

# An Introduction to Native Orchids of Myanmar in the Hkakaborazi Area

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## Introduction

Myanmar is geographically located in south-east Asia between 9° 58' and 28° 31' north latitude and 92° 9' and 101° 1' east longitude. From north to south it stretches 2,092 km and the farthest distance from east to west is about 917 km.

In Myanmar, the mountain ranges stretch and the rivers flow from the north to the south. The prime rivers of Myanmar are the Ayeyarwaddy, the Chindwin, the Sittaung, and the Thanlwin. The Ayeyarwaddy is the longest and most navigable river in the country and hence the best for commerce and communication. It is formed from the confluence of the Maikha and Malikha rivers, which flow from the Hkakaborazi mountain ranges in the northern part of Myanmar.

The Ayeyarwaddy River flows down through central Myanmar touching all the important points and towns and, through the centuries, it has formed the very fertile delta region from whence it flows through many tributaries into the sea.

Myanmar is composed of seven states and seven divisions. There are distinct mountain ranges, some, in Kachin State, of an altitude of over 3,048m. Other ranges are in Chin State, Shan State, and Tanintharyi Division. The Middle Yoma Range runs from north to south in central Myanmar. The Shwe Dagon Pagoda, one of the 'Wonders of the World', has stood at the end of the Middle Yoma Range for over 2,500 years. All these mountain ranges are covered with primary forests where many native orchids of Myanmar exist. Myanmar measures 677,103 sq.km. From 1998 statistics the area covered by forest was 344,031 sq.km which is 50.85% of the total land area.

The area covered by different forest types (due to different geographical conditions) are

“through the centuries, it has formed the very fertile delta region from whence it flows through many tributaries into the sea”

- Mangrove forests – 13,761 sq.km
- Evergreen forests — 55,046 sq.km
- Deciduous forests — 134,172 sq.km
- Dry forests — 34,404 sq.km
- Scrub forests – 17,201 sq.km
- High mountain and sub-tropical forests — 89,447 sq.km

## Nature and Wildlife Conservation in Myanmar

In Myanmar, as of October 1998, the existing protected areas covered 13,691 sq.km, which is 2% of the country's total land area. The government's forest policy aims to expand the protected area up to 5% of the total land area. Currently the protected areas comprise 4 national parks, 19 wildlife sanctuaries, 1 elephant range, 2 mountain parks and 2 newly declared protected areas for conservation work by the Forest Department.

Since 1981, implementation of the Nature Conservation and National Park Project has been taking place with the cooperation of the United Nations Development Programme and the Food and Agriculture Organization. Some international non-government organisations have also assisted.

The numbers of species in Myanmar recorded by the Forest Department are

- Mammal species — 300
- Bird species — 1,000
- Reptile species — 360
- Tree species — 1,347
- Shrub species — 741
- Herb species — 1,696
- Bamboo species — 96
- Rattan species — 36
- Orchid species — 841

### Hkakaborazi National Park

A map of Hkakaborazi National Park is shown in Appendix 1.

### Expeditions in Hkakaborazi Area

Because this area has rich biodiversity, it is of interest to scientists from Myanmar and other countries too. Forest Department records show the following scientific teams to have studied this area.

	<b>Subject of study</b>
William Bee	1906 Pheasants
F.K. Ward	1920 Orchids and other plants
Farrer	1926 Rhododendrons
Lord Cranbrook	1931 Goral
Vernay Cutting Expedition	1935 Barking deer and shrews
Yein Nwe Par Team	1955 Chinese-Myanmar border area
Oliver Milton	1959 Wildlife and protected areas
Myanmar Medical Research Team	1962 Nutrition of the Taron Tribe
Kyaw Soe and team	1981 Medicinal plants
Alan R. Rabinowitz and U. Saw Tun Khiang	1996 Mammals in Putao Township
Myanmar Japanese Mountaineering Team	1994 The Joint Friendship Expedition to Mount 1996 Hkakaborazi
Biological Expedition Team	1997 Biology in the Hkakaborazi area
Biological Expedition Team	1998 Biology in Naung Mung Township

“the Hkakaborazi expedition took place in 1997”

The 1997 and 1998 biological expeditions, jointly co-sponsored by the Forest Department of Myanmar and the Wildlife Conservation Society (WCS) of the USA, undertook the task of surveying the flora and fauna of this region.

