

## *Vanda flavobrunnea* Rchb. f.

**SYNONYMS:** *Vanda pumila* Hooker f., *Trudelia pumila* (Hooker f) Senghas. This species was described by Reichenbach in 1886 without reference to its habitat. We have been unable to find the species discussed in the literature, but the Kew Data Base (2007) has it listed and included *Vanda pumila* as its synonym. The following climate data, cultural suggestions, and plant and flower information are based on this synonymy.

**ORIGIN/HABITAT:** Northwest Himalayas including Nepal, Sikkim, northeast India, Bhutan, Burma, northern Thailand, Laos, Vietnam, China, and Sumatra. In the northwest Himalayas, plants are found from Kumaun to Arunachal Pradesh and Meghalaya at 1650-2150 ft. (500-650 m). In Sikkim, plants have been collected in the lower tropical zones at about 1650-1950 ft. (500-600 m). In Thailand, plants have been found at numerous locations in the northern mountains at 3150-4350 ft. (960-1320 m). In Laos, plants have been found near Xieng Khouang; and in Vietnam, collections have been made in the mountains near Dalat. In southwest China, collections have been made in tropical areas from southwest Guangxi Province near Lin-yun to southern Yunnan Province near Me-jiang. Comber (1982) reported that in Sumatra plants are found in the northern mountains at 3600-4250 ft. (1100-1300 m). They grow in open-branched, isolated trees in very bright light and have a root system which grows only on bare branches where no humus collects.

**CLIMATE:** Station #48327, Chiangmai, Thailand, Lat. 18.8N, Long. 99.0E, at 1100 ft. (335 m). Temperatures are calculated for an elevation of 3600 ft. (1100 m), resulting in probable extremes of 92F (33C) and 54F (12C)

N/HEMISPHERE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
F AVG MAX	77	82	87	88	86	82	81	79	80	81	78	76
F AVG MIN	48	49	54	62	66	66	66	67	65	63	58	49
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	24.9	27.8	30.6	31.1	30.0	27.8	27.2	26.1	26.7	27.2	25.6	24.4
C AVG MIN	8.8	9.4	12.2	16.7	18.9	18.9	18.9	19.4	18.3	17.2	14.4	9.4
DIURNAL RANGE	16.1	18.4	18.4	14.4	11.1	8.9	8.3	6.7	8.4	10.0	11.2	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 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.

**TEMPERATURES:** Summer days average 79-82F (26-28C), and nights average 66-67F (19C), 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 86-88F (30-31C), nights warm from 54 to 66F (12 to 19C), and the diurnal range falls from 33 to 20F (18 to 11C). According to Comber (1982), these plants cannot tolerate the conditions in the tropical lowlands of Sumatra and will die within a few weeks if brought down to sea level.

**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. 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 76-82F (24-28C), and nights average 48-49F (9C), 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 night-time 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, fast-draining medium. Some are grown with only enough open, chunky medium, such as charcoal or large cork chips, to anchor the plant until it attaches to the container. Many growers prefer relatively large chunks of tree-fern fiber or coarse fir bark mixed liberally with broken crock and/or charcoal. Others successfully use only broken crock, cracked brick, chunks of volcanic pumice, vermiculite, or even coarse sand. Plants are sometimes placed in an empty clay pot and allowed to grow with nothing around the roots but air. Plants grown in this manner should be tied or wedged firmly in place until new root growth has anchored them to the side of the pot. However the plants are grown, their roots need to grow and hang down as far as they choose. They should never be trimmed to make things look neat. Vanda growers report that anything more than minimum root trimming may set the plant back 2-3 years. Continuous air movement around the roots is critically important.

**MISCELLANEOUS NOTES:** The bloom season shown in the climate table is based on cultivation records. Comber (1982) reported that in Sumatra plants flower throughout the year. In the Himalayan region, however, blooming usually occurs in spring.

#### **Plant and Flower Information:**

**PLANT SIZE AND TYPE:** A dwarf, 4-6 in. (10-15 cm) monopodial epiphyte.

**STEM:** 4-6 in. (10-15 cm) long. The stout stem is enclosed by distichous, overlapping sheaths at the base of the leaves. These sheaths persist on the lower part of the stem, even after the leaves have fallen

**LEAVES:** 2.8-4.0 in. (7-10 cm) long by 0.6-1.2 in. (1.5-3.0 cm) wide. Numerous narrowly oblong, leathery leaves are distichously arranged on each stem. The leaves are ascending to arching, bilobed at the apex, longitudinally folded along the midvein for most of their length so that they are V-shaped in cross section, and somewhat dilated toward the base.

**INFLORESCENCE:** Up to 6 in. (15 cm) long. The short, almost horizontal flower spikes emerge along the leaf axils. Flowers are carried in loose, few-flowered racemes toward the tip of the spike.

**FLOWERS:** 2-4 per inflorescence. The sweetly fragrant, heavily textured blossoms measure up to 2 in. (5 cm) vertically but somewhat less horizontally. Sepals and petals are greenish white to cream-colored and may be marked with small dots of brown or wine-purple at the base. The lip has white lateral lobes and a yellowish to cream-colored midlobe that is marked with several longitudinal red stripes. The column is white. The narrowly oblong sepals are 0.8-1.2 in. (2-3 cm) long by 0.2-0.3 in. (0.6-0.8 cm) wide and are somewhat drooping with rounded tips. The lateral sepals curve forward in a pronounced manner. The narrowly linear petals are 0.6-1.1 in. (1.5-2.8 cm) long by 0.1 in. (0.3 cm) wide, have sharply pointed tips, and twist to be held in a somewhat horizontal position. The 3-lobed, concave lip is large in relation to the size of the flower, measuring 0.7-0.9 in. (1.8-2.3 cm) long by up to 0.6 in. (1.6 cm) wide, and is the most attractive and distinctive feature of the species. The lateral lobes near the base of the lip are short, erect, and triangular with rather blunt tips. The rather large, oval midlobe tapers abruptly to a narrow, rounded tip and has several longitudinal keels toward the base. There is a short, conical, bluntly tipped spur at the base of the lip. The column is short and stout.

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