

# TRACHYCARPUS

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# Editorial

• *Martin Gibbons, martin@palmssociety.org*

This is a special issue of *Chamaerops* in two ways. To begin with, it is a double issue, an attempt to bring the publication up to date after such a long delay. Second, for the first time ever, the magazine is devoted entirely to one genus, *Trachycarpus*. Don't worry, the name change is only temporary! Much of the information published here appears for the first time in *Chamaerops*. Much of it has appeared elsewhere, but this is the first time it has all been published together in the European Palm Society journal, and we hope that all members will appreciate the summary.

The *Trachycarpus* trail, which began with *T. takil* and ended, albeit temporarily, with *T. latisectus*, is a long and interesting one. The first step which was done by Wilko Karmelk of Holland and myself, was into the north of central India to try to shed light on a mystery that, it seemed, nobody else had exhibited much interest in solving. What was this odd palm, misnamed by the Americans for so long? Was there actually a real *T. takil* under all the misnaming? What was the connection between *T. takil* and *T. martianus*, the names seemingly used synonymously in the many publications that we consulted before setting off? Well that puzzle is well and truly solved though our friends in the States still insist on misnaming *T. wagnerianus* as *T. takil*, despite us taking every possible opportunity to explain the mistake to them. I am happy to say that we regularly import seed, and that the genuine *T. takil* is more and more widely available though regrettably, because of its close botanic relationship with *T. fortunei*, it is likely to inter-breed and its special characteristics will be lost.

The next species that beckoned was the diminutive *T. nanus* of China. It took two trips there to find it, but find it we did, Toby Spanner

and I. It too, seems to be in danger, this time from the many semi-wild goats that roam the area where it grows. They eat the inflorescences before the plants, only about 60 or 80cm tall at maturity, have a chance to set seed. *T. nanus* that are now growing in cultivation seem to perform poorly, grow very slowly, and scarcely offer the opportunity to save the species from extinction.

Soon after those travels Toby and I were to find the first of three new species of *Trachycarpus*. On perhaps the most exciting trip of all, we discovered what we would name *T. princeps* growing on steep cliff faces on the banks of the Salween River, almost at the point where China, Burma and Tibet meet, a bit of a political hot spot. An account of our first, abortive, effort to reach the area (deep in China's 'forbidden territory') was not even published in the official version reproduced here. How we found ourselves climbing a 3500m mountain range, dodging Chinese border guards and nearly getting ourselves arrested, before finally being sent packing, was a real adventure in itself. The trees, alas, seem doomed never to reach cultivation. The seed set is poor, the area almost impossible to reach.

Not so with *T. martianus*, ridiculously rare in cultivation, ridiculously common in the wild, like so many other palms. That situation is changing fast, with hundreds of thousands of seeds being traded every year and subsequent plants growing well and happily. We found two major populations, one in northeast India and the other in Nepal. Due to breathtakingly bad planning the latter produced another 'adventure' if it could be called such, with Toby and I walking for 20 hours in Nepal with scarcely a break. Almost dead with fatigue, we staggered back to

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# Trekking on the Trachycarpus Trail

• *Martin Gibbons, Ham Central Nursery, Ham Street, Ham, Richmond, Surrey, TW10 7HA,*

Wilko Karmelk of Holland and I had, independently, become interested in the *Trachycarpus* genus over a number of years. Finding we had this strong interest in common, we resolved to attempt to solve part of the puzzle, and to go in search of *T. takil*, and try and shine some light into this dark corner of the genus.

Late in 1990 I received through the post a number of photocopies, made by Wilko in the Amsterdam library. They were from a selection of old botanical publications: "The Gardeners Chronicle of 1886"; "Kew Bulletin" 1912; "Indian Trees" by Brandis 1906; "Flora of British India" by J.D.Hooker 1894, and others. They all mentioned *Trachycarpus* palms, calling them variously *Chamaerops excelsa*, *C. martianus*, *C.griffithii*, *C.fortunei*, *Trachycarpus martianus*, *T.takil*, etc. and they all alluded to an isolated population that grew in Northern India.

In our subsequent researches we never discovered who wrote the original description of the precise locality, but all the old books we read tended to quote the same words, "grows in great numbers, forming clumps and rows, on the Thakil Mountain in Eastern Kumaon, in the fork between the Sarju and Kali rivers, between 6,500 ft and 7,800 ft, where snow generally covers the ground from November to March....in damp shady glens.. chiefly on the north-west side."