The Hkakaborazi expedition took place in 1997 between 2 March and 13 April and covered about 290 km. During the expedition, Tong camp, a three-night journey away from Myanmar's northernmost village of Tahandam, and Guba Village from where there is access to India, were reached and studied. With 14 people taking part it was the largest expedition to this region to date. Deputy Director U. Khin Maung Zaw of the Nature and Wildlife Conservation Division of the Forest Department led the Botanical Study Group and U. Saw Lwin of Myanmar Floriculturists' Association and Assistant Lecturer U. Myo Khin of Yangon University took part as members.

The aims of the Hkakaborazi expedition were

“with 14 people taking part it was the largest expedition to this region to date”

- to find unrecorded and rare fauna and flora and incorporate them into Myanmar conservation law so that they may be protected;
- to support the development of Hkakaborazi National Park;
- to participate in activities of NGOs, universities and other institutions as well as those of the expedition, and to promote the park's nature conservation programme among the public.

The botanists collected orchids, ferns, gymnosperms, microorganisms, and ethnobotanical plants; 469 plant species were collected. At the time of writing, 233 species had been recorded and the remainder were still under observation. Forest types were also observed.

The second expedition, in the Naung Mung area (a buffer zone of Hkakaborazi National Park), was a follow-up to the first expedition. The expedition took place in 1998 from 24 April to 17 May

The aims of the expedition were

- to observe and record the rare little leaf Muntjac; the Naung Mung area is the only place in the world that it is found;
- to record the rare orchid species growing in the dense forests of this area; and
- to observe and record the birds and the forests of this area.

“the botanists collected orchids, ferns, gymnosperms, microorganisms, and ethnobotanical plants”

From these expeditions the zoological team, led by Alan R. Rabinowitz from WCS, discovered the new species of little leaf Muntjac, *Muntiacus putaoensis*.

The survey routes of the Hkakaborazi and Naung Mung expeditions are shown in Appendix 2.

## The Rare Orchids of Myanmar

World orchidologists and orchid hunters have been interested in and recording Myanmar's orchid species since the nineteenth century. Among these researchers, Reverend Parish, Dr Helfer, Dr Griffith, Sir William Hooker and Professor H.B. Reichenbach have carried out much research and written about their findings. In 1895, Captain Bartle Grant compiled all the papers about Myanmar orchids written by various writers and published a book called 'Orchids of Burma'. Starting in 1914, the well-known botanist and naturalist F.K. Ward conducted several floristic surveys in Kachin State. He discovered many new orchid species in the northernmost part of Myanmar. In 1920, he discovered a new species of ground orchid in the Naung Mung area. Later, that orchid was botanically named *Paphiopedilum wardii* in honour of him. Local natives call this orchid, 'the black orchid' because of the dark maroon colour of its flowers. The Naung Mung area is the only place in the world where the black orchid is found.

During the expeditions, the botanists climbed up to about 1,219m in the mountains that provide the habitat for the black orchid; they took photographs and collected some sample plants as well. The black orchid grows well in the leaf humus on the rock ridges as well as under the small bushes in low light conditions and it was learned from local people that it blooms from December to February. Most of the black orchids collected were nurtured successfully in the Pyin-Oo-Lwin Research Nursery, which is located 914 masl. Here the weather is cool and mild and very similar to that which occurs where the black orchid grows naturally. Nearly all the plants flowered in January-February 1998. Other interesting and rare Myanmar orchid species were also collected and nurtured in Pyin-Oo-Lwin.

Terrestrial orchids were also observed growing at about 2,133m; at this height large trees are rarely seen.

