has about 135 terrestrial species that can be from Mexico to Argentina. Characterized by the decumbent rhizome becoming ascending into an erect stem carrying in an ascending spiral resembling rosettes of several, petiolate, plain to mottled to variegated leaves that blooms on an erect, successively few to many flowered inflorescence with the flowers in the upper third or less.

Platythelys Garay 1977 *Subfamily Orchidoideae, Tribe Cranichideae Subtribe Goodyerinae* is a group 13 terrestrial species with ascending stemlike rhizomes with cauline petiolate leaves and small fleshy flowers with 2 pollina. The type species is *Platythelys quercetica* (Lindl.) Garay 1977

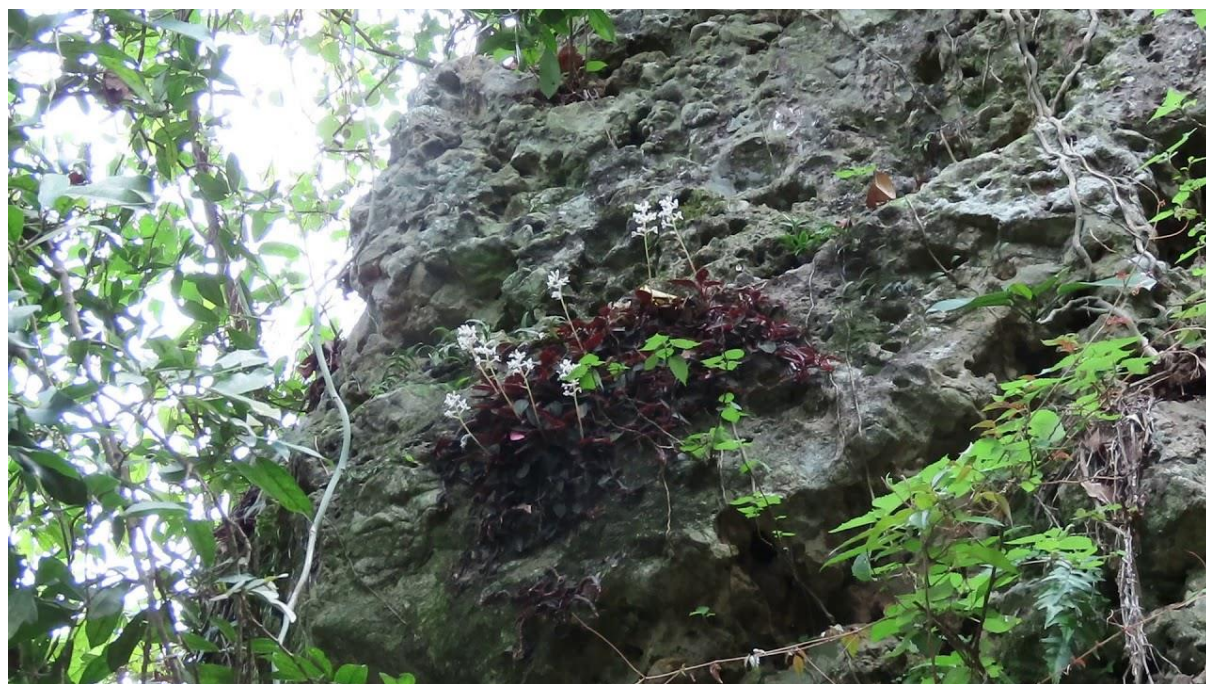
The two most widely and commercially available Jewel Orchids are *Ludisia discolor* and *Macodes sandariana*. *Macodes petola* is also readily available from several on-line sellers.

Ludisia discolor [Ker-Gawl.] Blume 1859 comes from China, Myanmar, Laos, Thailand, Cambodia, Vietnam, Malaysia, Sumatra, Borneo, and the Philippines as a small, hot to warm growing 'jewel orchid', so called because of their dark grey/green leaves with red lateral lines. A terrestrial species, *Ludisia discolor* is either terrestrial or lithophytic in evergreen, lowland forests in shady, humid habitats over rocky substrates along streams and rivers at 70 -1,100m. A monopodial orchid, this species has no pseudobulb. Red fleshy stems twisted, erect or pendulous are up 20cm tall with stalked elliptic-lanceolate 5-7.5 cm leaves. The species flowers in spring on terminal cylindrical, dense 10-30 cm long inflorescences with small asymmetrical, lightly- fragrant flowers that can last for 2-3 weeks.



Photo source: <https://www.orchidroots.com/detail/information/?pid=115489>

Good quality potting mix, sphagnum moss, coir or bark-based mixes are suitable media for cultivation. Heavy shade, year-round watering and good air movement are recommended. If this species dark grey/green leaves become much lighter, it is generally a signal that the light is too intense.



