

BUILDING BLOCK DATA

Paphiopedilum bellatulum [Rchb.f]Stein 1892

SUBGENUS *Brachypetalum* Haller 1897

Description:

Four to five, oblong, elliptic, rounded and minutely emarginate apically, mottled dark and pale green leaves that are purple spotted below. It flowers in the spring and summer from a short, pubescent, dark purple inflorescence with a floral bract that is half as long as the ovary arising from the top center of the leaves and just clears or touches the leaves .³

Paphiopedilum bellatulum is a charming species and one of four in section *Brachypetalum* of the genus *Paphiopedilum*. Distinguishing floral characteristics of *Paphiopedilum bellatulum* include a pouch (labellum) without ears but with an inrolling of the pouch margins. The dorsal sepal and petals are saucer-shaped and are nearly uniform in size. Overall size of the plant and flower is small, and the stem is short. The leaves are dull green with lighter irregular maculations and purple pigmentation underneath; they measure 7.0-10.0" (17.5-25 cm) long by 3.0-3.5" (7.5-8.75 cm) wide. The inflorescence is very abbreviated, bearing solitary flowers on a short hairy peduncle. The flower, nestled just barely above the mottled green foliage, has a round form and saucer-like shape. On closer inspection we see dense spots or blotches of purple on a white or pale cream background. There is an alba form as well as one with spots arranged longitudinally. The natural spread of the flower ranges from 2.0-3.0" (5.0-7.5 cm).⁵



Distribution/Habitat:

This is a small sized, hot to cool growing terrestrial species occurring in Assam India, Myanmar, Thailand and central and Yunnan China in shady, limestone crevices with the roots in leaf mold

and moss or on moist, mossy covered limestone rocks in shady spots at an altitudes of 300 to 1600 meters ³

Northeast Burma and adjacent parts of northwest Thailand. Plants are usually found at 3300-4900 ft. (1000-1500 m), where they grow exposed to full sun or in the dappled shade of stunted, deciduous forests. *Paphiopedilum bellatulum* grows in cracks and crevices on limestone outcroppings in a layer of leaf-mold and moss. Plants also grow as low as 1100 ft. (340 m) in areas with year-round water seepages and on ledges along marble cliffs with their roots extending in cracks and crevices filled with clay loam. -- Source: Charles Baker ⁴

Synonyms:

Cordula bellatula Rolfe 1912; *Cypripedium bellatulum* Rchb.f 1888; *Paphiopedilum bellatulum* f. album (O'Brien) Braem 1998; *Paphiopedilum bellatulum* var. album O'Brien 1896

Awards:

Origin	HCC	AM	FCC	JC	CCM	CHM	Total
	75	78	1	0	3	1	160
Years	1980-2005	1967-2018	1987		1969-1977	2009	

Hybrids: F-1

Before 1940	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	After 1999
80	0	1	3	21	42	56	108

The charts above and below clearly show that hybridization efforts virtually stopped with this *Paphiopedilum* until the discovery of *P. besseae* and *kovachii* and the production of 4n plants which helped with the infertility of hybrids.

Hybrids: Total Progeny

With over 14,000 progeny, the table was unmanageable. The Generations table from Orchid Wiz

13 Generations of Progeny				
G	Grexes	Awdd.	% Awdd.	Awds
1	308	94	30.5%	858
2	495	100	20.2%	285
3	479	97	20.3%	253
4	1,435	160	11.1%	430
5	2,267	252	11.1%	660
6	2,514	330	13.1%	830
7	2,734	455	16.6%	1,205
8	2,085	370	17.7%	804
9	1,206	240	19.9%	614
10	412	73	17.7%	197
11	78	16	20.5%	65
12	6	0	0%	0
13	3	0	0%	0

shows a explosion of breeding with generation 4 starting in the 1970's and continuing through the early 2000's.

Although there records of some naturally occurring 4n hybrids of bellatulum, artificially produced 4n breeding stock has led to a raft of extremely complex hybrids.

Outstanding progeny and reason they are considered outstanding:



Paphiopedilum Paeony AM/AOS

This complex hybrid, registered in 1956 by Ratcliffe, is the beginning of a breeding line of very colorful Paphs in the time before the discovery of *P. besseae* and *kovachii*. It produced 211 F-1 and 1,767 total progeny in 6 generations. The progeny have 373 awards. The following are a selection of Paeony offspring showing brilliant colors.