On the first expedition, due to heavy rain, time restrictions and the period in which the expedition took place (off season), not as many orchid species as expected were collected. However the habitat of *Paphiopedilum wardii* was studied extensively and recorded, and *Cymbidium eburneum*, native to Myanmar, was recorded for the first time. Seventeen orchid species were recorded in this expedition.

On the Nuang Mung expedition, the botanists collected and studied some 39 orchid species. The following orchids were of particular interest.

- The growing and propagation conditions of the endemic *Paphiopedilum wardii* were studied in detail.
- Although the orchids listed below had previously been recorded as growing in Myanmar, this was the first time they had been recorded as true natives.
  - *Bulbophyllum odoratissimum*
  - *Dendrobium brymerianum*
  - *Dendrobium stuposum*
  - *Phalaenopsis parishii*
  - *Dendrobium transparens*
- The following orchids were recorded for the first time (they are native to Myanmar).
  - *Platystele* spp. (orchid)
  - *Epipogium roseum*

“the blue sheep, the black barking deer and the little leaf Muntjac were discovered”

- *Microspera rostrata*
- *Pholidota chinensis*

Many orchid fruits containing seeds were also collected and grown in the laboratory for further examination. Some rare and endangered orchid species that had been collected were propagated in the laboratory using tissue culture techniques. Promising results were obtained. The Myanmar orchids recorded in the two expeditions are shown in Appendices 3 and 4.

## Discussion and Recommendations for Future Research

- On the Hkakaborazi expedition, as a result of collective endeavour, the blue sheep, the black barking deer and the little leaf Muntjac were discovered. In addition, the team took the opportunity to observe the rapid development of a national park from a protected area.
- On the second expedition, the little leaf Muntjac and rare orchids and birds were observed. In addition to examining the existing condition of Hkakaborazi National Park, an assessment was made of the conservation measures required for the park.
- Some Myanmar orchid species, including *Vanda caerulea*, *Dendrobium cruentum*, *Renantheraim shootiana*, and all *Paphiopedilum* sp. are listed in Appendix 1 of ‘The Convention on International Trade in Endangered Species of Wild Flora and Fauna as World Endangered Orchid Species’ (CITES).
- It was learned that about five years previously some traders from China came and purchased *Cymbidium* orchids in the Hkakaborazi area. However the expeditions found no evidence of the collection and sale of orchids on a large scale. It was noticed that small numbers of black orchids, having been collected by local people, were being sold in the Naung Mung market place and being given to visitors as mementoes. Considering the long-term interests of this rare orchid, the local people should be given an educational talk on orchids asking for their cooperation in its conservation.
- The season in which the expeditions took place was not the flowering season. If it had been, more orchid species would have been collected.
- The expeditions established that there is an abundance of naturally occurring orchid species in the Hkakaborazi area. It is necessary to monitor the growth, propagation and estimated numbers of these species. Orchid expedition(s) could take place separately or with other expeditions. Through the joint endeavours of internal and external scientists, we could exchange practical experiences and the internal scientists could acquire knowledge on orchids of an international standard.
- Hkakaborazi National Park has great potential to be upgraded from a National Park to a World Heritage Site.
- An education centre should be established in Hkakaborazi National Park, with an exhibition for the public providing information about

“the expeditions found no evidence of the collection and sale of orchids on a large scale”

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orchids of the area. A model orchid garden with the orchid species of Hkakaborazi area could also be made.

- Because there are evergreen rainforests, mountains over 3,048m, and sub-tropical forests in Hkakaborazi, there is a wide variety of orchids to be studied. As well as botanical and orchid expeditions, educational tours could also be organised in the area.
- There might be new and unrecorded orchid species still waiting to be discovered in Hkakaborazi National Park. It is recommended that a cooperative expedition and research programme, involving local scientists and knowledgeable scientists from abroad, be organised in the area to search for any rare, undiscovered Myanmar orchids.