In situ photo source: <https://www.youtube.com/watch?v=T2Tcw-g32sc>

Its common names are the Jewel Orchid, the Variegated Ludisia, the Twisted Flower Orchid, the Rock Silk Worn and the Rock Lotus Root. This species has many synonyms *Anoectochilus dawsonianus* H.Low ex Rchb.f. 1868; *Anoectochilus ordeanus* Jennings 1875; *Anoectochilus ordianus* K.Koch 1871; *Gongora discolor* Link 1822;

Goodyera dawsoniana (H.Low ex Rchb.f.) W.Bull 1871; **Goodyera discolor* Ker-Gawl. 1816; *Goodyera ordeana* (Jennings) Boxall ex Naves 1880; *Goodyera ordiana* B.S.Williams 1871; *Goodyera rodigasciana* L.Linden 1886; *Goodyera rubrovenia* B.S.Williams 1862; *Haemaria dawsoniana* (H.Low ex Rchb.f.) Hasselb. in L.H.Bailey 1915; *Haemaria discolor* [Ker-Gawl.]Lindley 1840; *Haemaria discolor* var. *concolor* Ridl 1896; *Haemaria discolor* var. *condorensis* Gagnep. 1934; *Haemaria discolor* var. *dawsoniana* (H.Low ex Rchb.f.) B.S.Williams 1894; *Haemaria discolor* var. *denisoniana* Kerch. 1894; *Haemaria discolor* var. *grandis* Gagnep. 1934; *Haemaria discolor* var. *ordeana* (Jennings) B.S.Williams 1894; *Haemaria discolor* var. *rhodoneura* Schltr. 1913; *Haemaria discolor* var. *trilineata* Schltr. 1913; *Haemaria otletae* Rolfe 1891; *Haemaria pauciflora* Gagnep. 1933; *Haemaria rubrovenia* (B.S.Williams) Rchb.f. ex Stein 1891; *Kuhlhasseltia carrii* Holttum 1947; *Ludisia dawsoniana* (H.Low ex Rchb.f.) Aver. 1988; *Ludisia discolor* var. *ordiana* (B.S.Williams) J.M.H.Shaw 2009; *Ludisia furetii* Blume 1858; *Ludisia odorata* Blume 1859; *Ludisia otletae* (Rolfe) Aver. 1988; *Myoda rufescens* Lindley 1832; *Neottia discolor* (Ker Gawl.) Steud. 1821; *Orchiodes discolor* (Lindl.) Kuntze 1891r

Macodes sanderiana [Kraenzl.] Rolfe 1896 can be found in Sumatra, the Lesser Sunda Islands, Papua New Guinea, the Solomon Islands and Vanuatu as a small sized, hot to warm growing terrestrial at 350-800m growing in leaf-litter on rocks. Its distinctive round to oval leaves with purple undersides and velvety dark green with numerous golden veins on the upper side. This plants also exhibits chatoyancy, that is it appears to change colour when viewed at different angles. Flowering in autumn and winter takes place on 25-30 cm erect, reddish, many flowered inflorescences with the non-resupinate flowers held towards the apex. Its common name is Sander's Macodes named for the 1800's English nurseryman of the same name. The synonym is *Anoectochilus sanderianus* Kraenzl. 1895.



In situ photo source:

<https://www.orchidsnewguinea.com/orchid-information/species/speciescode/1229>

Macodes petola [Bl.] Lindl. 1840 comes from Borneo, Java, Malaysia, Sumatra, the Philippines and the Iriomote Islands of Japan where it grows as an evergreen, small sized, warm to hot growing terrestrial in lowland and lower montane forests at 100-1,500m. The fleshy creeping rhizome carries up to 8 spiralling, elliptic to ovate, acute, fleshy, hairy dark bottle green velvet leaves with 5 longitudinal and many reticulate golden veins that are

purple-green underneath with a clasped grooved petiole. The flowers are small, insignificant and non-resupinate on an erect, terminal to 20 cm inflorescence.



Photo source:

<https://travaldo.blogspot.com/2018/04/macodes-petola-care-and-culture.html>

Its common name is the Petiole Macodes, and synonyms are *Anoectochilus petola* (Blume) Hereman 1868; *Anoectochilus veitchianus* Blume 1859; *Anoectochilus veitchii* B.S.Williams 1862; *Argyrorchis javanica* Blume 1859; *Haemaria argyroneura* Miq. 1864; *Macodes argyroneura* (Miq.) Rolfe 1896; *Macodes javanica* (Blume) Hook.f. 1889; *Macodes petola* var. *argenteo-reticulata* J.J.Sm. 1905; *Macodes petola* var.

cuprea Rob. 1864; *Macodes petola* var. *latifolia* Rob. 1864; *Macodes petola* var. *robusta* J.J.Sm. 1905; *Macodes petola* var. *superba* Rob. 1864; *Macodes petola* var. *velutina* Rob. 1864; *Macodes robusta* J.J.Sm. 1921; *Macodes veitchii* Boxall 1880; *Macodes xanthophyllus* Boxall 1880; **Neottia petola* Bl 1825; *Rhomboda confusa* Ormerod 1995; *Spiranthes petola* (Blume) Hassk. 1844



Macodes petola flower

Photo source:

<https://www.ukhouseplants.com/plants/macodes-petola>

Macodes petola in situ

Photo source:

<https://www.flickr.com/photos/malaysianorchidinsitu/6982976574>



Some other Jewel Orchids that are available from on-line suppliers in Australia, or elsewhere are:

