

Vanda denisoniana Benson and Rehb. f.

SYNONYMS: *Vanda henryi* Schlechter. For many years *Vanda denisoniana* was thought to have two forms. The typical flower is yellow-green. Plants with dark brown flowers were thought to be variety *hebraica*. Seidenfaden (1988), however, reported that after reexamining the literature and herbarium specimens he concluded that plants previously known as *Vanda denisoniana* var. *hebraica* are probably *Vanda brunnea*.

ORIGIN/HABITAT: Burma, Thailand, and China. In Burma, *Vanda denisoniana* was originally found at 2000-2500 ft. (610-760 m) in the Arracan Mountains of southwestern Burma and near Ta-ok in the Tenasserim region. In northern Thailand, plants occur near Mae Hong Song, Khuntan, Chiangmai, Mae Tun, Lampun, Phu Langka, Chiengrai, Doi Phu Ka, Nan, Doi Saket, Mae Sot, Phu Luang, and Loei, where they grow in the mountains at high-elevations. In China, plants grow in southwestern Yunnan Province.

CLIMATE: Station #48327, Chiangmai, Thailand, Lat. 18.8N, Long. 99.0E, at 1100 ft. (335 m). Temperatures are calculated for an elevation of 3300 ft. (1000 m), resulting in probable extremes of 102F (39C) and 31F (-1C).

N/HEMISPHERE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
F AVG MAX	78	83	88	89	87	83	82	80	81	82	79	77
F AVG MIN	49	50	55	63	67	67	67	68	66	64	59	50
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	25.6	28.3	31.1	31.7	30.6	28.5	27.8	26.7	27.2	27.8	26.1	25.0
C AVG MIN	9.4	9.9	12.6	17.1	19.3	19.3	19.3	19.9	18.7	17.6	14.9	9.9
DIURNAL RANGE	16.2	18.4	18.5	14.6	11.3	9.2	8.5	6.8	8.5	10.2	11.2	15.1
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 vandas 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. Light in the habitat is much brighter.

TEMPERATURES: Summer days average 80-83F (27-29C), and nights average 67-68F (19-20C), 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 87-89F (31-32C), and nights are 63-67F (17-19C), and the diurnal range is 16-26F (9-15C).

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

WATER: Rainfall in the habitat is exceptionally heavy start in late spring and lasts through autumn. Averages then drop rapidly, resulting a winter and early spring dry season lasting about 4 months. Cultivated plants should be watered heavily while actively growing, but drainage around the roots must be excellent. Water should be reduced after growth is fully mature in late 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 77-83F (25-28C), and nights average 49-50F (9-10C), with a diurnal range of 27-33F (15-18C). Winter rainfall in the habitat is low, but the relatively high humidity and large difference between day and night temperatures cause heavy dew and late-night mist, thereby making more moisture available to the plants. Cultivated plants need less water in winter, but they should not be dry for long periods. In most growing areas, plants will have enough moisture if they receive a light, early-morning misting every few days especially if humidity is high. Fertilizer should be reduced or eliminated until new growth starts and heavier watering is resumed in spring.

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: The bloom season shown in the climate table is based on cultivation records. In northern Thailand, plants bloom primarily January-March.

Plant and Flower Information:

PLANT SIZE AND TYPE: A short, 12 in. (30 cm) sympodial epiphyte.

STEM: None. The short, stout, densely leafy stems are covered by overlapping leaf bases.

LEAVES: To 12 in. (30 cm) long by less than 1 in. (2.5 cm) wide. Each growth carries 6-10 linear, closely spaced leaves. They are stiffly leathery, recurved, and sharply bilobed at the apex.

INFLORESCENCE: 6-10 in. (15-25 cm) long. The inflorescence, which is relatively short, stout, ascending, arching, or horizontal, emerges from the stem along the axil of the lower leaves. Each flower is carried on a pedicellate ovary that is about 2 in. (5 cm) long.

