SHORT COMMUNICATION

TAXONOMIC NOTES ON GROSOURDYA MURICULATA (ORCHIDACEAE: EPIDENDROIDEAE: VANDEAE: AERIDINAE), A LITTLE KNOWN ENDEMIC ORCHID FROM THE ANDAMAN & NICOBAR ISLANDS, INDIA

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Taxonomic notes on *Grosourdya muriculata* (Orchidaceae: Epidendroideae: Vandeae: Aeridinae), a little known endemic orchid from the Andaman & Nicobar Islands, India

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ABSTRACT: *Grosourdya muriculata* (Rchb.f.) R. Rice (Orchidaceae) is a little known epiphytic, endemic orchid from the Andaman & Nicobar Islands in India. The present article provides the detailed taxonomy, ecology, distribution, conservation status, and photographic account of the species. The data collected from field surveys indicates that the status of the species needs to be downgraded to Near Threatened as per the criteria of IUCN (2018).

KEYWORDS: Epiphytes orchid, ecology, distribution, conservation status, photographic account, status upadation, threatened taxa.

The epiphytic genus *Grosourdy* was established by H.G. Reichenbach in 1864 to commemorate R. de Grosourdy, a renowned botanist who specialised in the medicinal plants of the Antilles and tropical southern America. It belongs to the subtribe Aeridinae, tribe Vandeae, and subfamily Epidendroideae of the family Orchidaceae. Preliminary molecular studies (Pridgeon et al. 2014) led to the broadening of the circumscription of the genus and more than 20 species from the genera *Ascochilus* Ridl., *Ascochilopsis* Carr., and *Biermannia* King & Pantl. were placed under it. More recently, Rice (2018) transferred eight species of the genus *Pteroceras* to *Grosourdy* on the basis of supporting evidence from his own work and the preliminary phylogenetic study of Pridgeon et al. (2014). The recently expanded genus now includes species with pollinia having notched or cleft aperture without auricles to the stipe. Therefore, small short-stemmed *Pteroceras* species with characters more consistent with the genus *Grosourdy*, such as densely muricate to spicate surface of the inflorescence rachis and short-lived flowers generated singly in succession with gently curved column and a large conspicuous stigma are, placed under it. This brought up the total number of species in the genus to 28, distributed from China and the Indian subcontinent to southeastern Asia.

Before the revision by Rice (2018), five species of the *Pteroceras*, namely *P. muriculatum* (Rich.f.) P.F. Hunt, *P. monsooniae* Sasidh. & Sujanapal, *P. leopardinum* (E.C. Parish & Rchb.f.) Seidenf. & Smitin, *P. teres* (Blume) Holtottm., and *P. unguiculatum* (Lindl.) H.A. Pedersen, were reported from India. With the recent species transfer, two species, namely *P. monsooniae* Sasidh. & Sujanapal and *P. muriculatum* (Rich.f.) P.F. Hunt, were transferred to the *Grosourdy*. Additionally, based
on molecular studies, Kocyan & Schuiteman (2013) transferred P. unguiculatum (Lindl.) H.A. Pedersen to the genus Brachypeza. After these recent taxonomic modifications, the Pteroceras in India include only two species, namely P. leopardinum (E.C. Parish & Rchb.f.) Seidenf. & Smitin and P. teres (Blume) Holttum (Table 1).

The updated taxonomy led to an increase in the number of species of Grosourdya in the Andaman & Nicobar Islands to three, namely, G. appendiculata (Blume) Rchb. f., G. muriculata (Rchb.f.) R. Rice, and G. muscosa (Rolfe) Garay. Pteroceras, earlier represented by three species (P. muriculatum (Rich.f.) P.F. Hunt, P. teres (Blume) Holttum, and P. unguiculatum (Lindl.) H.A. Pederson), now consists of only one species, namely P. teres (Blume) Holttum.

Grosourdya muriculata (Rchb.f.) R. Rice is an endemic species of the Andaman & Nicobar Islands and was recorded as Endangered by Karthigeyan et al. (2014). Moreover, it was described as one of the vanishing orchid species of the island (Mathew et al. 2005). The present authors studied the species for its detailed taxonomy, ecology, and distribution and evaluated its conservation status as per the recent IUCN criteria (IUCN 2018). The results are summarized below along with images for ease of identification.
Taxonomic notes on *Grosourdya muriculata*  

**Grosourdya muriculata** (Rchb.f.) R.Rice  


Type: *Bull s. n.* (anno1881)/Herb, Rchb.f. 31588, “India orientalis”-Andaman Islands (Holotype W).  