On a trekking map we located the two rivers, in Kumaon Province, Uttar Pradesh, about 300 miles north-east of New Delhi, near a village called Pithoragarh. There, in the fork between them, was an unnamed mountain, with a height of 8166 feet above sea level. As there were no

others in the vicinity this had to be Mount Thakil. It was around this time that we learned that "thakil" is a Hindi word meaning "palm." The chance therefore of seeing "Palm Mountain" presented a very exciting prospect indeed.

We left London's Heathrow airport on October 14th for the flight to India, stopping en route at Prague, Czechoslovakia, and Kabul, Afghanistan. Due to fog and problems with the plane, we were delayed at the former for some 24 hours, but at least we had an opportunity to look round this recently emancipated city, which was very beautiful. Our original intention had been to spend a day sightseeing in New Delhi, but because of the lost time we were eager to be on our way. We arrived at 10pm at night, and at 6.30 the following morning we were on a slow moving, east-bound train.

Indian trains leave much to be desired and they are certainly not for the squeamish. Even in first-class, the seats are hard and uncomfortable; the compartments, which are open, get grossly overcrowded; and people in rags sleep anywhere on the floor, amongst the food refuse that the other passengers continually drop. At each station, beggars and food vendors get on board doing what beggars and food vendors do, leaving the train at the next station, and presumably getting the next train back.

The stops were frequent and interminable, the countryside flat, brown and drab. *Phoenix sylvestris* was frequently seen from the window, but even that lost its appeal after the first few hundred had been sighted. After 8 hours we arrived at Bareilly and had had enough. We left

the train hoping we didn't look too much like rich Americans abroad, and attempted to find a taxi to take us the rest of the way. In this we succeeded and found a mini-bus whose driver agreed to take us to Pithoragarh, some 9 hours drive away, for a mere 1000 rupees (£25/\$50). In London this would just about get you to Heathrow airport.

We left Bareilly at about 3pm. The landscape was continually flat and uninteresting until we reached a town called Tanakpur when it changed dramatically, and we began to climb. We had left the interminable Indian plains and were at last in the hills. As the landscape changed, so did the vegetation. Endless fields gave way to forests, and farms to wooded hillsides. We began to see the Deodar (*Cedrus deodara*) and the beautiful *Pinus longifolia*, and the air smelt cooler and fresher after the stifling heat of the plains. We saw rushing rivers and deep, deep gorges, and drove carefully round one hairpin bend after another, on a good, modern road.

It had been our plan to drive non-stop until we reached our destination, but at 10pm we came across a military night-time road block, and as there was no possibility of a hotel, we had no option but to sleep in the minibus with the driver and his mate. That night was not the most comfortable I have ever spent. In the small hours I woke to the sound of scavenging foxes and local stray dogs having a moonlit gangfight worthy of *West Side Story*.

Finally it was 6am. Ruefully missing our morning shower and hot breakfast, we set off through the now open road block, and arrived at Pithoragarh at about 9am. It is set in a wide, low valley, surrounded by mountain ranges and is a very attractive village. We located a small local hotel, which appeared to be staffed and run by two 9 year old boys, but none the less efficient for that. Soon we were ensconced in our rooms, simple but clean, with a glass of the local "chai" (a kind of hot, sweet, milky tea - delicious - and always served in a glass), and a bucket of hot water apiece ready for us to take a welcome and much

needed shower. A glance through the thick and ancient hotel register revealed not a single European name. The rate, incidentally, was £1.50/\$3 per night.

We knew from our trekking map that the mountain that we were looking for lay due south of the town, and from the flat roof of the hotel we had a good view of the range of which it formed a part, some 15 km distant. One peak, somewhat higher than the others, was obviously our goal, and although the locals knew it as "Thalkedar" rather than "Thakil," there could be no doubt as to its identity, or its allure, as we saw it there for the first time, dark and mysterious. The map indicated that there was a temple at its summit, and looking through binoculars, we could just make it out.

At this point of the trip we were lucky enough to make the acquaintance of a young lady, Miss Poonam Chaudhary, without whose help we would have had a much tougher time of things, and who rendered us great assistance. She was in Pithoragarh to investigate the possibilities of tourism in this remote and beautiful area, and with her contacts we were able to hire transport, guides, and porters to aid us in our quest. It must be said however that Poonam, along with everybody else with whom we spoke, was quite negative about our chances of finding palms on the mountain. Yes, everybody knew palms, and *Phoenix sylvestris* was not uncommon close to the town. But enquiries about fan palms, even when backed up with photographs of *Trachycarpus*, were always met with a polite but definite, 'they do not grow here.'

