

# Orchids of Bhutan

## *Biermannia*

TANDIN WANGCHUK, KEZANG RINZIN AND STIG DALSTRÖM

THE ORCHID GENUS *Biermannia* King and Pantl. was established by George King and Robert Pantling (1897) in memory of Adolph Biermann, who at one time was the curator of the Botanic Garden in Calcutta, India. This poor gentleman was also the victim of a tiger attack in 1879, when a tiger escaped from the menagerie of the former King of Oudh (Awadh). The tiger swam across the nearby river and hid under some shrubbery in the botanical garden. Biermann, who happened to be standing nearby watching some noisy monkeys high up in a Kigelia tree (that were probably warning Biermann about the tiger), was attacked shortly afterwards by the most likely frightened feline and lost part of his scalp, but escaped alive. Unfortunately, Biermann died a year later of cholera (King 1895). The genus named in Biermann's memory was distinguished from *Doritis* Lindl. (today treated as *Phalaenopsis* Blume) by the absence of forked appendages on the "disc" (lip), with two species, one coming from the Khasia Hills and the other from the Sikkim Himalaya (King and Pantling 1897).

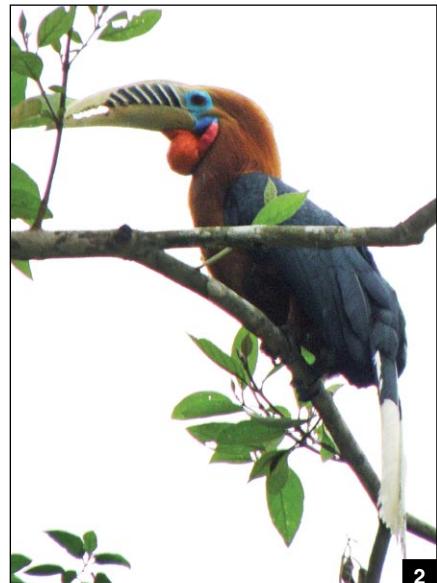
King and Pantling described *Biermannia quinquecallosa* King & Pantl. in the same publication as the genus and compared it with the only other known but unpublished *Biermannia* at the time: *Biermannia bimaculata* King & Pantl. They distinguished the new species by being a smaller plant and by the lip having side lobes. The type plant for *Bie. quinquecallosa* (R. Pantling 631) was growing as an epiphyte on *Pinus khasiana* at Jowai in Jaintia Hills, at an elevation of about 4,000 feet (1,330 m). Today, *Biermannia* consists of 13 accepted species (WCSP 2020), distributed from India, Myanmar, Thailand, Peninsular Malaysia, Sumatra, Java, Bali and Borneo (Pearce and Cribb 2002).

Returning to the birth of this genus in 1897, the picture gets blurry because when King and Pantling officially described *Biermannia bimaculata* the following year in their *Orchids of the Sikkim Himalaya* (King and Pantling 1898),



the name *Biermannia khasiana* is cited as the only other species in the genus. The previously published epithet of *Bie. quinquecallosa*, which was described as coming from Khasia, is not mentioned at all. In addition, the name *Biermannia khasiana* seems to have disappeared completely since then. Perhaps King and Pantling changed their minds about what to call this particular species from the Khasia Hills (west of Jaintia Hills) and preferred to use a new name for the earlier described *Bie. qinquecallosa*. But since the nomenclatural rules state that the first validly published name has priority, it has to be *Biermannia qinquecallosa*. This does not explain why *Bie. khasiana* is not listed as a synonym, or possibly as a *nomen confusum* of the earlier published species though. Any enlightenment on this matter would be appreciated by the authors.

Author Tandin Wangchuk is a Forest Officer stationed at the Forest Range Office in Nganglam, under the Divisional Forest Office of the Pemagatshel District in southern Bhutan. With a Bachelors of Science degree in forestry, he has been connected with nature since childhood and has studied freshwater fish and



[1] Forest Rangers Tandin Wangchuk (left) and Kezan Rinzin in their favorite habitat of the lush Bhutanese jungle.

[2] The Rufous hornbill (*Buceros hydrocorax* L.) is one of four majestic hornbill species in Bhutan.

amphibians as well as birds and orchids. He is also the station chief in Nganglam and, together with his 14 subordinates, performs the duties of protecting the wildlife from poaching and the forests from illegal cutting of trees. The Forest Rangers patrol day and night and sometimes risk their lives when enforcing the law against foreign armed poachers of various kinds. But whenever he has quiet and free time, Tandin Wangchuk enjoys taking his colleagues or his family out on photography trips documenting the fauna and flora of his jurisdiction. During one of these excursions he was trying to photograph the stately Rufous hornbill (*Buceros hydrocorax* L.) but was out of luck when the observant bird spotted him and flew away. Disappointed, Tandin Wangchuk turned around and started to walk back to his company when he

