Rediscovery of *Trachycarpus martianus* in the Sikkim Himalaya

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1. *Trachycarpus martianus* growing in front of workers' quarter at Temi Tea Garden, South Sikkim.

The largely Himalayan genus of solitary fan palms, *Trachycarpus*, has always attracted plant lovers and nurserymen throughout the world, due mostly to its cold hardiness. During the time of the British Raj the genus was not fully understood in India, and only one (Brandis 1874, 1906), two (Griffith 1850; Gamble 1881; Beccari & Hooker 1894) or three (Blatter 1926) species were recognized from the Indian region, first in the genus *Chamaerops* and later separated off into the genus *Trachycarpus*. In his thorough study of Asiatic palms, Beccari (1931) provided taxonomy and distribution details of the genus as it was then known, and Martin Gibbons and Tobias Spanner (1998a) published an up-to-date version in 1998.

At present, the number of species in the Indian Himalaya is five, including the extensively cultivated and now naturalized Chusan fan palm, *T. fortunei*. All of these species have a more or less restricted distribution; for example *T. takil* and *T. latisectus* are endemic to small areas of the Kumaon and Darjeeling Himalayas respectively. *Trachycarpus martianus* is reported from small areas of Nepal and the Khasia Hills (Gibbons 2003). The palm growing in tiny areas in Manipur and on the Naga Hills, introduced into cultivation variously as *Trachycarpus* sp. 'Manipur' or 'Naga Hills' (Kembrey 2004) and more recently described as *T. ukhrulensis* Lorek and Pradhan (Lorek 2004; Lorek & Pradhan 2006), has now been identified as the Thai mountain palm, *T. oreophilus* (Gibbons & Spanner 2009).

The Sikkim and Darjeeling Himalayas are the most extensively explored areas in the Indian Himalayan region. The *Trachycarpus* palms of this area at least have been well documented (Gamble 1881, Cowan & Cowan 1929, Beccari & Hooker 1894, Beccari 1931). Recently *T. latisectus,* a very beautiful species with marked taxonomic characteristics, was discovered here (Gibbons & Spanner 1998b; Spanner et al. 1997), and the old records of *T. martianus* from British Sikkim (i.e., present Sikkim State of India and the Darjeeling district of West Bengal) relate to this same species. On the other hand, Lorek (2007) reduced all the species with oval seeds growing in this Indian region to subspecies of *T. martianus,* and he named them as Khasyi form (subsp. *khasianus*), Nepal form (subsp. *martianus*) and Rissoom form (subsp. *latisectus*) according to the place of occurrence. He stated that "The locality in Sikkim [Rungbong] which was mentioned by Beccari (based on Indian classical taxonomic literature) has not been rediscovered up to now." He added, "Currently, it is not clear whether the 'Rissoom form' (= ssp. *latisectus)* has its origin at Rungbong or not. Maybe relocating the Rungbong locality could throw more light on this question." Perhaps Rissom and Rungbong are two different places. The need to establish this becomes essential to sorting out what is going on with the taxonomy and distribution of the ovoid-fruited species of *Trachycarpus*.

During the plant survey of the South District of Sikkim in 2008, the author came across five cultivated plants of a *Trachycarpus* palm in front of workers' quarters at Temi tea gardens (Fig. 1). They have denticulate petioles (Fig. 2) and bear white woolly hairs in the younger stage. They were without fruits. At first sight they looked quite different from either of the other palms growing in this part of the Himalaya, i.e., the commonly cultivated *T. fortunei* and the recently discovered *T. latisectus*. On the basis of the denticulate petiole and the general appearance, I presumed them to be *T. martianus*, but they could also possibly be members of the other group of *Trachycarpus* with reniform seeds, i.e., *T. oreophilus* or something closely related.

Intriguingly a local guide explained where these palms had come from and described a

2. *Trachycarpus martianus* showing denticulate petioles.

local population. I was determined to visit the place without delay. The next morning he and I left the Tandong Biodiversity Park at first light. We crossed the road that runs between Damthang and the Temi Tea Garden and that leads ultimately up to Gangtok, the capital city of Sikkim State. We climbed up about one and a half kilometers inside the forest and found ourselves on a narrow, gravelly and calm road between dense forest of large *Cupressus torulosa* other native broad leaved trees and dense patches of thicket fern, *Gleichenia gigantea*. At one point we left the road and followed a narrow path up into the forest. After a walk of 6 or 7 km, at 2000 m, we reached a clearing and enjoyed the beauty of a bright and sunny day and then climbed up the final 50 m to the summit. A beautiful landscape was waiting for us: the rays of the morning sun lit up the Teesta river and its wide valley a few kilometers to the east. We could see Rungpo, the gateway of Sikkim, at the confluence of the Teesta and Reshi Rivers, and in the southeast, the ridges of Kalimpong and other areas of Darjeeling formed the horizon. Just below us we could see our destination, the village of Rungbing, the very same Rungbong where C.B. Clarke collected *Trachycarpus* specimens more than a hundred years ago (Beccari 1931).

Presently we were on one of the historical routes between the Teesta valley and the Great Rangit valley, which were well connected with Darjeeling during the British time, before the development of motor roads in modern Sikkim. These days this route is almost abandoned and rarely used even by the villagers. After a short walk we left the road and started descending on a slanting connecting path, which was partly blocked with dense bushes and occasional big trees. After an easy 2 km walk down we entered the village. The locals there were very surprised to see us at this early hour, and assuming me to be a forest officer, half expected a raid. Fortunately we were able to reassure them of our good intentions. My colleague Krishna asked the people about *Pankha* or *Purbang* (vernacular names for the fan palm in the local Nepalese dialect), but we received largely negative answers.