We spent the rest of that day, and the next, in and around the town. We were impatient to be on our way of course, but there were arrangements to be made and formalities to be attended to. We did make one excursion with some newly made friends to look at some *Phoenix* palms a few miles distant. One was a most attractive glaucous blue colour, but mainly they were just regular green (by now common-or-garden) *P. sylvestris*, mostly trunkless, but nice

to see all the same.

The next morning found us up and ready to leave by 7:30, when the jeep we had arranged to borrow arrived at the hotel, driven by Alook, Poonam's brother. We left the village behind us and drove due south along quite a reasonable tarred road, across the floor of the valley, towards our destination, which we now knew as Mount Thalkedar, the name 'Thakil' not having been used in living memory. After some miles, we began climbing. Up and up we went, with the view improving by the minute. We soon saw the snow covered peaks of the Himalayas, miles away on the far side of the town we had left. The highest, called Nanda Devi, was the first to appear, and others came into view as we ascended.

The road deteriorated and tar became dirt. It became ever narrower, with hairpin bends and a drop of perhaps 150 metres, centimeters away from the wheels of the jeep. We stopped once or twice for photos and to admire the now stunning view. The entire visible horizon from east to west was snow-covered peaks.

At length, and with considerable relief, we reached a small village called Burapi on the 'other side' of the mountain range. Here we gratefully got out of the jeep and stretched our legs. The inevitable cluster of locals gathered to see what was going on and we showed round photos of *Trachycarpus*, to see if anyone recognized them. Depressingly no one did. We were disappointed and confused. All the old accounts we had read said these palms were here, on this mountain, in great numbers, but nobody appeared to have seen them. Were they extinct? Had there simply been a mistake made and two accounts been transposed a hundred years ago? Had all the trees perished in some severe winter beyond living memory?

We showed round the photos of *Trachycarpus* to the villagers, but again, no one recognized them. Frustrating indeed, but even this did not dim our determination to visit the actual valley mentioned in the old reports to see for ourselves. It was on the far side of the peak with the temple,

just a few kilometres away, but involving some serious climbing, up hill and down dale.

A young man called Hareesh then appeared on the scene who said he would act as our guide and take us up there. We showed him the photo expecting the familiar response, but to our surprise and disbelief he said he knew of such a tree some 10 or 15 minutes away, in the direction we wanted to go. Our excitement can only be imagined.

He donned our rucksack and we set off at a brisk pace, some of the villagers following, with Wilko and I hardly daring to hope. We climbed up through a steep and pretty forest, and on emerging from its far side I heard Wilko's exclamation, and looking up I saw one of the most wonderful and welcome sights I have ever seen. A tall, beautiful *Trachycarpus* palm, about 8 metres high, growing on a steep slope, about 30 metres away from us! We rushed towards it, hugging it and each other and everybody else. They must have thought we were quite mad, but our excitement was infectious because soon everybody was laughing and shaking hands and slapping backs, though most of them had no idea why!

We were ecstatically happy. Everybody had told us it was mission impossible. Even the forest rangers had told us that there were no fan palms to be found. But we had proved them all wrong!

We took lots of photos, and we had Hareesh climb up to cut a leaf. Before we could stop him he had hacked off four. We screamed at him to stop. Nearby was a house and people were coming from it to join in the fun. Our guide told us that the old man there had planted the tree 50 years ago. We talked to him although he didn't understand a word we were saying, and we shook his hand many times. Through Hareesh's efforts we learned that he had found it as a seedling a mile or two away and had transplanted it. He was 75 years old. Soon some 25 people had gathered and we assembled for a group photo: old men and women, young girls and boys, and



babes in arms.

After about half an hour we--Hareesh and a second guide whose name was Karen, and Wilko and I--were on our way again, with many backward glances at our tree. Our initial destination was the temple at the summit, a good way off and much higher than where we were. At first we passed through open forest and cultivated land noting occasional *Quercus incana* (Grey Oak) and other trees. As we ascended the forest closed in, with just occasional clear areas. We saw a *Rhododendron* bush-- the first of many--and lots of other English garden plants: *Berberis*, *Cotoneaster*, *Roses*, *Ferns* and *anemones*. As we climbed ever upwards the *Rhododendrons* increased in number and size, eventually becoming giant trees with trunks so thick that two men could not encircle them. The *quercus* oaks became more numerous, as did *Cedrus deodara*; and the *Deodar*, *Pinus longifolia*, with its beautiful, long, softly-drooping needles, which was so common on the lower slopes, began to peter out.