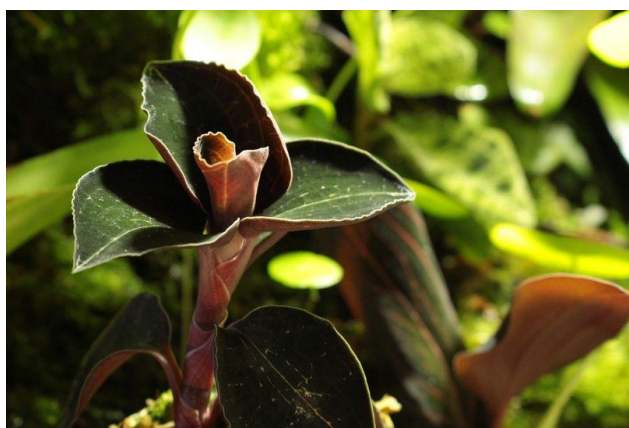
Anoectochilus fimosanus Hayata 1914 is found in Formosa (Taiwan) growing as a small warm growing terrestrial orchid on shady forest floors at low-moderate elevation. Dark reddish green leaves have striking yellow veining on the velvet leaf surface. The 15cm inflorescence has few flowers. Its common name is the Formosa Anoectochilus, while in China, its known as Tai Wan Yin Xian Lan. Its synonym is *Anoectochilus tetsuoi* Ohwi 1958.

Photo source: <https://www.orchidz.eu/Anoectochilus-fimosanus>



Anoectochilus formosanus in situ

Photo
source:



<https://www.facebook.com/172750113130662/posts/jewel-orchidanoectochilus-fimosanus/899783157094017/>

Anoectochilus reinwardtii Blume 1858 comes from Borneo, Java, Moluccas and Sumatra where it grows as a miniature to small sized, hot to warm growing terrestrial in tropical rainforests and seasonal evergreen forests at 200 – 1,000m. Four-six ovoid to round, minutely apiculate, velvety dark green leaves have red or pink veining. This species flowers from autumn to spring on erect, white pubescent 5 cm 1 to 14 flowered inflorescence with triangular-ovate, single veined, glandular-pubescent bracts. It is vegetatively similar to *Anoectochilus genicualtus* but differs in the lip that is not bent at the base which also does not have an orange-red spot.



Photo source:

<http://tangansejuk.blogspot.com/2011/10/jewel-orchid-1.html>



In situ photo source:

<http://www.orchidspecies.com/orphotdir/anoreinwart.jpg>

Common Name or Meaning Reinwardt's Anoectochilus
[German Botanist in Java 1800's] - In Thailand Wan nok khum

Anoectochilus roxburghii (Wall.) Lindl. 1832 comes from the eastern Himalayas, Assam, Bangladesh, Nepal, Sri Lanka, western Himalayas, Bhutan, Thailand, Laos, Yunnan China, Vietnam, Java and Sumatra where it grows a hot to cool growing terrestrial in humus in damp crevasses in shady broadleaved, evergreen, humid primary forests. The substrate is constantly moist from mist and water splash along steep watercourses at 300 – 1,800m. It is a diminutive species with subcordate to ovate-acute, velvety, dark lime-green reticulated with gold leaves. Its leaves are purple black on the underside, and it flowers in autumn on glandular-pubescent, 25 cm tall, 2 to 15 flowered inflorescences with ovate, 1 to 3 veined, glandular pubescent dorsal bracts carrying successively opening flowers. Its common name is Roxburgh's Anoectochilus named for an English Botanical Director working in India in the 1800's. In China, its known as Jin Xian Lan, and in Thailand as Wan mai na



Photo source:

<https://www.flickr.com/photos/afriorchids/960202938>

Synonyms in use are *Anoectochilus latomaculatus* Blume 1859; *Anoectochilus lobbianus* Planch. 1849; *Anoectochilus regalis* var. *cordatus* (B.S.Williams) B.S.Williams 1885; *Anoectochilus regalis* var. *grandiflorus* (B.S.Williams) B.S.Williams 1885; *Anoectochilus setaceus* var. *cordatus* B.S.Williams 1862; *Anoectochilus setaceus* var. *grandiflorus* B.S.Williams 1862; *Anoectochilus xanthophyllus* R.H. Torr. ex Rolfe 1887; *Chrysobaphus roxburghii* Wall. 1826; *Zeuxine roxburghii* (Wall.) M.Hiroe 1971



In situ photo source:

<https://naturelib.net/plantae/anoectochilus-roxburghii/>

Aspidogyne argentea (Vell.) Garay 1977 is found in southeastern Brazil, Paraguay and Argentina as a miniature to small sized, cool growing terrestrial orchid at sea level to 500m. The erect stem carries a few distant, erect-patent, widely lanceolate, ovate-lanceolate or ovate, acute to shortly acuminate, reticulate leaves with silver over dark green that are cuneate below into the petiolate base. Flowering in spring takes place on an erect, pubescent

6-25cm few to densely flowered inflorescence. Its common name is the Silvery Aspidogyne. Synonyms are *Anoectochilus argenteus* (Vell.) Loudon 1850; *Anoectochilus pictus* (Lindl.) Loudon 1850; *Erythrodes picta* (Lindl.) Ames 1915; *Erythrodes picta* var. *reticularis* (Rchb.f.) Pabst 1972; *Microchilus pictus* (Lindl.) D.Dietr. 1852; *Ophrys argentea* Vell. 1831; *Physurus argenteus* (Vell.) Koch & Lauch 1857; *Physurus callodictyus* Kraenzl. 1911; *Physurus pictus* Lindl. 1840; *Physurus pictus* var. *holargyrus* Rchb.f. 1857; *Physurus pictus* var. *reticularis* Rchb.f. 1857.



