

Vanda garayi Christenson

SYNONYMS: Ascocentrum garayi Seidenfaden (1992) reported that Eric Christenson informed him in personal communications that he considers Ascocentrum miniatum to be a rarely grown species endemic to Java, and that the plants from mainland Asia which are currently cultivated as Ascocentrum miniatum are actually a different species which Christenson proposes to call Ascocentrum garayi. Furthermore, the plants from the Philippines formerly known as Ascocentrum miniatum should, in his opinion, be referred to as Ascocentrum aurantiacum ssp. philippinense. See Christenson (1992) for the publication of these changes.

ORIGIN/HABITAT: Thailand and Malaya. In Thailand, these orchids are found throughout the country from the northern mountains to the southwestern peninsula. They usually grow in dry deciduous forests at elevations of 650-2500 ft. (200-760 m), but collections have been made in the northwest mountains at 1000-3300 ft. (300-1000 m), and near Loei in the northeast at about 2000 ft. (610 m). In Malaya, plants are found on Langkawi Island, just off the northwest coast, and in the northwestern state of Peris.

CLIMATE: Station #48327, Chiangmai, Thailand, Lat. 18.8N, Long. 99.0E, at 1100 ft. (335 m). Temperatures are calculated for an elevation of 2000 ft. (610 m), resulting in probable extremes of 106F (41C) and 35F (2C).

N/HEMISPHERE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
F AVG MAX	82	87	92	93	91	87	86	84	85	86	83	81
F AVG MIN	53	54	59	67	71	71	71	72	70	68	63	54
DIURNAL RANGE	29	33	33	26	20	16	15	12	15	18	20	27
RAIN/INCHES	0.3	0.4	0.6	2.0	5.5	6.1	7.4	8.7	11.5	4.9	1.5	0.4
HUMIDITY/%	73	65	58	62	73	78	80	83	83	81	79	76
BLOOM SEASON	*	*	*	**	**	**	*	*	*	*	*	*
DAYS CLR @ 7AM	5	5	2	2	1	0	0	0	0	1	3	3
DAYS CLR @ 1PM	9	8	4	2	0	0	0	0	0	0	1	3
RAIN/MM	8	10	15	51	140	155	188	221	292	124	38	10
C AVG MAX	27.8	30.6	33.3	33.9	32.8	30.7	30.1	28.9	29.4	30.0	28.3	27.2
C AVG MIN	11.7	12.2	15.0	19.5	21.7	21.7	21.7	22.2	21.1	20.0	17.2	12.2
DIURNAL RANGE	16.1	18.4	18.3	14.4	11.1	9.0	8.4	6.7	8.3	10.0	11.1	15.0
S/HEMISPHERE	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN

Cultural Recommendations:

LIGHT: 3000-4000 fc. Plants need moderately bright, filtered or diffused light, but they should not be exposed to direct midday sun. Strong air movement should be provided at all times. Visitors to the habitat frequently report that these orchids grow in full sun, but the exceptionally heavy cloud cover during the summer rainy season limits the amount of light actually received by the plants.

TEMPERATURES: Summer days average 84-87F (29-31C), and nights average 71-72F (22C), with a diurnal range of 12-16F (7-9C). The warmest days occur in spring at the end of the dry season. Spring days average 91-93F (33-34C), and nights warm from 59 to 71F (15 to 22C), and the diurnal range drops from 33 to 20F (18 to 11C).

HUMIDITY: 80-85% in summer, dropping gradually to 60-65% in late winter and early spring.

WATER: Rainfall is moderate to heavy from late spring into autumn. Amounts then decrease rather rapidly, resulting in a dry season that lasts through winter into early spring. Cultivated plants need ample water while actively growing, but the roots must dry rapidly after watering. If plants are grown in pots, conditions around the roots should be open and never become stale or soggy. Water should be gradually reduced after new growth matures in autumn.

FERTILIZER: 1/4-1/2 recommended strength, applied weekly when plants are actively growing. Many growers use a balanced fertilizer throughout the year. Other growers use a high-nitrogen fertilizer from spring to midsummer, and then switch to one high in phosphates in late summer and autumn.