The view from our occasional resting places was incredible: snow capped mountains seen beyond mile after mile of tree tops. The higher the altitude, the thinner the atmosphere, and Wilko and I were both gasping. Our two guides, however, seemed to take it all in their stride, and I think were faintly amused at these two weak westerners, panting for breath. The sun was hot, but the air was cool and provided a welcome chilly breeze. Every so often we caught a glimpse of the summit and its temple through the thickening forest. Nearer and nearer and then suddenly there we were, at the top. More handshakes with each other and the guides.

The temple itself was an open stone cabin, and inside was a small statue of the goddess Shiva to whom it was dedicated. There were flowers, candles and incense, and, hanging from the roof beams, hundreds of brass bells, some just a couple of centimeters or so in diameter, some half a metre or more across. Our guides rang them loudly and their clear notes rang out across the surrounding

valleys and echoed back from the distant hillsides, giving a scare to a troop of large silver-backed monkeys which went crashing off through the treetops. Here we really felt as though we were on the roof of the world, and close to heaven, both literally and metaphorically.

We stayed here for an hour, prepared and ate a meal, and took long drinks of water from our canteens. After all of our hard work, the water was like nectar to us, even though the purification tablets made it taste of swimming pools. As we were leaving I was distressed to see Hareesh take all my carefully collected litter, and before I could stop him, hurl it into the forest below. Oh well, food for the monkeys I suppose.

We set off down by the same path but soon broke off onto a side track, and began descending the north side of the mountain. It was noticeably cooler, and damper, as the sun doesn't shine much on this face. The vegetation also was different. It grew in thick, rich, moist humus, and generally looked more green and lush. We came across a pretty species of bamboo with many tiny leaflets giving it a fox-tail appearance.

We had been descending for only a few minutes when Hareesh spotted a tiny palm seedling growing by the side of the track. Definitely *Trachycarpus*. Then we saw another and another, and we left the path, more or less following their direction. They became more numerous and larger: up to about a metre and a half tall. Our excitement knew no bounds as we slipped and slithered down from one plant to another, which were getting bigger by the minute. It became apparent that they were growing in just this one narrow and steep valley, as when we strayed too far from its floor, the plants diminished both in size and number.

We just had to find the adult trees that produced the seeds from which the young plants we were looking at had grown. We could see down into the valley to an extent but much of the view was obscured by vegetation. We saw a fairly large plant on the other side of the valley, about 20

metres away, and resolved to reach it. Leaving the rucksack with Karen, we scrambled across the steep slope, hanging on to other plants, and occasionally, it must be admitted, the palms themselves, to prevent ourselves from slipping. It was quite dangerous in places; logs which seemed solidly moored slid away at a touch and went crashing down the steep face. Eventually we reached the tree, and with difficulty (simply because of the angle of the ground) posed with it for photos. The crown was covered in chestnut coloured tomentum, as mentioned in Beccari's description, written 100 years ago.

We made our way back to where Karen was anxiously waiting, and by this time I was really beginning to feel the effects of the altitude and my exhaustion, and I felt nauseous. It was bearable but I needed to rest every few minutes. By this time it was 4pm and as we had arranged to meet Amok and the jeep down at the bottom at 6pm, we had to get a move on. We saw many more small plants of *Trachycarpus*, but as we neared the track they became fewer and fewer, and soon we saw no more

The descent was of course considerably easier than the ascent and in places the track was just a gentle slope. Even so it took 2 hours of quite fast work to get back to the village where Alook said he would wait. Our guides took it all in their stride; they were chatting away as though out for a Sunday stroll, leaving Wilko and I running to catch up with them from time to time.

At 6pm we reached the village and had some welcome chai and a good rest. Alook duly arrived with the jeep, and we set off back to Pithoragarh. Soon it was quite dark, and we saw fireflies.

We had had a wonderful day and were quite elated by our findings; however, we were disappointed not to have found any mature trees in the valley. We were convinced that these were lower down; the plants had definitely seemed to get larger as we descended, but then lack of time had forced an early end to the search. We decided to rest for the entire next day, but spend the night

at Burapi, from where would set off early the following morning, taking supplies and equipment for a two day stay on the mountain. This, we felt, would give us plenty of time for a full and thorough examination of the valley, where we would certainly find the larger specimens.