In situ photo 1 source:

https://orchid.unibas.ch/index.php/en/?option=com_content&view=article&id=3&SearchResultID=2041043/Aspidogyne/argentea/Vellozo_Jose_Mariano_de_Conceicao/Garay_Leslie_A.&setLang=en-GB

In situ photo source 2: <https://www.flickr.com/photos/38149106@N08/15245182959>



Erythrodes latifolia Blume 1825 is found in Malaysia, Sumatra and Java at elevations of 600-1,800m as a medium sized, hot to warm growing terrestrial. It has up to eight ovate leaves with crisped margins. The leaves are acuminate, with unequal halves, gradually narrowing into petiolate elongate base leaves held on the basal third of the stem. Flowering in early spring occurs on an erect, basally green becoming red to red brown, pubescent, 37cm many flowered inflorescence with up to 4 spaced sterile bracts and lanceolate, acute floral bracts. Its common name is the Broad Leafed Erythrodes. The synonym is *Physurus latifolius* (Blume) Blume 1859.

Photos source: <http://www.orchidspecies.com/erylatifolia.htm>



Dossinia marmorata

C.Morren 1848 which comes from Borneo in lowland and hill forests on limestone with leaf litter and or moss or between rocks and on ledges at elevations of sea-level to 400 meters as a miniature to small sized, hot growing terrestrial orchid with a short, stem with wooly roots and carrying 3 to 5, basally grouped, ovate to broadly elliptic, fleshy, 5 to 7 nerved, top black green with iridescent pink, greenish yellow to golden reticulation, dorsally pink to purple, abruptly narrowing below into the petiolate base leaves that blooms in the fall, winter and spring on a terminal, erect, laxly to densely many flowered, 9.2 to 24" [23 to 60 cm] long, densely, shortly pubescent inflorescence with narrowly elliptic, acute to acuminate, densely shortly pubescent, membranous, pink floral bracts.

Its common name is the Marbled Dossinia, and synonyms include *Cheirostylis marmorata* (C.Morren) Lindl. ex Lem. 1848; *Ludisia argyroneura* Miq. 1861; *Macodes lowii* (B.S.Williams) J.J.Wood 1984; and *Macodes marmorata* (C.Morren) Rchb.f. 1858

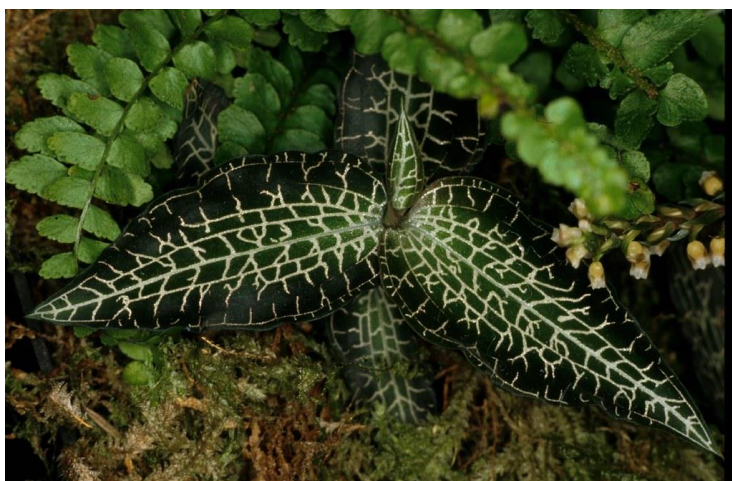
Photo source: <http://www.orchidspecies.com/dossmarmorata.htm>

Goodyera hispida Lindl. 1857 Section *Goodyera* occurs as a miniature to small sized, hot to cool growing terrestrial, lithophyte or epiphyte in rock crevasses in Assam, Eastern Himalayas, India, Bhutan, Thailand, Malaysia and Vietnam. Growing in lowland, broadleaf evergreen forests at 150 – 2,200m, it can be found in a deep shade and high humidity environment. The 6-8 basal,



subsessile, ovate-lanceolate, acuminate leaves are parallel to the ground and it flowers in spring and summer on erect 10cm spicate, hispidly glandular, twisted inflorescences with bracts that are shorter than the many small, white flowers. Its common name is the Shagy Goodyera, and the synonyms are *Epipactis hispida* (Lindl.) A.A.Eaton 1908; and *Orchiodes hispidum* (Lindl.) Kuntze 1891

Photo source: <https://www.orchidroots.com/detail/photos/91836/>



In situ photo source: <https://www.flickr.com/photos/afriorchids/960221382>

Goodyera repens (Linne) R. Brown 1813 Section *Goodyera*. This species is widely distributed throughout north, central and southern Europe, Russia and Siberia, China and mainland Asia, Japan, Alaska, Canada and northern USA. Growing at 3,800m, it is a small sized, cold growing terrestrial orchid of coniferous forests in damp humus, and tundra wooded areas and thickets. The creeping rhizome carries elliptic-ovate, lustrous dark green, obscurely veined with silver leaves. Flowering occurs in late spring and early summer on a terminal, erect,



pubescent, 3 to 14" [7.5 to 35 cm] long, few to several flowered racemose inflorescence with small pubescent flowers. Its common name is the Lesser Rattlesnake Plantain - In China Xiao Ban Ye Lan

Photo source:

https://commons.wikimedia.org/wiki/File:Goodyera_repens_flowers_in_detail_-_M%C3%A4nniku.jpg