REST PERIOD: Winter days average 81-87F (27-31C), and nights average 53-54F (12C), with a diurnal range of 27-33F (15-18C). Rainfall in the habitat is very low for much of the winter, but during this time additional moisture frequently is available from heavy dew and nighttime mist. Cultivated plants need less water in winter, but they should not stay dry for long periods. Fairly regular early-morning mistings between occasional waterings should provide sufficient moisture in most growing areas. Fertilizer should be reduced or eliminated until new growth starts in spring and heavier watering is resumed.

GROWING MEDIA: Plants are usually grown in hanging pots or slatted wooden baskets filled with a very open, chunky, fast draining medium. In some areas, plants are grown with only enough medium, such as charcoal, wine corks, or large cork chips, to anchor the plant until the roots attach to the container. Roots should not be trimmed, as they need to grow and hang down as far as they choose. Growers indicate that anything more than minimum root trimming can set the plant back 2-3 years. Continuous brisk air movement around the roots is very important.

MISCELLANEOUS NOTES: In most cases, plants discussed as *Ascocentrum miniatum* in literature published prior to 1992 should actually be referred to the recently described *Ascocentrum garayi*. The bloom season shown in the climate table is based on cultivation records. In the Thailand habitat, plants bloom in late winter and early spring.

Plant and Flower Information:

PLANT SIZE AND TYPE: A small, 4-8 in. (10-20 cm) monopodial epiphyte.

STEM: Plants occasionally reach a height 12 in. (30 cm). The stout, erect stem is concealed by distichous, overlapping leaf-bases, even along the lower stem where the old, dried bases continue to clasp the stem even after the leaves have fallen. Several offshoots may develop near the base of the stem, but Christenson (1986) reports that plants seldom outgrow a 4 in. (10 cm) pot. The offshoots usually start flowering when about 3 in. (8 cm) tall. Numerous long, thick, fleshy roots are produced along the lower part of the stem.

LEAVES: 2-8 in. (5-20 cm) long by 0.4-0.6 in. (1.0-1.5 cm) wide. Many stiff, dark green leaves are arranged distichously and spaced about 0.1-0.2 in. (0.3-0.4 cm) apart on the upper part of the stem. The thick, fleshy, strap-shaped leaves, which are obliquely erect or slightly recurved, are V-shaped in cross section, with a toothed, uneven apex.

INFLORESCENCE: 4-10 in. (10-25 cm) long. The stiff, erect flower spikes emerge from the leaf axils, and the flowers are held well above the foliage. Several inflorescences may be produced at the same time from each stem. Blossoms are carried in a dense, more or less cylindrical raceme along almost the entire length of each flower spike.

FLOWERS: Many per inflorescence. The bright, red-orange to yellow-orange flowers are 0.5-0.6 in. (1.2-1.5 cm) across and last for 2 weeks or more. Petals, which open fully, are narrowed at the base and rounded to bluntly pointed at the tip. Sepals are up to 0.3 in. (0.8 cm) long by about 0.1 in. (0.3 cm) wide, but the dorsal sepal may be somewhat narrower. Petals are similar to the dorsal sepal, but they are often a little shorter. The tongue-shaped, 3-lobed lip is about 0.2 in. (0.4 cm) long by 0.1 in. (0.1-0.2 cm) wide. It has erect lateral lobes that almost touch the column. The midlobe is bluntly pointed at the apex and bends sharply near the middle so that the apical half projects forward. The cylindrical spur at the base of the lip is about twice as long as the midlobe and projects straight downward behind the lip. The spur is somewhat swollen and laterally flattened near the tip. The column is short and terete.

HYBRIDIZING NOTES: Chromosome count is $2n = 38$. According to Fuchs (1987), *Ascocentrum miniatum* has not been used extensively for hybridizing because it is not easily compatible with other vandaceous genera, so only a small percentage of the attempted crosses produce seed. When a cross is successful, most of the first generation hybrids bloom orange or orange-yellow, regardless of the color of the other parent.

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