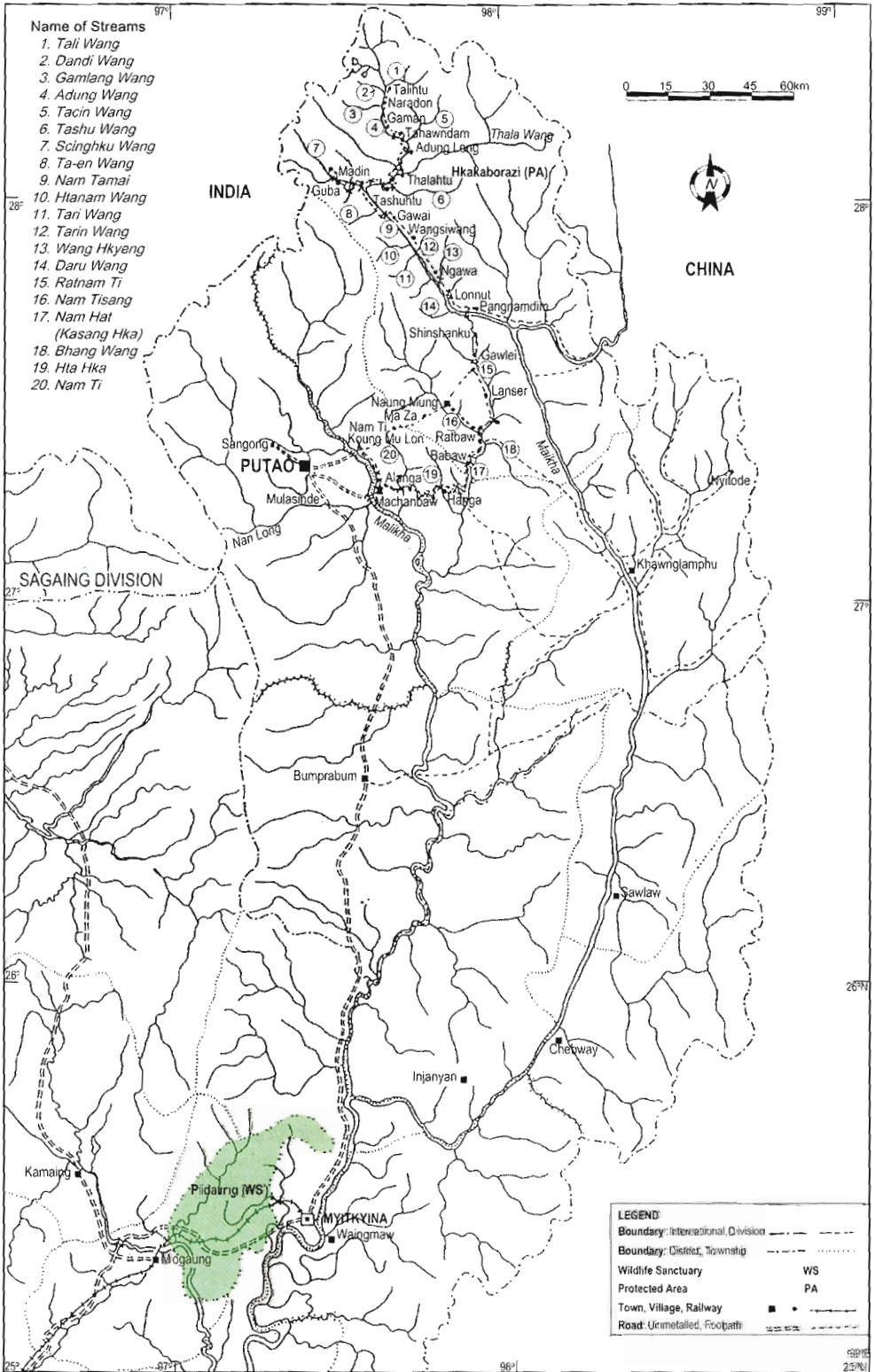
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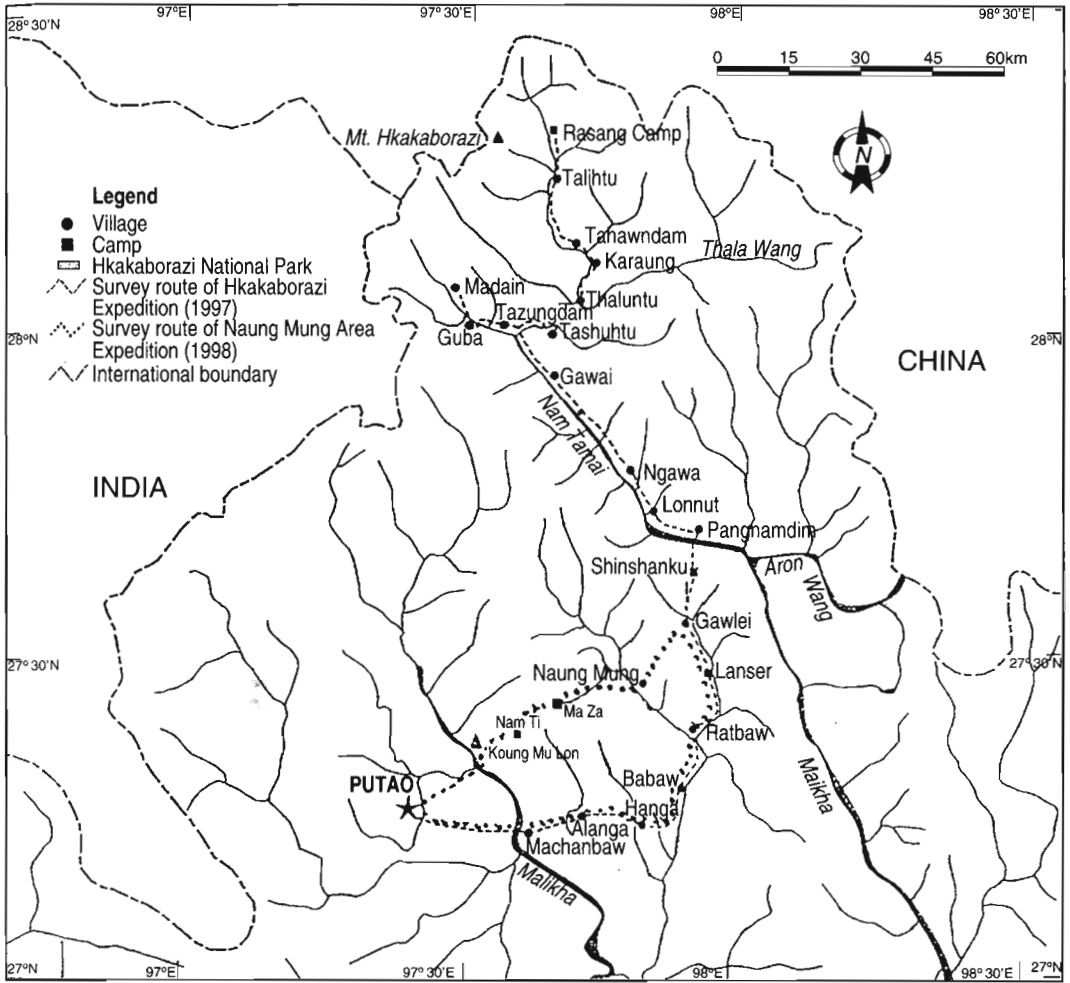
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# Appendix 1: A Map of Hkakaborazi National Park