Its many synonyms include *Elasmatium repens* Dulac 1867; *Epipactis chinensis* (Schltr.) Hu 1925; *Epipactis mairei* (Schltr.) Hu 1925; *Epipactis repens* (Linne) Crantz 1769; *Epipactis repens* var. *ophioides* (Fernald) A.A.Eaton 1908; *Gonogona repens* (L.) Link 1822; *Goodyera chinensis* Schltr. 1919; *Goodyera mairei* Schltr. 1921; *Goodyera marginata* Lindl. 1840; *Goodyera pubescens* var. *repens* (L.) Alph.Wood 1847; *Goodyera repens* fma. *ophioides* (Fernald) P.M.Br. 1995; *Goodyera repens* subsp. *ophioides* (Fernald) Å.Löve & W.Simon 1968; *Goodyera repens* var. *japonica* Nakai 1953; *Goodyera repens* var. *marginata* (Lindl.) Tang & F.T.Wang 1951; *Goodyera repens* var. *ophioides* Fernald 1899; *Neottia repens*

(L.) Sw. 1800; *Orchiodes marginatum* (Lindl.) Kuntze 1891; *Orchiodes repens* (L.) Kuntze 1891; *Orchiodes resupinatum* Kuntze 1891; *Orchis repens* (L.) Eyster ex Poir. 1805; *Peramium repens* Salisb. 1812; *Peramium ophioides* Rydb. in N.L.Britton 1901; *Peramium repens* var. *ophioides* (Fernald) A.Heller 1900; *Peramium secundum* (Raf.) House 1924; *Satyrium hirsutum* Gilib. 1792; *Satyrium repens* Linne 1753; *Serapias repens* (L.) Vill. 1787; *Tussaca repens* (L.) Raf. 1814; *Tussaca secunda* Raf. 1814



In-situ photo source:

<http://goorchids.northamericanorchidcenter.org/species/goodyera/repens/>

Cystorchis javanica (Blume) Blume 1859 is found from Borneo to Java in primary lowland and hill forests at sea-level to 700m. It is a small sized, hot to warm growing terrestrial. It is similar to *Cystorchis variegata* but differs mostly in the color of the dark wine-red leaf that is finely undulate; closely spaced greenish flowers with basal broadening reddish in the centre and paler apically on the sepals with white, oblong-linear, margins. Its common



name is the Javanese Cystorchis, and synonyms are *Anoectochilus javanicus* (Blume) B.S.Williams 1862; *Cystorchis variegata* var. *purpurea* Ridl. 1896; *Hetaeria javanica* Blume 1825.

Photo source: <http://www.orchidspecies.com/cysjavanica.htm>

In situ photo source: <https://inaturalist.ca/taxa/427447-Cystorchis-javanica>

Cystorchis variegata has light green with dark green tessellated, more finely undulate leaves, sepals colored yellowish basally, reddish brown centrally, and cream apically, petals that are lanceolate and white and a lip with a small half-round almost triangular lamina.



Microchilus minor C.Presl 1827 can be found in montane forests in Peru as a small sized, epiphyte with an erect, pubescent, basally leafy stem carrying 3 elliptic to oval, acute to acuminate, cuneate below into the petiolate base leaves. It flowers on a linear-cylindric, glabrous inflorescence of about 9cm carrying minute, nodding flowers.

This species is now recognised as the type species for the genus on priority once the members of this group were removed from the genus *Erythrodes*. Its common name is the Least Microchilus, and synonyms are *Erythrodes minor* (C.Presl) Ames 1922 and *Physurus minor* (C.Presl) Lindl. 1840. A line drawing of this species can be found at http://www.plantillustrations.org/illustration.php?id_illustration=87106, however I could not find any photos.

Microchilus anchoriferus (Schltr.) Ormerod 2002 comes from Ecuador, Peru and Bolivia where it grows as a medium sized, warm to cool growing terrestrial in wet montane forests at 800 – 1,300m. Pubescent roots and a recumbent stem carry spiral leaves, dark green with greenish white spots, carinate on the midline, broadly elliptic, acute, gradually narrowing below into the petiolate bases. Flowering in spring to autumn occurs on an erect, terminal, 30 cm many small flowered inflorescence.



Its common name is the Anchor Carrying Erythrodes. Synonyms are *Erythrodes anchorifera* (Schltr.) Garay 1978; *Erythrodes marmorata* C.Schweinf. 1941; *Microchilus marmoratus* (C.Schweinf.) Ormerod 2004; *Physurus anchoriferus* Schltr. 1913 *Microchilus anchoriferus*.

Photo source:
<http://www.orchidspecies.com/eryanchorifera.htm>

In situ photo source:
<https://www.orchidsforum.com/threads/microchilus-anchoriferus.12370/>



Microchilus tridax (Rchb.f.) Ormerod 2002 comes from Guatemala, Belize, Honduras and Costa Rica as a small to just medium sized, hot to cool growing terrestrial in tropical wet forests at 50 – 1,900m. The creeping then ascending rhizome carries an erect stem enveloped completely by leaf sheaths with a rosette of 3-7 dark green above, purple to light green and 3 veined beneath leaves that are convolute, elliptic-ovate, acute, slightly acuminate and gradually narrowing. Flowering in late spring and early summer occurs on an erect, puberulent, terminal 24-27cm, rachis to 6" [15 cm] long, successively laxly many flowered inflorescence with 3 to 4 somewhat flared, tubular bracts. Its common name is the Three Microchilus



Photo source: <https://orchidroots.com/detail/information/?pid=254456&gen=126937&type=species&role=>

