

## *Amblyanthopsis bhotanica* rediscovered in Bhutan after 181 years

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*Amblyanthopsis bhotanica* (C. B. Clarke) Mez (Primulaceae, though formerly placed in Myrsinaceae) is one of four species in this genus of Asiatic evergreen shrubs, which are found in India, Bhutan and the Philippines. In the *Flora of Bhutan* (Long & Rae 1999) it was treated in the closely-related genus *Ardisia* along with six other species. Both genera are distinctive in their somewhat leathery gland-dotted leaves, and when in ripe fruit by their bright red fleshy drupes.

Of the two genera, the most widespread and familiar species in Bhutan is *Ardisia macrocarpa* Wall., which is quite frequent in evergreen oak and cool broadleaf forests throughout southern and central Bhutan. It has fairly narrow elliptic leaves up to 14 cm long and 4 cm wide, gland-dotted beneath, and with conspicuous glands on the crenate margins. Its flowers and red fruits are borne in erect umbels. *Ardisia macrocarpa* was described by Nathaniel Wallich in Roxburgh's *Flora Indica* (Roxburgh 1824), based on Wallich's own observations and specimens from the central valley of Nepal made in 1821. It is widespread throughout the Himalayan region. Wallich aptly noted, as follows: "This is a very elegant shrub both in flower and fruit. Its leaves are long and remarkably tapering toward the narrow base; margins beautifully crenate, glandular and knobbed; the thick elevated glands which occupy the interstices of the crenatures, rising considerably above the upper surface. The berries are very large."

*Amblyanthopsis bhotanica*, in contrast, though similar in many ways, is a rare species, described as *Ardisia bhotanica* C. B. Clarke in the *Flora of British India* (Clarke 1882). The only specimen available to Clarke was collected in Bhutan by William Griffith, the first western botanist to visit Bhutan in 1838 (Long 1979). The type specimen is preserved in the Kew herbarium (K000802062) and can be viewed online. Unfortunately, the only data on the specimen is the locality (Bhotan, herb. Griffith) along with the Kew Distribution label No. 3587 under which duplicates of this specimen were distributed from Kew. Griffith's specimen may originally have borne a collector's number on a field ticket, but this has not been preserved, so that the specimen cannot be linked with certainty to a specific locality mentioned in his 'Itinerary Notes' (Griffith 1848). Clarke's description and the type specimen indicate a plant with larger, lanceolate leaves than *A. macrocarpa*, up to 22 × 6.5 cm, more thinly coriaceous in texture, with flowers in deflexed axillary panicles up to 5 cm long.

According to Sikdar (1986) Griffith's specimen was collected at Murichom (now Meritsemo) in the lower Raidak River valley, at approximately 28°54'N, 89°35'E. According to Long (1979) Griffith passed through Murichom on 16 to 18 May 1838 on his departure from Bhutan via Buxa, which was then in Bhutan but is now part of West Bengal, India. Sikdar (1976, 1986) reported the rediscovery of this species north of Buxaduar close to the southern Bhutan frontier, in May 1976, when the plants (like Griffith's) were in flower. This may be just south of Griffith's type locality.

On 28 November 2019 this species was found by the first author in a quite different part of Bhutan, further east, in southern Bhutan in Sarpang District, in Jigmecholing Gewog, 3 km north-east of Simkharkha along the bank of the Simkhar Chhu stream at



Fig. 1. Gong Khola valley at Retey, showing disturbed valley floor and slopes with warm-temperate broadleaf forest.

27°04'26.332"N, 90°30'6.025"E, at an altitude of 1399 m. A herbarium specimen was collected by the first author, under the number BTN095, with the Bhutan National Herbarium accession numbers THIM15392, 15393, 15394 and 15424.

This new locality is within the Jigme Singye Wangchuck National Park, with open forest dominated by warm-temperate broadleaved tree species, particularly *Alnus nepalensis* D. Don. The plants were growing in clumps along the stream bank amongst scattered fast-growing trees and shrubs of several species, as understory to the *Alnus*—a species typically indicative of disturbed ground. The stream banks, which are clearly subject to intermittent flooding, are composed of sandy soil mixed with boulders and pebbles. Even though the area is protected as part of the National Park, it is grazed by cattle which adds to the disturbance and indeed in moderation can benefit plants which favour such unstable habitats. However, it is also possible that in future, local economic development activities such as farm road construction may threaten this species.

A few plants were also seen at Retey (Fig. 1), which lies in the upper Gong Khola basin in the same District and Gewog. There are plans to connect Retey by a new farm road which will pass through the area where the plant is growing. The most serious threat is from competition from the noxious invasive 'Crofton-weed', *Ageratina adenophora* (Spreng.) R. M. King & H. Rob., originally native to Mexico but now a serious pest throughout southern Bhutan and other countries of south Asia.

The species has been well-illustrated and described by Odyuo & Roy (2019) from their discovery of the species in 2011 in a new locality in the Kakoi Forest Range in the



Fig. 2. Leafy shoot of *Amblyanthopsis bhotanica* with young fruit.



Fig. 3. Ripe fruit of *Amblyanthopsis bhotanica*.

North Lakhimpur Forest Division of Assam, close to the border with Arunachal Pradesh, some 380 km east of the new Bhutanese locality. The Bhutanese plants fit their description well, in that the plants bear somewhat clustered, gland-dotted leaves only on the upper parts of the stems, which are up to 2 m tall. The Assam plants were in flower but bore only unripe green fruits, whereas the Bhutan plants had flowers only in bud but with both young green and bright red ripe fruits (Fig. 2, 3). It would appear in both cases that the fruits take almost a year to ripen from the flowering stage.

Some taxonomic work is still required on the genus *Amblyanthopsis*, particularly the status of *A. membranacea* (Wall. ex A. DC.) Mez, which was based on a specimen listed as *Ardisia membranacea* Wall. in Nathaniel Wallich's *Numerical List* (Wallich 1828–1849) as number 2288, a collection made by one of Wallich's collectors, Francis de Silva, in the Khasia & Jaintea Hills of Meghalaya in 1822. Clarke (1882) recognised both species

under the genus *Ardisia*, but distinguished *Ardisia membranacea* Wall. ex A. DC. from *A. bhotanica* C. B. Clarke primarily on having filaments 'much longer than the small round anthers'.

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