We had a lazy morning in Pithoragarh, doing some shopping for food, and generally relaxing. We had arranged for a jeep to take us to Burapi, which arrived at 2pm. This time the drive up the mountain side was even more dangerous than the first time. The jeep had no first gear, so it was necessary for him to take the hairpin bends 'at a run' for fear of stalling the engine. Not only that but he insisted on driving on the 'drop side' of the road. I was sitting in the back with the mountain on my right and a sheer drop of 1000ft on my left. As we raced round the bends, I could look down out of the window into the void. Several times we shouted at the driver to slow down, but he seemed to take little notice. Sometimes I literally closed my eyes.

At one time we met a herd of cows on the road, but instead of slowing down to let them pass, he drove hard and fast straight at them, forcing them off the road and onto a tiny narrow verge. It was a miracle that none of them fell off the edge. It was therefore something of a relief when we arrived at Burapi at about 4 p.m. Wilko and I stayed the night here, ready for an early start the following morning.

We set off as the sun was just peeping over the distant horizon, at 6.20am. There were four of us: Hareesh, another porter, Wilko and I. We were taken along a different track this time, and the going was somewhat easier than before...or perhaps we were simply getting used to the altitude and the exercise. After an hour or so we came across a small house, and we stopped for a rest and some chai. We were, as always, made very welcome and treated like honoured guests. Also, as usual, we were surrounded by curious onlookers. We began asking them about palm trees and showing them the now well-thumbed

photos of Trachycarpus and some of the leaf bases we had collected from the big tree. One of the men explained in half mime, half-Hindi that ropes were made from them. To our surprise Hareesh took some fibres from the bases of the leaves, and, rolling them between the palms of his hands, soon produced a foot or two of good strong rope, somewhat thicker than a pencil. The significance of this demonstration would only become apparent later on.

One of the men then said he knew of some mature palm trees and agreed to take us to them. In fact, three or four of them accompanied us and we set off up the same track. After a stiff climb of half an hour or so, we came upon 5 big trees of Trachycarpus, which had been left standing when the surrounding land had been cleared for cultivation. They were on an exposed hill top and looked quite stunning with the snow covered Himalayas as a backdrop. The light here was quite intense, causing the leaves to have very short petioles.

The man who farmed here chatted to us as we took photos. His house was on one of the three summits of the Thalkedar mountain, the temple was on another and the third was the highest at 8200ft above sea level.

Since it was our intention to sleep at the temple that night, he said he would shine a torch from his summit to ours at precisely 7.30pm as a greeting. We spent some time at his house, the garden of which looked almost English, with marigolds, African marigolds, dahlias, a peach and an apple tree, and a patio of rough-hewn stone slabs, where we sat drinking tea.

At length we took our departure and headed off down the hill in the direction of the valley we wanted to explore. We had some adventures descending its steep, sometimes precipitous sides, in search of the larger palm trees which we felt must be here somewhere. Small plants up to 4 or 5ft tall we saw by the hundred, but no large ones. Hareesh kept on saying 'No big, no big.' With sketches and mimes we tried to explain that these

small plants came from larger trees, mummies and daddies in fact, and we asked him, 'where Mummy? Where Daddy?' but he insisted, 'No Mummy, no Daddy.'

During a rest stop he got around to explaining why there were no mature plants or big trees, and it was with sinking hearts that we realized the awful truth: the young plants are cut off at the base when they have 18" of trunk, to provide fibres for ropes.

'All cut?' we asked, incredulous. 'All cut' confirmed Hareesh. The stupidity of it is that no seeds are produced by the palms before they are cut, and despite what the natives believed, new plants did NOT spring up from the stump of the old one. One of the 100 year old accounts we had read in the library at Kew spoke of 'hundreds of palm trees' in this very valley. Presumably they have been cutting them smaller and smaller ever since, and now there are none, rather like smaller and smaller elephants being shot for their ivory, even before they have had a chance to breed.

A further irony is that it is perfectly possible to remove all the fibres from a mature tree without harming it at all. We have done it a few times at the nursery: Start from the bottom of the trunk and with a sharp knife cut through the old petiole and then right round the trunk, just cutting through the fibre. A sheet of fibre about 40cm square will come away, with the old petiole in the middle. Continue onto the next one up and repeat the process. It's time consuming but not difficult. On a tree with a couple of metres of trunk you can get up to 30 or 40 such squares. And of course the tree will continue to thrive and produce more fibres for you.