Synonyms *Erythrodes purpurea* (Ames) Ames 1915; *Erythrodes tridax* (Rchb.f.) Ames 1922; *Physurus purpureus* Ames 1908; *Physurus tridax* Rchb.f. 1866 *Microchilus tridax*

Photo source:

<http://www.orchidspecies.com/micrtridax.htm>



Platythelys quercetica (Lindl.) Garay 1977 can be found in, Mexico, Belize, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Bahamas, Cuba, Dominican Republic, Haiti, Leeward, Trinidad & Tobago, the Windwards, Venezuela and Peru in cloud forest in deep shade 400 – 1,650m. It can also be found, albeit rarely



in Florida and Louisiana. It is a miniature sized, hot to cool growing, terrestrial, rhizomatous plant with erect, green stems enveloped by with 3 to 5 spirally arranged, elliptic-ovate to lanceolate, basally clasping leaves. Flowering throughout the year occurs on an erect, terminal 10 cm, racemose, successively flowered inflorescence subtended by an attenuate bract.

Its common name is the Oak Living Platythelys or the Jug Orchid. Synonyms include *Anoectochilus quercetica* (Lindl.) Veitch ex R.Hogg 1862; *Aspidogyne mayoriana* (Kraenzl.) Meneguzzo 2012; *Aspidogyne quercetica* (Lindl.) Meneguzzo 2012; *Erythrodes mayoriana* (Kraenzl.) Ames 1922; *Erythrodes quercetica* (Lindl.) Ames 1915; *Erythrodes sagraana* (A.Rich.) León 1946; *Erythrodes trinitatis* Ames 1922; *Goodyera quercicola* Chapm. 1860; *Microchilus querceticolus* (Lindl.) D.Dietr. 1852; *Orchiodes quercilobum* Kuntze 1891; *Physurus mayorianus* Kraenzl. 1913; *Physurus quercetica* Lindl. 1840; *Physurus sagraanus* A. Rich. 1850; *Platythelys mayoriana* (Kraenzl.) Garay 1977; *Platythelys sagraana* (A.Rich.) Garay 1977

Photo source:

<http://goorchids.northamericanorchidcenter.org/species/platythelys/quercetica/>

To conclude this article, I conducted some research to see whether there is a consensus about how to cultivate and flower Jewel Orchids. As is always the case, there are many differences of opinion in this regard, however, there are also many consistently recommended methods to successfully grow and flower these plants. Given their recent appearance in many retail garden stores, one assumes that they are now relatively cheap to propagate and deflask. Many of the plants that we see for sale are in fact mericloned.

In summary:

- Keep plants in a bright but indirect light location away from direct exposure to the sun (eg west facing windows) and heat sources. These species are forest floor dwellers and are therefore shade-tolerant. A useful rule of thumb is if you are able to read a newspaper with your back to the natural light source, the light level is about right. If you intend to grow these orchids in your home, a room with good air movement, temperature that does not exceed 20°C for extended periods, or drop below 10°C and is at least four metres away from an operating heat source is recommended. These orchids, like many others require a rest period and night time temperature reduction to trigger the release of cytokinins to induce flowering.
- Keep the potting medium evenly moist allowing no more than the top third to dry out in between watering. It is also prudent to avoid watering with cold water during winter months, and when in flower. Management of watering is important as often these orchids will be potted in substrate that retains moisture. Symptoms of under-watering include rapid flower loss and dry sunken leaves. Over-watering results in loss of lower leaves, yellowing leaves, loss of buds or flowers and root rot. Do not allow standing water to accumulate under the container.
- As forest floor dweller, humidity is important. Too little humidity during our hot dry summer months will lead to the same outcomes as underwatering. Too much humidity that can be associated with inadequate air movement will result in powdery mildew and similar fungal infections. Resist the temptation to apply a fine water spray to plants and flowers to address low humidity. Growing your plants above a tray of pebbles and water can assist in boosting local humidity.
- Regular fertilising once or twice a month (depending on the season of the year) and whether or not the orchid is making active growth will help build robust plants, and flowers. Apply indoor plant fertilisers at manufacturer's recommended rate, avoiding overuse of high nitrogen products by using balanced fertilisers with high potassium. Remember, these orchids have a distinct dormancy period, usually during the cooler, drier season in their natural habitat. For us, that will be the winter.
- There are many different types of media that are equally effective for growing Jewel orchids. Standard bark mixes for orchids probably retain too little moisture, however good quality general potting mixes that include some compost, mixed coir substrates, sphagnum moss and similar should be OK. Repotting is best done in spring moving the plant to the next bigger pot.
- Jewel orchids are very susceptible to sap-sucking insect pests such as mealybug, particularly if there is insufficient air movement.
- Jewel orchids are said to be easy to propagate using rhizome cuttings. For rhizomatous cuttings, in spring, prune the leading growths that have a slightly hardened base with new foliar growth emerging from the top. The cuttings should be at least 8cm in length and are normally found in the outer edges of the plant where the new growth takes place. Remove the older leaves (up to one third) and submerge the rhizome loosely over a moist substrate. Place the cutting in pots in a transparent bag with small holes to maintain humidity for the first month of its new life. Keep the soil evenly moist and provide bright indirect light away from direct sunlight. Your orchid should have made new roots in about a month.

