Rafflesia mixta (Rafflesiaceae), a new species from Surigao del Norte, Mindanao, Philippines

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Abstract

Rafflesia mixta Barcelona, Manting, Arbolonio, Caballero & Pelser is described as a new species from the Caraga Region of northeastern Mindanao, Philippines. In their general morphology, the flowers of this species most closely resemble those of R. mira, but they are different in details of the perigone warts and processes, disk color, and relative size of the diaphragm opening. This discovery brings the total number of Philippine Rafflesia species to twelve, of which four are found on the island of Mindanao.

Key words: Caraga Region, Mainit, Mamanwa tribe, parasitic plants, taxonomy

Introduction

Rafflesia Brown (1821: 207; Rafflesiaceae) is a genus of endophytic holoparasites that exclusively infect lianas of the genus Tetrastigma Miquel (1863: 72; Vitaceae) and inhabit the tropical rainforests of southern Thailand, Malaysia, the Philippines, and Indonesia. In the Philippines, we currently recognize eleven species (Teschemacher 1844, Blanco 1845, Hieronymus 1885, Barcelona & Fernando 2002, Fernando & Ong 2005, Barcelona et al. 2006, 2008, 2009a, 2009b, 2011, Galang & Madulid 2006, Balete et al. 2010, David et al., 2012, Pelser et al. 2013). Except for one, all of these are endemic to individual Philippine islands. Only R. speciosa Barcelona & Fernando (2002: 648) is known from two islands (Negros and Panay). Although Rafflesia is found in most of the larger Philippine islands, this genus has, thus far, not been reported from Bohol, Cebu, Masbate, Mindoro, Palawan, and smaller islands. Mindanao is the second largest island in the Philippine archipelago and home to three described Rafflesia species (Fig. 1). Of these, R. schadenbergiana Göppert ex Hieronymus (1885: 3) stands out by having the largest flowers of any Philippine species. Rafflesia verrucosa Balete, Pelser, Nickrent & Barcelona (2010: 50) is characterized by its relatively small flowers and large warts on its perigone lobes and diaphragm, whereas flowers of R. mira Fernando & Ong (2005: 267) display remarkably polymorphic disk processes and a smooth diaphragm lacking ornamentation.

In April 2009, during a resource assessment project that was part of the Ancestral Domain Sustainable Development and Protection Plan (ADSDPP) for the Mamanwa (= Mamanua) tribe’s Certificate of Ancestral Domain Title (CADT) application, a team led by Jerwin T. Resola and Catherine Mae Buctuan-Jandug discovered a new population of Rafflesia in the mountains east of Mainit in Surigao del Norte Province. In March 2014, photos of a plant from this population were posted by one of the authors of this paper (RBA) on the Co’s Digital Flora of the Philippines (CDFP) Facebook Group. This group functions as a medium of correspondence between users and contributors of the CDFP website (www.philippineplants.org, Pelser et al. 2011 onwards). CDFP is a citizen science project in which amateurs, students, and professional botanists edit an online checklist of Philippine vascular plants and illustrate it with in situ photographs that are deposited at the PhytoImages website (Nickrent et al. 2006 onwards). During subsequent fieldwork in April, May, and June 2014, flowers and buds of this species were collected and preserved. Morphological studies showed that these flowers are distinct from all presently known Rafflesia species in several characters that traditionally have been used for species delimitation in this genus. Assuming that these morphological differences are an indication of reproductive isolation, we name and describe these plants here as a new species under a biological species concept (Mayr 2000). This new addition brings the total number of Philippine Rafflesia species to twelve.
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References


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