

Report on fieldwork collecting bamboos in Thailand, October-November 1997

SOEJATMI DRANSFIELD*

INTRODUCTION

The purpose of this fieldwork was to collect complete herbarium specimens and to study the living plants of bamboo species found in the northwest and northeast of Thailand. In 1996 similar fieldwork was conducted in the Peninsula (south) which has a different bamboo flora from that in other parts of the country. It was hoped that this recent collection would help to clarify some taxonomic problems in working on the bamboo account for Flora of Thailand.

It is known that the flora in the northwest of Thailand has some elements in common with Myanmar and Yunnan (south China), and it has been recorded that many bamboo species from both regions can be found in northern Thailand. Floristic composition of the northeast regions is more or less similar to that of Vietnam or Laos, and bamboo species found in the latter also occur in this part of Thailand. As the earlier publications on the flora are based mainly on collections from Myanmar and from Vietnam and Laos, many botanical names of bamboos found in Thailand are adopted from these earlier publications. This practice has often caused problems.

ITINERARY

Three days in Bangkok; five days in Chiang Mai and Mae Hong Son; eleven days in the east and northeast. I had to return to UK four days early, because of eye problems.

The staff who accompanied me were: in the northwest region: Mr. Paisan Thongsorn, Mr. Chalerm, Mr. Puan (Queen Sirikit Botanic Garden, Chiang Mai); in the northeastern areas: Mr. Thanongsak Jonganurak, Phachok Puudjaa, and the late Sommai (Forest Herbarium or BKF, Royal Forest Department, Bangkok).

* Herbarium, Royal Botanic Gardens, Kew, Richmonds, Surrey TW9 3AB

RESULTS

We collected about 50 numbers of herbarium specimens, of about 25 species. We also collected leaf samples in silica gel for DNA analysis. While I was in BKF, I examined bamboo collections in the Herbarium, and found a sheet of flowering branches collected from Pangnga in 1966. This specimen matches a sterile specimen I collected in 1996 from a limestone hill north of Krabi. At that time I thought it was *Dendrocalamus elegans*, a species native on limestone hills in northern part of Peninsular Malaysia. It is in fact different from the latter. Its inflorescence appears to consist of one spikelet; in *D. elegans* the inflorescence consists of many spikelets, arranged in a fascicle or crowded at each node of flowering branches. I think the Krabi bamboo is a new species but I do not yet know to which genus it belongs. BKF specimen is being sent to Kew on loan for study.

North region Chiang Mai and Mae Hong Son

Some native bamboos can be found growing wild in the compound of the Queen Sirikit Botanic Garden, Chiang Mai. They are *Bambusa tulda*, *Cephalostachyum pergracile*, *Gigantochloa albociliata*, *Dendrocalamus strictus*. These species are medium size bamboos, which are also found in Myanmar. Large or giant bamboos are mainly found growing in the region along the border with Myanmar.

"Pai-sang" *Dendrocalamus* cf. *membranaceus*, can be seen growing over the hills along the road on the way from Chiang Mai to Sop Pong, west of Pai. A lot of dead clumps (presumably after flowering) can be seen on hills along the road, but the majority are still green bearing young shoots and young culms. This species is also common on hills along the road towards Mae Sariang. It is absent in dipterocarp forest in this region. Young shoots are tinged with orange and covered with black hairs; blades of culm-leaves are long, more or less broadly lanceolate and deflexed.

"Pai-hok" or *Dendrocalamus hamiltonii*, one of the large bamboos, can be seen growing over the hills around Mae Hong Son. It is also found in Myanmar. Young culms and shoots are covered with white wax and pale hairs, and can easily be recognised on slopes of the hills. Culms are 20–25 m tall with a diameter of 15–20 cm, the internodes about 20–30 cm in the lower part, 40–50 cm in the upper part; lower nodes bear aerial roots. Young internodes are covered with short light brown hairs. Blades of culm-leaves are ovate-lanceolate, tinged with dark purple, erect. This species is also planted here and there around Chiang Mai.

Other common species are *Bambusa tulda* ("Pai-bong") and *Cephalostachyum pergracile* ("Pai-khao-lam"), found in the lower elevation. *B. tulda* is distributed from Bangladesh to Central region of Thailand; *C. pergracile* can be found from Bangladesh through central Thailand to Vietnam.

There are several clumps of a bamboo called "Pai-hia" by local people. I identified it as *Neohouzeoua dulloa*, a species first described from Bangladesh. Lin (1968) identified "Pai-hia" as *Cephalostachyum virgatum*. Since the any bamboo called "Pai-hia" has been cited as *C. virgatum*. *N. dulloa* is quite different from *C. virgatum*, and the

subject will be presented in the account. In the past I relied on local names for Thai bamboos, because I believed they were reliable. During and after this trip I have been more careful in dealing with local names.