Paph Orchella



Paph Amanda



Paph Ali Taba



Paph Veritilario



Paph Night Sky



Paphiopedilum F. C. Puddle AM/AOS

This hybrid is the first of a long breeding line of white Paphs. Although it was registered in 1932, it was not used much in breeding until the early 1950's. Because it is a natural tetraploid, Puddle has 211 F-1 crosses registered and almost 2,000 progeny in 6 generations. The latest was registered in 2017. The following are some of the white offspring.



Paph Silvara



Raph Blanche Sawyer



Paph Susan Tucker



Paphiopedilum Winston Churchill FCC/AOS

This is the hybrid of *P. bellatulum* with the most F-1 crosses. It was registered in 1951 and has produced 646 F-1's and 3,362 total progeny in 6 generations. It has 17 AOS awards including 2 FCC. Its progeny have garnered 1117 AOS awards.

Desirable characteristics which can be passed to progeny:

Small sized plant with large flowers for growers with limited space. Other desirable characteristics are round shape, full form, broad petals, heavy substance, enhancement of other parent's colors and willingness to breed with other Paph species and hybrids. Its small growth habit and vigor and attractive foliage are also plusses.⁵

Undesirable characteristics which can be passed to progeny:

Low fertility, few seeds and some mechanical problems are some of the typical Paph problems. It passes on short stems to its first and second generation progeny.

Other information:

The plant should be kept moist but not soaking wet. Frequency of watering depends on the temperature, humidity and medium used. In fact, some growers recommend a drying out period in the colder winter months. The composition of the pot-ting mix determines the frequency of water-ing. If the mix is dense and holds water, once or twice a week is usually sufficient. Water quality is important, and the brachypetalums prefer water low in salt, slightly alkaline and deionized if possible. Under-watering is harmful, and can be recognized by desiccated outer leaves and/or roots. Pot-versus overhead-watering is a matter of preference. The leaves need flushing with water periodically, but they also need to dry off in cool damp weather to prevent rot, especially in the axils and buds. Plants in small pots require more frequent watering than those in large pots. Misting alone can-not replace a thorough flushing of the plants and medium to dilute buildup of salts, fertilizers and pesticides. Media are as varied as there are growers around the world. These include many varieties of bark, i.e., fir, redwood or cypress. Other materials are sphagnum, peat, osmunda and a combination of some of these materials with the addition of lime, char-coal, perlite and trace elements. Examination of the roots periodically will indicate if the plant growth has been healthy in a particular mix. If there are few or no roots, the medium may have deteriorated and/or the plant may have been overwatered or under watered, thus weakening the plant and allowing an invasion of disease. Repotting can be done at any time, but must be done right away if the medium shows signs of deteriorating, or if the plant fails to thrive as evidenced by poor growth. Some growers prefer to pot in early spring or late summer when the plant is in active growth. Others pot when the buds show or immediately after blooming. Do not be in a hurry to repot if the pot size is adequate for growth or the medium is still in good condition. Allow the plant to develop multiple growths before dividing, and it will be stronger and more floriferous. Paphiopedilums are easier to repot than many orchid genera because the medium just shakes off the roots. Trim dead roots and old crowns and treat with a fungicide before repotting. Plastic or clay pots can be used, but each requires a slightly different method of pot-ting. Some crock, gravel or lava rock should be put in the bottom of plastic pots for weight and stabilization of the plant. Clay pots are heavy and do not need the additional weight for stabilization, but dry out faster than plastic ones. Paphiopedilums do not require heavy feeding. Half-strength fertilizer can be applied about every third watering, or quarter strength every second watering. Some growers always use a balanced fertilizer, while others increase the nitrogen during active periods of growth. If using an organic medium, e.g., sphagnum, osmunda or peat, plants require less fertilizer. Very luxuriant leaf growth with few flowers may indicate over fertilization. Leaf-tip burn may indicate either too much fertilizer or excessive light. Only a few pests or diseases attack these plants: red spider in hot dry weather, snails and slugs at any time, and rot. ⁵

References:

Aldridge, Peggy. 2008. *An Illustrated Dictionary of Orchid Genera.* Selby Botanical Garden Press.

¹**la Croix, Isobyl. 2008.** *The New Encyclopedia of Orchids.* Timber Press

²**Pridgeon AM, Cribb PJ, Chase MW, Rasmussen FN. 2009.** *Genera orchidacearum, Vol. 1.*

³Jay Pfahl's IOSPE at www.orchidspecies.com

⁴OrchidWiz.Database X5.0

⁵**Steiner, Bernice H.,** July 1989, *Paphiopedilum bellatulum* and its Progeny *American Orchid Society Bulletin*

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