We tried to explain all this to Hareesh but it was an impossible task. Our guess is that once every year or two a gang of villagers make an assault on the valley and cut down every palm that has half a metre of trunk. They would all then be gathered together and stripped back at the village. What a waste!



As time was getting on we asked Hareesh to take us to the temple. It wasn't too bad a climb and we reached it at about 4pm when, after a rest and some tea, Hareesh and his colleague left us, to return to Burapi.

The solitude was wonderful then, on the roof of the world, no one around for miles, the snow-capped Himalayan peaks on the horizon, and only a few ravens for company. We lit a fire and cooked a surprisingly good meal: potatoes, lentils and some packets of soup, all mixed into a kind of stew. We watched the sun sink lower and lower and finally dip below the horizon at precisely 5.40pm. The Himalayan peaks were the last things to see the sun, which shone on fewer and fewer until Nanda Devi was the last to remain illuminated by its now pink rays.

The temperature drops quickly when the sun sets and soon we donned jumpers and watched the new moon rise and the stars begin to shine, until there were countless millions of pin points of light in the sky. At 7.30 we saw the promised torch light from the distant neighbouring summit and flashed ours back in return. We could just hear his shouted greeting, and rang the bells and whistled in reply. We finished our stew by torch light, then cleared up and settled down in our sleeping bags for a good night's sleep.

I woke to the sound of the ravens. The sun was over the horizon already, and it was time to be up. We made a cup of tea and sorted ourselves out. On our max/min thermometer we saw that the temperature had dropped to 8 C during the night. This was October; it must get considerably colder in mid-winter. We left the summit and the temple at 8.30am. We said goodbye to Shiva and the ravens and decided the best way down to the valley. Then, taking our last look at the fabulous view, descended into the forest.

We went down some way, and, as before, saw hundreds of small *Trachycarpus* palms, but of course no large ones. It then became too steep for us to continue without great danger, so we went, crab-fashion, across to where the slope was

more gentle. Even so, it was quite steep and much of the descent I accomplished in a sitting position, sliding down on my behind!

We soon came across the largest specimen we were to see in the forest, under a huge and vertical cliff face, and looking as though it, single-handedly, was supporting the whole thing. Small wonder they had not cut this one down! It had about one and a half metres (4'6") of trunk, thick at the bottom, but tapering towards the top, and very long petioles, indicating a need for more light. However, these plants do not grow on the sunny side of the valley, presumably because it is too dry. As the old description had said, we found them only in damp, narrow valleys, and almost always in full shade.

We continued the descent, in all some 1000 metres (3000ft), by sliding, scrambling, slithering, climbing, and by lowering ourselves using the plants for support. One way or another, down we came. We stopped for lunch, cooking some very welcome soup. The vegetation was spectacular: huge incana oaks, massive rhododendron trees, ferns, bamboos, and of course, palms by the dozen. Fortunately the temperature was quite cool, at around 11.5 C, as otherwise it would have been unbearable. The rucksacks were heavy and often became entangled in the roses and briars which grew in profusion. Thorns tore at our arms and faces. Sometimes it was so dense that we just had to force our way through. It was incredible to look back up and see where we had come down from, and at the sheer rock faces we had circled round.

As we came down, the palms became smaller and less frequent, their place seemingly taken by ferns. Horse chestnut trees beginning to show their autumn colours made it look like an English woodland. We saw our last palm as we reached the valley bottom. We picked up a track, and followed it down a gentle slope for perhaps a mile until we began to see signs of human habitation. Eventually the path widened, and led us through

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# In Search of Trachycarpus nanus

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After a successful expedition to re-locate *Trachycarpus takil* in northwest India (see "Principes" 37(1): 19-25), it seemed a natural step for somebody obsessed with the genus to visit China to look for *Trachycarpus nanus*, that mysterious and diminutive relative of the well known Chusan Palm (*T. fortunei*), often referred to but never photographed and never brought into cultivation.

It was originally "discovered" (to use that presumptuous term) by Father Delavay in Yunnan Province, southwestern China, in 1887, and was first described scientifically by Beccari in 1910. Since then, it does not seem to have attracted much attention, growing quietly and minding its own business. Here, we thought, was a wonderful opportunity to rescue this interesting palm from obscurity and, possibly, from extinction.