We next made our way to where Krishna remembered having seen a large fan palm some ten or fifteen years ago. This magnificent palm, still there, is about 10 or 11 m tall, growing at the top of a steep, rocky bank and was heavy with seeds. It was overgrown with bushes and subtropical and temperate trees including *Castanopsis indica, Quercus lamellosa, Ficus cordifolia, F. neriifolia, F. hirta, Saurauia napaulensis, Erythrina arborescens, Engelhardtia spicata, Exbucklandia populnea, Macaranga denticulata, Echinocarpus dasycarpus* and *Alnus nepalensis*. Furthermore, the base of the trunk was completely hidden by steep rocks. In between bushes and under the large trees, 4 or 5 more, smaller palms were growing nearby. All had dry inflorescences.

Seed collection was very difficult due to the height of the big palm and the rocky terrain; a small slip could result in a fall of 60 meters. We considered carefully the easiest and safest

3. Seeds badly infected by insect larva.

way of collecting fruits. Krishna produced a sickle from his bag, and fixed it to a long bamboo cane using rope he made from grass. In the meantime the lady from a nearby house gave us valuable information about a wild population. She guided us along a suitable path, and after some effort we were at the base of a fruiting palm. Using the prepared sickle, we cut a small fruiting branch leaving the rest there because they were still not mature. We also cut a leaf from nearby smaller plant, and it, together with the round oval seeds, which were badly infected by insects (Fig. 3), allowed us to identify it as *T. martianus*, a palm that has not been seen in the wild in Sikkim for over 100 years!

We left the area and climbed upwards along a small footpath along the ridge in search of more plants. After ascending half a kilometer or so, we left the main footpath and started descending into the forest. After a descent of a kilometer in deep, southeast-facing forest, we began to follow a water supply pipe between shrubs and trees, continuing down between thorny bushes, prickly climbers and large trees, clearing a passage with the help of the sickle. Monkeys began jumping from one tree to another upon seeing these unexpected visitors. In a deep gully, between big trees, we found two fully grown palms. With great effort we reached them to try to take pictures, but no suitable angle was found due to the dense canopy. Alas there was no sign of fruits, seedlings or juveniles in the vicinity.

We decided to cross the small stream to check out the warmer and more exposed side of the gully. When we were about to cross it at 27°11′57.9″N; 88°25′28.0″E at 1680 m, we noticed three big trees of about 7 or 8 m tall growing some 30 m above us (Fig. 4), but they were also without fruits. Now we were confident that we were in the right place where the local guide had originally found the palms. We again found a small descending footpath perhaps used to visit the water tank, and we followed it for about one kilometer or so. Along the path and nearby we found up to a hundred different sized palms (Fig. 5), taking many pictures at 27°11′57.7″ N; 88°25′31.4″E. Many palms had died due to age, but some stumps were still remaining (Fig. 6). There seems to be no human interference with the palms, but even so we saw no seeds or seedlings. Monkeys are common in the forest, so we concluded that the fruits are taken by monkeys before they are ripe.

4. *Trachycarpus martianus* in its natural habitat at 27°11′59.9″N; 88°25′28.0″E.

Around 3 p.m., we left the area seeing many more individuals of *Trachycarpus martianus* growing below us on the southeast-facing slopes. We left with great satisfaction, returning to base via the old classical route running parallel to the top of Rangbing village. Since our visit, more cultivated palms have been reported from Sadam and other nearby villages in South Sikkim. These have all been collected from the nearby forests.

Gamble and Clarke found *Trachycarpus* palms in this area (Beccari 1931), however Brandis (1874) clearly stated that "No *Chamaerops* [*Trachycarpus*] has yet been reported from Sikkim," and in his later publication (Brandis 1906) does not record any *Trachycarpus* from Sikkim. Recently, during my visit to the Central National Herbarium in Calcutta (CAL) in June–July 2010, I was unable to find the *Trachycarpus* collections of Gamble and Clarke from British Sikkim. The Indian Liaison Officer at RBG Kew was unable to trace the missing collections of Clarke and Gamble. Could it be that all the sheets collected by these renowned botanists from British Sikkim were sent to Beccari and are still lying in the Beccari's palm herbarium in Florence, Italy?

5. *Trachycarpus martianus* at 27°11′57.7″N; 88°25′31.4″E.

After analyzing Gamble's (1881) lines – "In Sikkim, I have only once found it, on the hills east of Teesta river" – I am convinced that Gamble's locality ("Rissom mountain near Dumsong beyond Darjeeling") is definitely the Kalimpong area where *T. latisectus* was described. On the other hand a young plant collected by Clarke from "Rungbong at about 1,200 m" is definitely from the lower elevations of present day Rungbing village near Damthang in the south district of Sikkim, where *T. martianus* still grows. Thus Rissom and Rungbong are two different places; the first is on the east side of the Teesta River in Kalimpong in Darjeeling District where *T. latisectus* occurs; the second is on the western flank of the river in present day South District of Sikkim where *T. martianus* grows. The second locality has remained hidden or forgotten for more than a century. In any event, the rediscovery of *Trachycarpus martianus* in its historical location after a period of more than 100 years is an exciting event, and one that will be welcomed by all enthusiasts of the genus.

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