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suddenly saw a small orchid growing on a rotten stump. The orchid was out of flower but had some new inflorescences developing and some seed capsules on an old inflorescence. He was intrigued by the plant and took a photo of it to show his colleague Kezang Rinzin to see if he knew what it was. As it happened, Kezang Rinzin was busy collecting baseline orchid data for the Divisional Forest Office of Pemagatshel. He immediately recognized the plant because he had also seen it in a nearby area, but again without flowers. The two rangers decided therefore to return to one of the sites later to monitor the development of new buds forming on the emerging inflorescences. At that time, the orchid team of Choki Gyeltshen, Pem Zam, Dupchu Wangdi and author Dalström arrived from the National Biodiversity Centre (NBC) in Serbithang, Thimphu. The NBC team was in the area surveying potential sites for *Paphiopedilum* Pfitzer species and expressed an interest in visiting the rich forest that surround the town of Nganglam together with somebody from the Forest Office. Without hesitation, Tandin Wangchuk and Kezang Rinzin opted to revisit one of the places where their unknown orchid had been found together with an assortment of other interesting species.

Unfortunately, the anonymous plant was still out of flower when visited by the expanded orchid team, but the emerging inflorescences looked promising. It was therefore decided that Tandin Wangchuk and Kezang Rinzin would keep the plant under observation and hopefully take some photographs of the flowers for a proper identification whenever they would open. A few weeks later the first photographs of the somewhat disappointing flowers were emailed to Dalström. It turns out they never fully open, but that characteristic in itself gave away the species' identity. *Biermannia jainiana* S.N.Hegde & A.N.Rao (1985) was previously only known from the Arunachal Pradesh State of India and never reported from Bhutan. This discovery happens to be the second *Biermannia* ever reported from that country, although the first one is only represented by low-resolution photos and no preserved specimen seems to have been made. Based on the photographs, however, it appears to be *Biermannia arunachalensis* A.N.Rao (2006). A renewed effort is needed to properly document this latter species for the orchid flora of Bhutan.

The cultivation of *Biermannia* species should probably be best under



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STIG DALSTRÖM



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TANDIN WANGCHUK



TANDIN WANGCHUK

[3] The excited orchid team from Nganglam and NBC examines the first plants of *Biermannia jainiana* ever documented from Bhutan. Close-up (inset) of the plant growing on a rotten stump along the river near Nganglam, Bhutan.

[4] Orchid data, such as measuring the seed capsule, is collected by Kezang Rinzin and logged for the Divisional Forest Office of Pemagatshel. Inset: the first flowers of *Biermannia jainiana* ever photographed in Bhutan.

[5] While excitedly waiting for the flowers to fully open, they disappointingly turned old, changed color and began to wither.

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phalaenopsis conditions. A semi-shady, rather warm and humid environment with plenty of water and some plant food during the growing season (May to October), and reduced watering and cooler conditions during the resting season (November to end of April).

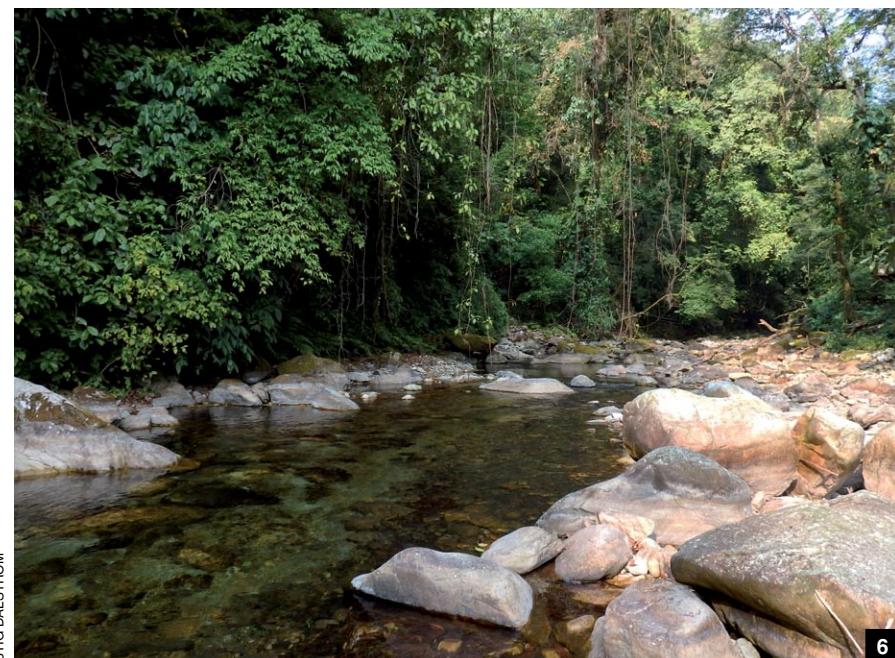
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- [6] In the Paradise-like habitat of the undisturbed tropical forests of Bhutan there are many new species yet to be discovered.  
[7] *Vanda bicolor* Griff. was for a long time considered to be endemic to Bhutan, but recently plants have been observed in the bordering Assam state of India.  
[8] *Vanda ampullacea* (Roxb.) L.M.Gardiner is a warm-loving species that prefers bright and exposed conditions in the narrow strip of lowlands in Bhutan.  
[9] Perhaps the most impressive species growing along the river near Nganglam is *Arachnis (Esmeralda) cathcartii* (Lindl.) J.J.Sm.