Suppliers

Orchid Jewels Nursery - <https://orchidjewels.com.au/>

Burleigh Park Nursery - <http://www.speciesorchids.com/index.html>

Top Tips & Info

Care Difficulty - Very Easy

Location & Light - ♦

Anywhere that has an absence of direct sunlight is perfect for this species. Darker settings are tolerable as naturally, they'll grow along the dense jungle floor in South-East Asia. If you're worried about its location being too dark, if a newspaper can be read while having your back towards the light source, you're good to go.

In terms of the ideal room around the house, as long as the desired location is, it should be fine. Never place it in more than an hour of direct sunlight as irreversible damage may occur, in the likes of yellow, mottled leaves.

Water - ♦ ♦

Jewel Orchids love moist conditions. Once the top third of the soil has dried out, give it another soak of water, allowing the excess moisture to drain from the pot freely. Whilst in bloom, it's important not to use cold water as this could shock the roots, causing multiple issues down the line. Under-watering symptoms include rapid flower loss and dry, sunken leaves; these issues are usually due to either forgetfulness, too much sunlight or too much heat. Over-watering symptoms include rotting lower leaves, yellowing leaves, a loss of buds or flowers, and root rot. Allow the majority of the soil to dry out in between waters, preventing a pool of standing water from accumulating beneath the pot.

Humidity - ♦ ♦

Average room humidity is more than enough to occupy a Jewel Orchid, as too high humidity and poor air circulation will result in powdery mildew. Do not mist the flowers as it'll cause botrytis petal blight that can spread quickly. If you're feeling extra, introduce a pebble tray to maintain a reliable level of surrounding moisture; however, this isn't a necessity.

Fertilisation - ♦ ♦

Use a fertiliser high in potassium to prolong its blooms during the flowering period - an excellent example would be a Tomato Feed. Regular 'Houseplant' fertilisers, for instance, BabyBio or Miracle-Gro, will still do the job but will favour foliar growth as well. Reduce this to monthly intervals during the dormancy period, except for when it's in bloom in the winter.

Jewel Orchids are sympodial, meaning that they'll grow laterally along the jungle floor and enabling them to thrive in the darkest of locations.

Dormancy Care & Annual Flowers

Jewel Orchid blooms are easily achieved when its dormancy irrigations are reduced by half; those who have a cooler room without artificial light at night will also be on the upper-hand. Keep the roots pot-bound to add further stress onto the specimen, which in turn will significantly heighten the chance of flowering. Blooms will generally appear in the winter, but may occur at any given time.

The following steps should be done at the start of autumn until early spring when growth begins to slow. Always think of ukhouseplants' acronym of SHORT when it's time for flowers.

Sunlight & Location

Be sure to provide a bright location with little to no direct sunlight. Although the winter rays won't necessarily hurt the plant, be careful not to fall in the trap of sun-scorch and severe dehydration.

For it to fully become seasoned, avoid the use of artificial lighting or locations that boast temperatures higher than 18°C (64°F).

Hydration

Reduce waters so that about half of the soil becomes dry. It's essential to keep them on the drier side to life, as they'll think that hard times are ahead and therefore will need to pass its genes on to the next generation.

Occasional Feeds

Whilst in bloom, use a Tomato feed to provide monthly nourishment of potassium; the use of fertiliser isn't needed until the first spike emerges from the stems.

Reduce Everything

This one is to remind you that everything needs to be reduced - especially the temperature.

Temperature

This is the most significant step - reduce the temperature down by around 5°C compared to the summertime or place in a room that's around 15°C (59°F). The drop in temperature should ideally last until the inflorescence finishes blooming, although it can still be transferred into the main house as long as it sits on a pebble tray. You'll be at a significant disadvantage if the ambient temperature is kept constant throughout the year, as Orchids will only respond with flowers in cooled environments. Never exceed the minimum temperature as it could lead to plant death or yellowed foliage at a bare minimum.

The fluorescences of *Ludisia discolor*.

Common Issues with Jewel Orchids

Yellowing leaves - it isn't easy to accurately pinpoint why this is happening, as it could be due to many different reasons. If the lower leaves are yellowing in quick succession, over-watering may be to blame. Do not allow the soil to become soil or waterlogged as failure to do so will cause anaerobic (oxygen-lacking) conditions that aren't acceptable with Jewel Orchids. For severe cases, take the plant out of its pot to examine for root rot - a transplant may have to be performed. Another reason could be due to either too much sunlight or not enough soil moisture. Under-watering can cause a Jewel Orchid to slip into its dormancy period. Still, persistent droughts with direct sunlight will cause further damage in the likes of yellowing leaves, stunted growth, and wilting.

Too low humidity can cause browning leaf tips with yellow halos and stunted flowers. Although this won't kill your specimen, you may want to increase the local moisture to prevent the new growth from adopting these symptoms. Mist or rinse the foliage from time to time and create a humidity tray whilst the heaters are active to create a stable environment for your specimen.

Always use lukewarm water, and if you choose to use tap water, allow it to stand for at least 24hrs before application. Orchids tend to be quite sensitive to temperature change, so pouring cold tap water immediately into the pot will not only ionise your roots but could even cause yellow edges, sudden flower loss and stunted growth.

Never allow temperatures to dip below 10°C (50°F) as irreversible damage will occur in the likes of yellow foliage and weakened health. When this happens, remove the severely affected areas, and immediately improve growing conditions - never cut through softened yellow growth, and only around brown, crispy squares. As rehabilitation can take several months because of its slow-growing nature, be sure to provide a stable location with better growing conditions to speed this process.