Epiphytic herb, stem terete, glabrous, erect to pendent, unbranched, 4–8 cm long. Leaves sessile, distichously arranged, spreading, elliptic-oblong to lanceolate, c. 18.0×2.5 cm, obliquely botched or bilobed at apex, leaf base clasping the stem, coriaceous; leaf sheaths imbricate, glabrous, covering the internodes. Inflorescences many, perforating the leaf sheaths, racemose, pendulous, 5–15 cm long, peduncle glabrous, c. 5 cm long, rachis c. 10 cm, 10–20 flowers, floral bracts triangular and concave. Flowers spirally arranged, pedicellate, light yellow, c. 1.5 cm across, sweet-scented. Sepals and petals with two to four purple bars. Sepals sub-equal; median sepal obovate to elliptic, c. 7.5×4.0 mm, obtuse at apex, base 1.2–2.4 mm wide; lateral sepals spreading, c. 7×4 mm, pointed at apex, base 1.4–3.1 mm wide. Labellum 3.5–5.1 mm long, sessile, erect side lobes pointing upwards, white with a brick red blotch, 3.5–5.0 × 1.1–2.0 mm, triangular; apex mostly obtuse, finely serrate, front edges connected by high apically bilobed wall. Mid lobe in form of white crest like callus with raised, somewhat erose violet margins (Image 2D), 0.1–2.1 mm long, 1.3–2.5 mm wide, 0.7–1.1 mm high. Spur somewhat conical, 2.4–3.7 mm in outer diameter, glabrous, white, often spotted purple in front; apex shortly prolonged, rounded, glabrous, white to light yellow. Columns sub-terete or slightly clavate; 3.0–4.4 mm high, 1.2–1.7 mm in diameter, brick red. Column foot 2.6–4.1 mm long glabrous and smooth. Anther terminal, triangular with a caudate apex, strongly
incumbent. Pollinia two, obovoid, with deep cleft, with stipe 0.9mm long. Capsules c. 75×4 mm wide (Figs. 1 & 2).

Flowers and fruits: March–November (flowers more than once a year).

Distribution and ecology: Endemic to Andaman & Nicobar Islands. This species prefers to grow in dense shade. Usually, it is found on plants near small rainwater streams running inside forests. Sometimes it is observed in mangrove swamps and rocky sea shores. They are extremely sensitive to exposure to direct sunlight and heat and, therefore, are found always in the shade. They are found growing scattered or in small populations of 75–100 mature individuals at a locality.

Note: Hooker (1885) treated this species as *Sarcochilus muriculatus* Rchb.f., where he mentioned
sepalas and petals with two purple bars. The authors, however, observed the flowers with two to four purple bars on sepals and petals. Mathew et al. (2005) recorded the flowering period of the species in Andaman to be exclusively in the rainy season during the southwest monsoon in May to June. Karthigeyan et al. (2014) mentioned the flowering period to be April–November. Careful observation of the phenology of the species in different seasons and herbarium data of previous collections from the island reveal that it has several flowering periods during March–November, both in the wild and in the individuals conserved in the Dhanikhari Experimental Garden cum Arboretum, Nayashahar, Port Blair.

**DISCUSSION**

According to Mathew et al. (2005), *Grosourdya muriculata* was not collected since its original description, until their own collection in 2005 from the semi-evergreen forests at Chidiyatapu, South Andaman Islands. It was considered one of the vanishing, endemic orchid species from the Andaman Islands. Afterwards, Karthigeyan et al. (2014) assessed the orchid diversity of the Andaman & Nicobar Islands and recorded the species from South Andaman, North Andaman, and Little Andaman as one of the rare orchids.

In the present assessment, the authors located and collected *Grosourdya muriculata* from Kyd and James Islands in South Andaman, Long Island in Middle Andaman, Ramnagar in North Andaman, and on the way to Harmander Bay at Krishnanagar Nallah in Little Andaman. These collections were successfully conserved in the Dhanikhari Experimental Garden cum Arboretum of the Botanical Survey of India in Nayashahar, Port Blair. The authors also consulted 12 specimens placed at the herbarium of the Botanical Survey of India, Andaman & Nicobar Regional Center (PBL), collected by different workers from Andaman Islands.


**Middle Andaman:** 1332 (PBL), 04.v.1974, Panighat, Mayabunder, ±25m, coll. N.P. Balakrishanan.


**CONCLUSION**

Based on the present study and field observations, the authors are of the opinion that *Grosourdya muriculata* is distributed throughout the Andaman Islands, namely North, Middle, South, and Little Andaman. It is also present in small islands such as Long Island, Kyd Island, James Island, Havelock Island, and Rutland Island. We could locate two specimens from Nicobar Islands identified as *Grosourdya muriculata* (PBL572, 14.iii.2015, Katchal Island, Japan Tikari, coll. S. Prabhu & R. Sathiayaseelan; PBL415, 18.x.2011, Nancowry Island, Nallah Basthi, coll. S. Prabhu & R. Sathiayaseelan) placed at PBL. These specimens did not have flowers and, therefore, their identity could not be ascertained by the authors because of its similarity with *Pomatocalpa spicatum* Breda, Kuhl & Hasselt in the vegetative stage. Therefore, further investigation is needed to ascertain its occurrence in the Nicobar Islands.

*Grosourdya muriculata* was assessed as Endangered [EN B1ab (i,ii)] by Karthigeyan et al. (2014). Although the area of occupancy of the species is less than 5,000km², the authors were able to locate its population at 11 localities (Fig. 1) during field observations in the present study. At each locality, about 50–75 clumps were seen with each comprising one to five mature individuals. At five locations, multiple sub-populations were also observed. Therefore, on the basis of IUCN (2018), the authors suggest changing the status of the species to Near Threatened as the species does not qualify for a threatened status at present but is likely to do so in the near future. As most of these localities fall under protected areas, there is no immediate grave threat to the existence of the species. Further field surveys and regular monitoring, however, are recommended as these localities are scattered and some of them are facing threats due to anthropogenic and natural coastal activities, which may lead to the disappearance of the species from the habitats situated at the periphery of open forests.
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**REPRESENTATIVE COLLECTION**: Herbarium specimen of *Grosourdya muriculata*.

**REFERENCES**


Image 3. Herbarium sheet of *Grosourdya muriculata*
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