Northeast region

The main purpose to explore these areas was to observe small woody bamboos called "Pek" (*Arundinaria/Vietnamosasa pusilla*) and "Chote" (*A./V. ciliata*). Before I did my fieldwork in 1996, I was told that these bamboos are the same species, "Pek" is smaller than "Chote". The herbarium specimens deposited at Kew are not complete, and do not show significantly the similarities or differences of these two bamboos. *A. pusilla* and *A. ciliata* were first described from Vietnam, and in 1990 were transferred to a new genus *Vietnamosasa* Nguyen. In 1996 I visited two places in Korat Plateau, one is area, east of Khao Yai National Park where "Chote" grows in open ground, and the other is Sakaerat Environmental Research Centre where "Pek" grows as undergrowth in dry dipterocarp forest. I still could not find or observe major difference, except that they are different in size. During my 1997 trip we managed to visit several national parks where these two bamboos grow; both bamboos were observe and collected (young shoots, leafy branches, rhizomes, flowers, culm-leaves, culms). It is hoped that by examining recent and previous collections the problem will be clarified. A paper on the subject is being prepared, and it is hoped to be submitted for publication to Thai Forest Bulletin.

"Pai-rai" is one of the most common bamboo species found in the central region. It was described as *Oxytenanthera albociliata*, and then was transferred to *Gigantochloa* by Kurz. It can be found everywhere in non-cultivated lands, even in dry river beds, on various types of soil. I was told that the young shoots of "Pai-rai" is one of the best bamboo shoots in Thailand. It was the end of the rainy season in the northeast when we made this trip, and I was surprised to find clumps of "Pai-rai" everywhere bearing young shoots sticking up over the clumps. Later I noticed that these shoots are in fact young branches of main young culms of which the apices were damaged or cut, and I realized that young apices of shoots emerging from the rhizome at the beginning of rainy season were collected for eating. These damaged young culms do not die, and the primary branch buds reiterate and develop as large as the main culm. Occasionally remnants of culm leaves (sheaths and blades) where "Pai-rai" grows. This bamboo can easily be recognised by the deflexed blades of culm-leaves and the prominent ligule of the culm-sheaths. When a culm is not can be seen piled up by the road side near damaged, it will grown to quite a considerable length and produces several secondary branches at each node, scrambling or leaning on nearby vegetation or trees. In this case, the primary branch buds usually remain dormant. "Pai-rai" produces flowers very frequently anywhere, and so that is why there are many herbarium collections of it. I believe the culms will die after flowering.

The genus *Neohouzeoua* was described by A. Camus 1922, containing two species, *N. mekongensis* and *N. dulloa*. In this trip I wanted to find *N. mekongensis* which I believed can be found anywhere along the Mekong River. The type consists of a leafy and a flowering branch, other collections which match the type bear culm-leaves. Culm-

sheaths have a deep depression in the apex, and stramineous margins, the blade is lanceolate and deflexed. I think we found this bamboo in Phu Ruea National Park. It grows abundantly, almost in pure stand, on the north slopes of the highest point (800 m), facing Hung River, a river which joins the Mekong River about 100 km to the east. While we were in Loei, I wanted to find a bamboo collected by Kerr in 1924 from a lime stone hill near Chiang Khan, where local people used the inner layer of the culm of this bamboo for wrapping tobacco to make a cigarette. Unfortunately we did not find any lime stone hills near Chiang Khan or this bamboo.

Phu Ruea National Park has many bamboo species, we found some clumps of *B. tulda* and *C. pergracile* bearing flowers, *G. albociliata* in abundance; "Chote" is common, but "Pek" is not so. There is another bamboo called "Chote" by local people; it differs from the true "Chote" in having culm-sheaths covered with brown hairs. *C. pergracile* can be seen dominating the hills west of Phu Ruea National Park but less commonly along the way to Petchabun. Here, "Pai-sang", *D. cf. membranaceous*, can be seen abundantly over the hills.

Nam Nao National Park is a very interesting area full of bamboo species. In the western part, large bamboo species, such as *D. hamiltonii* and *B. tulda*, are very common growing in the forest together with *C. peracile* and *G. albociliata*. In the central and drier part, or the flat higher areas, "Chote" and "Pek" can be found commonly. Unfortunately we could not spend long enough to explore the Park and surrounding areas. It seems to me that this region is a meeting point of the bamboo flora from the western, wetter region, and that from the eastern, drier areas.

CONCLUSIONS

Before I visited the northeastern regions, I always believed that bamboo flora in this part of the country was less interesting and poorer than that of the western region. This was suggested by the few collections of bamboos from the region in various herbaria (especially at Kew). The reason is probably that the region is much cultivated, and there is very little forest left except in the national parks, and thus exploration has not been a priority. It is clear from this trip that the bamboo flora here is as interesting as that of the other parts of the country. It is hoped that, based on previous and recent collections, better knowledge and understanding of Thai bamboos will be gained. In this trip we did not collect widely distributed species, such as *Bambusa arundiancea*, *B. blumeana*, *B. vulgaris*.

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