Pests could also be an issue, most notably being Mealybugs. Especially before purchasing, have a quick scan over the plant's foliage and flowers, inspecting its cubbyholes for those white critters. If yours has fallen foul of pests, click on the appropriate links to learn more about treatment as well as observing their appearance.

Too much sunlight will lead to sun scorch, with typical signs including browning or crispy leaves, dry leaf-edges, sunken leaves, or stunted growth. Although too little light will cause over-watering issues, too much sunlight will be a detriment, too. If yours has fallen short of this, reduce the amount of sunlight considerably and always be mindful of environmental shock (when too locations offer too different growing conditions). Remove some of the affected leaves and increase waters slightly. Only hydrate the plant using the bottom-up method.

A lack of flowers in the autumn or winter is caused by an insufficient dormancy period, served in the summer. Locations that offer near-similar temperatures all year round won't allow the plant to go dormant. To achieve, situate in a location that dips to around 15°C (59°F) with fewer waters during the autumn months. Allow the majority of the compost to dry out and provide a humidity tray while the radiators are operating. While we're on the subject, if you'd like to prolong the flowering period, use a fertiliser high in potassium to promote longer-lasting flowers; Tomato Food is an excellent choice. Other tips to extend this period are to avoid temperature fluctuations and droughts, maintain good humidity and place in a well-lit room with little to no direct sunlight.

Short-lived flowers could be the product of low humidity. Place the Jewel Orchid on a humidity/pebble tray, keeping the reservoir topped up with water throughout the winter. Other ways to increase the surrounding moisture are to situate in a bathroom, or at least three metres away from an operating heat source. Never mist the flowers due to the high risk of developing botrytis.

The development of buds along a shaft, that'll emerge from the centre of each stem, pictured below.

Ludisia discolor

Origins

Similar to other indoor Orchids, the *Ludisia discolor* has native origins to tropical locations in South-East Asia. The species was initially described by John Ker-Gawler in 1818 as *Goodyera discolor* but was subsequently moved into its own genus by Achille Richard seven years later. His reasoning for the name is still unclear today.

The Distribution of *Ludisia discolor*.

Temperature

12° - 25°C (54° - 78°F)

H1b (Hardiness Zone 12) - Can be grown outdoors during the summer in a sheltered location with temperatures above 13°C (56°F), but is fine to remain indoors, too. If you decide to bring this plant outdoors, don't allow it to receive any direct sunlight as it may result in sun-scorch and dehydration. Regularly keep an eye out for pests, especially when re-introducing it back indoors.

Jewel Orchids will generally flower better in the winter months when the ambient temperature is dipped to around 15°C (59°F) during the autumn and winter.

Spread

Up to 0.3m in height and the width of its pot. The ultimate height will take between 4 - 6 years to achieve with around 5cm of new growth per season.

Pruning & Maintenance

Remove yellow or dying leaves, and plant debris to encourage better-growing conditions. While pruning, always use clean scissors or shears to reduce the chance of bacterial and fungal diseases. Never cut through yellowed tissue as this may cause further damage in the likes of diseases or bacterial infections. Remember to make clean incisions as too-damaged wounds may shock the plant, causing weakened growth and a decline in health. Remove spent flowers as they wilt and then the whole stalk once the show is over.

Propagation

Via Seed or Rhizome Cuttings.

Rhizome cuttings are most successful when the stem is at least 8cm in length.

For rhizomatous cuttings (Easy) in the spring, prune the leading growths that have a slightly hardened base with new foliar growth emerging from the top. They should be at least 8cm (3 inches) in length and are found in the outer edge of the plant where the new growth takes place. Remove the older third of the leaves and submerge the rhizome loosely over a moist 'Houseplant' compost. Place the cuttings (& its pot) in a transparent bag with small holes to lock-in a steady level of humidity for the first month of its new life. Keep the soil evenly moist and present a bright, indirect location away from the harsh rays. After the initial month, remove the bag and follow the care requirements documented at the top of the article.

Flowers

Jewel Orchids will flower at the start of winter if grown correctly with a cooler environment during this time. Each individual flower will last up to ten days, with the overall show lasting up to five weeks. Supplement the plant using a fertiliser high in potassium to prolong its flowers - Tomato feed is an excellent choice or a Miracle-Gro product. Never promote persistent droughts as this will shorten the duration of flowers.

Repotting

Repot every three years in spring using a 'Houseplant' labelled and the next sized pot with adequate drainage. Jewel Orchids are best suited for pots that are wide and shallow, as their rhizomes will spread laterally as opposed to downwards. The ideal depth of a container should be around 5 inches (from the soil line downwards).

Hydrate the plant 24hrs before tinkering with the roots to prevent the risk of transplant shock. For those that are situated in a darker location, add a thin layer of small grit in the pot's base to improve drainage and downplay over-watering. [Click here](#) for a detailed step-by-step guide on transplantation, or via [this link](#) to learn about repotting with root rot.

Pests & Diseases

Keep an eye out for spider mites, thrips, aphids & mealybugs. Common diseases with Jewel Orchids are root or rhizome rot, powdery mildew, leaf-spot disease, botrytis petal blight and powdery mildew - [click here](#) to learn more about these issues.

Toxicity

Jewel Orchids aren't considered poisonous when consumed by pets and humans; however, when high quantities are eaten, it may result in vomiting, nausea, and a loss of appetite.