Appendix 2: The Survey Routes of the Hkakaborazi and Naung Mung





Appendix 3: **Orchids Recorded on the Hkakaborazi Expedition (1997)**

<b>Sr. No.</b>	<b>Scientific Name</b>	<b>Common Name</b>
1	<i>Aerides falcata</i>	Sar-ka-lay-phyu
2	<i>Anoectochilus</i> spp.	Jewel orchid
3	<i>Arundina graminifolia</i>	Bamboo orchid
4	<i>Bulbophyllum odoratissimum</i>	Thazin pan
5	<i>Cymbidium aloifolium</i>	Thit-tet-lin-nay
6	<i>Cymbidium eburneum</i>	Pan-thet-shay-phyu
7	<i>Cymbidium lowianum</i>	Pan-thet-shay
8	<i>Cirrhopetalum</i> spp.	Thazin-yat-taung-thit-khwa
9	<i>Coelogyne</i> spp.	Ngwe-hnin-phyu
10	<i>Dendrobium hercoglossum</i>	-
11	<i>Dendrobium pulchellum</i>	Sin-ma-myet-kwan
12	<i>Dendrobium thyrsiflorum</i>	Ta-khaing-lone ngwe
13	<i>Eria pannea</i>	Nat-tha-mee pan
14	<i>Oberonia</i> spp.	Wyat-hla thit-khwa
15	<i>Paphiopedilum wardii</i>	Black orchid (or) khon mya hlaing
16	<i>Phaius tankervilleae</i>	Zay-ti thit khwa
17	<i>Pleione</i> spp.	Phar-la-thet thit khwa

Appendix 4: **Orchids Recorded on the Naung Mung Area Expedition (1998)**

<b>Sr. No.</b>	<b>Scientific Name</b>	<b>Common Name</b>
1	<i>Aerides falcatum</i>	Sar-ka-lay-phyu
2	<i>Anoechtochilus</i> spp.	Jewel orchid
3	<i>Acampe longifolia</i>	Mee-ma-long-pan
4	<i>Bulbophyllum odoratissimum</i>	Thazin pan
5	<i>Bulbophyllum</i> spp.	Thazin pan
6	<i>Cymbidium insigne</i>	Pan-thet-shay-phyu
7	<i>Cymbidium gigantea</i>	Pan-thet-shay-nyo
8	<i>Cymbidium aloifolium</i>	Thit-tet-lin-nay
9	<i>Cirrhopetalum</i> spp.	Thazin-yat-taung-thit-khwa
10	<i>Coelogyne hutteriana</i>	Ngwe-hnin-phyu
11	<i>Dendrobium aduncum</i>	-
12	<i>Dendrobium brymerianum</i>	Shwe-ka-nate
13	<i>Dendrobium densiflorum</i>	Ta-khaing-lone shwe
14	<i>Dendrobium nobile</i>	Dawn-mhee-thit-khwa
15	<i>Dendrobium stuposum</i>	-
16	<i>Dendrobium thyrsoiflorum</i>	Ta-khaing-lone-ngwe
17	<i>Dendrobium transparens</i>	-
18	<i>Eria pulchella</i>	Nat-tha-mee pan
19	<i>Eria pannea</i>	Nat-tha-mee pan
20	<i>Eria</i> spp.	Nat-tha-mee pan
21	<i>Epipogium roseum</i>	-
22	<i>Eulophia</i> spp.	Ga-mone-thazin
23	<i>Goodyera</i> spp.	-
24	<i>Habenaria</i> spp.	Myet-thazin
25	<i>Micropera rostrata</i>	-
26	<i>Oberonia</i> spp.	Wyat-hlathit-khwa
27	<i>Paphiopedilum wardii</i>	Black orchid (or) khon mya hlaing
28	<i>Phalaenopsis parishii</i>	Barani thit khwa
29	<i>Phaius tankervilleae</i>	Zay-ti thit khwa
30	<i>Phaius flavus</i>	Nay-myo-nwe thit khwa
31	<i>Pholidota chinensis</i>	Kwat-mhee-thit-khwa
32	<i>Pholidota</i> spp.	Kwat-mhee-thit-khwa
33	<i>Pleione maculata</i>	Phar-la-thet-thit khwa
34	<i>Pleione</i> spp.	Phar-la-thet-thit khwa
35	<i>Rhynchostylis retusa</i>	Kyaung-mee-too
36	<i>Sarcanthus</i> spp.	-
37	<i>Thunia marshalliana</i>	Stone orchid
38	<i>Thrixspermum</i> spp.	-