FLOWERS: 5-8. The thick, fleshy, delightfully fragrant blossoms are closely spaced close in a raceme. Flowers vary in color, but they are usually white-ivory, chartreuse, lemon-yellow, or golden yellow, but yellow-brown to copper-colored forms have been reported. The waxy, long-lived flowers are 2.0-2.5 in. (5.0-6.4 cm) from the tip of the dorsal sepal to the tip of the lip. Sepals and petals are more or less reflexed and the tips may be rounded to bluntly pointed. The oblong dorsal sepal is 0.6 in. (1.6 cm) long by 0.3 in. (0.8 cm) wide near the tip with a somewhat narrower base. The obliquely egg-shaped lateral sepals are 0.6 in. (1.6 cm) long by 0.6 in. (1.5 cm) wide, which is much wider than the other floral segments. The spoon-shaped petals have a relatively long claw at the base and a rather rounded blade. They are 0.6 in. (1.5 cm) long by 0.4 in. (1.1 cm) wide near the apex. The 3-lobed lip is slightly longer than the sepals, 0.9 in. (2.2 cm) long by 0.4 in. (1.1 cm) wide across the midlobe, and slightly wider across the base of the lateral lobes. The large, erect lateral lobes are rounded to obliquely oval, concave on the inner side, and usually a cleaner, brighter white than the other parts of the lip. The midlobe is oblong with a U-shaped contraction on each side near the middle and a U-shaped notch in the center of the apical margin. The midlobe has 4-5 thickened, raised, longitudinal ridges or keels that may extend almost to the apex. The callus at the base of the lip is 2-lobed, and it usually has an orange-yellow blotch on each side. The conical spur at the base of the lip is about 0.25 in. (0.6 cm) long, flattened, and bluntly tipped.

HYBRIDIZING NOTES: Chromosome count is $2n = 38$.

REFERENCES: These cultural notes are written by Charles and Margaret Baker
ORCHID SPECIES CULTURE <http://www.orchidculture.com/>

Grant, B. [1895] 1966. *Orchids of Burma and the Andaman Islands*. Hanthawaddy Press, Rangoon, Burma. Reprint, Twin Oaks Books, Greenfield, Wis.

Hamilton, R. 1988. *When does it flower?* 2nd ed. Robert M. Hamilton, 9211 Beckwith Road, Richmond, B. C., Canada V6X 1V7.

Hawkes, A. [1965] 1987. *Encyclopaedia of cultivated orchids*. Faber and Faber, London.

Kamemoto, H., and R. Sagarik. 1975. *Beautiful Thai orchid species*. Orchid Society of Thailand, Aksornsampan Press, Bangkok, Thailand.

Motes, M. R. 1997. *Vandas their botany, history, and culture*. Timber Press, Portland, OR.

Seidenfaden, G. 1988. *Orchid genera in Thailand XIV. Fifty-nine vandoid genera*. *Opera Botanica* 95, Copenhagen, Denmark.

Veitch, J., and Sons. [1887-1894] 1963, 1981. *Manual of orchidaceous plants*, vols. I-II. James Veitch and Sons, Royal Exotic Nursery, Chelsea, London. Reprint, vol. I, A. Asher and Co., Amsterdam, The Netherlands; reprint, vol. II, Bishen Singh Mahendra Pal Singh, Dehra Dun, India.

PHOTOS/DRAWINGS: Kamemoto, H., and R. Sagarik. 1975. *Beautiful Thai orchid species*. Orchid Society of Thailand, Aksornsampan Press, Bangkok, Thailand. (Color photo)

Veitch, J., and Sons. [1887-1894] 1963, 1981. *Manual of orchidaceous plants*, vols. I-II. James Veitch and Sons, Royal Exotic Nursery, Chelsea, London. Reprint, vol. I, A. Asher and Co., Amsterdam, The Netherlands; reprint, vol. II, Bishen Singh Mahendra Pal Singh, Dehra Dun, India. (Drawing of flower)