Excited by the prospect of an adventure in a far-off land, we arranged to go in October, when, according to Beccari, the fruits of *T. nanus* ripen. We were helped considerably in our research by Professor Chen Sanyang of the Kunming Institute of Botany, who gave us precise locations of where he believed our quarry was to be found, and our expedition was based on his suggestions. Thus we set off, taking separate flights from England and Germany and meeting in Bangkok, Thailand, where we prepared for the long journey north.

The first leg was a flight on China Airways to Kunming, where we arrived at midday. Travel

in China is not easy. You cannot buy a return ticket on any form of transport; you buy a single, and then buy another single to get back, once you arrive. Since every flight is always full (or the flight is simply cancelled), it is a continuous worry knowing whether you are going to be able to get back once you arrive at your destination. This time we were lucky, and after re-confirming our return flight, we bought a one-way ticket on the overnight bus for Xiaguan, which was due to leave in just a few hours. Unfortunately we were too late to get on the "soft seat" bus so settled for the "hard seat" (second class) and prepared for the worst. In this we were not disappointed.

We set off at 7 p.m. from the Kunming bus station, cleverly designed in a half circle so that all the decrepit buses can back up to it and fill the passenger waiting area inside with dense fumes whenever the ancient diesel engines start to life! Our bus was full to bursting with men, women, children, babes-in-arms and suitcases, not to mention assorted bags, bales and bundles (including two rucksacks) filling every available space. We settled down as best we could and prepared for the ten-hour journey. The fare, after all, was only \$4.50. On and on through the night we drove, with the occasional stop for nature's calls, and once, at 2 a.m., at a collection of roadside stalls selling anonymous and unidentifiable food. We felt very smug, having brought instant soup, coffee, and creamer for just such an eventuality.

We duly arrived at Xiaguan at 5 a.m., when

it was still dark and cold. Feeling fairly dreadful after the cramped night with only intermittent sleep, we hastened straight away to the bus station where we bought bus tickets for Binchuan, the next leg of the trip. We were lucky in that it was to depart in only 90 minutes, and we spent this time watching the town slowly come to life as the sun rose and drinking steaming mugs of coffee, which never tasted better.

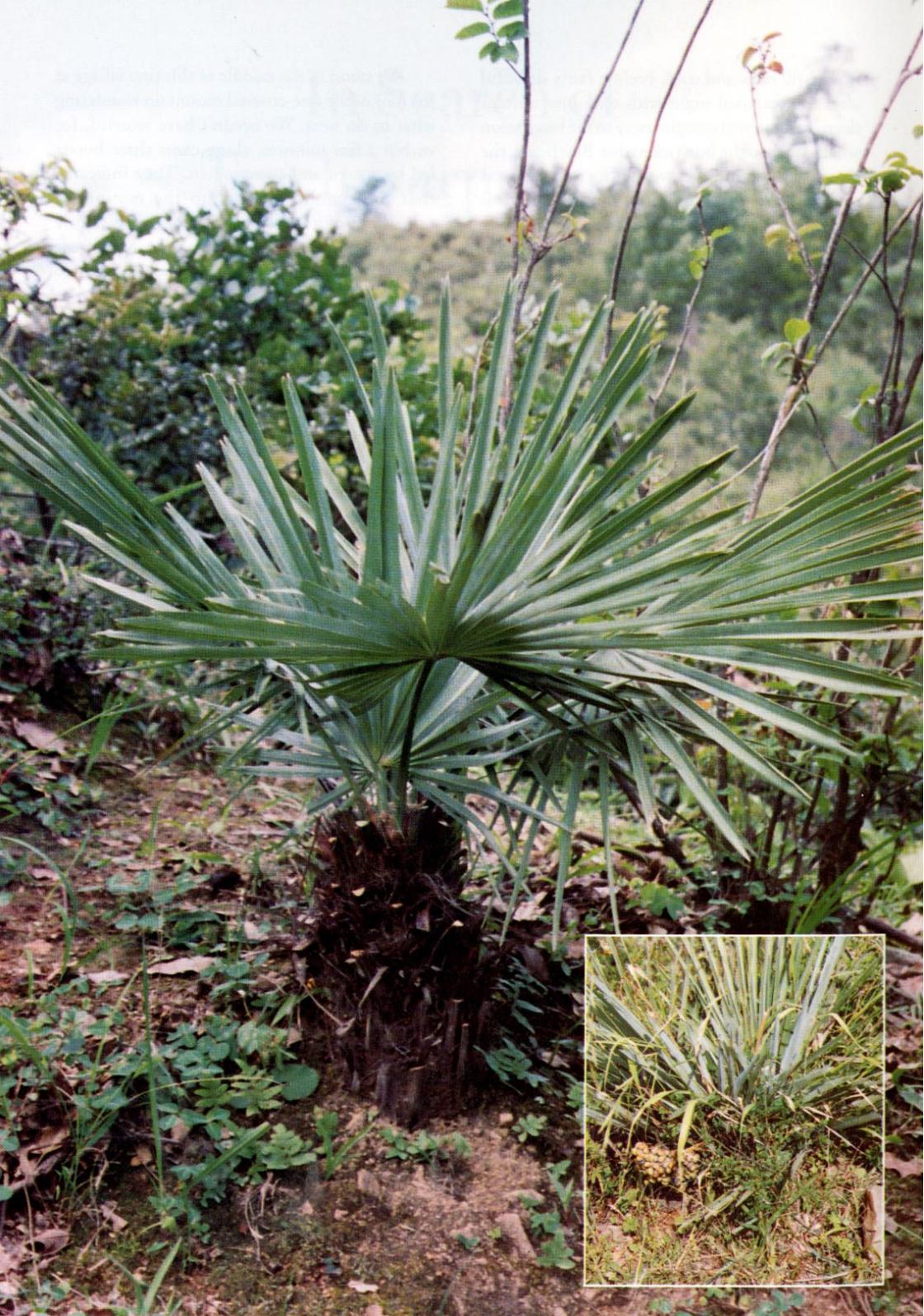
Sharp at 6:30 a.m. we found ourselves on another bus, just as old, just as crowded, but heading out into the countryside now bright with sunshine, and we were able to take our first look around. We soon spotted *Trachycarpus fortunei*--hundreds of them-- but all had been stripped for the fibers which the Chinese make into brooms and brushes, rain capes, and door mats. The road became more and more bumpy as cobbles took the place of tar, and the landscape became more hilly. It really was very uncomfortable and we were glad when we arrived some three hours later at Binchuan. Here we tried to get tickets for Shazhi, some 50 miles to the west off the main north-south road we were travelling up. It the nearest village to Mount Jizu Shan, where we hoped to find *Trachycarpus nanus*. However, from what we gathered from the dozens of people who clustered around (none of whom spoke a word of English, and we, not a word of Chinese) that there was no bus today, so we decided to walk outside the town and just hope for the best.

Shouldering our rucksacks, we set off, and soon a small truck stopped and bade us climb in the open back, which had a single, hard bench down each side. Delighted with our luck, we set off once again, with every hour bringing us closer to our goal. However, if we thought the previous conveyance uncomfortable, this was ten times more so, and we were literally thrown around in the back and had to hang on for dear life as the truck sped and bounced along the cobbled and potholed road. Two hours later, we arrived, bruised and very sore, at Shazhi, where we were delighted to say goodbye to the "boneshaker."

We stood in the middle of this tiny village at the foot of the tree-covered mountain wondering what to do next. We needn't have worried, for within a few minutes, along came three horses led by a man and two women. They indicated that they would take us up the mountain, something of a local beauty spot and a nature reserve. We tied our rucksacks onto one of the horses and mounted the other two. After two "hard seat" buses and the bumpy old truck, our behinds were feeling a little sensitive--a condition not improved by the hard saddles--and soon we were aching as though we'd spent three days on a cattle drive!

We showed the man a photograph of *Trachycarpus*, and to our delight and disbelief he recognized it and pointed up along the track we were following. After an hour-long, painful ride up a steep trail through thick mud, our guide indicated that we should dismount, and this we were most happy to do. He was pointing in amongst the bushes, and suddenly we saw what looked like a young *T. fortunei*. We scrambled up to it, feeling somewhat disappointed. Once we saw the erect flower stalks we realized we'd been wrong: we were looking at *Trachycarpus nanus*! Our excitement can only be imagined, but even that heartstopping moment was topped a few minutes later when our new friend disappeared into the bushes and came back with an infructescence full of ripe fruit. We felt as though we'd struck oil!

The plants were scattered in the undergrowth, consisting of rather stunted, relatively dense, evergreen forest, on a steep southwest-facing slope, at an altitude of about 2,200 m (Fig. 1). All the plants were very small, barely 50 cm high, and most had only 1 to 3 intact leaves, apparently the result of heavy damage by insects. *Trachycarpus nanus* could easily be mistaken for *T. fortunei* here, developing soft, dark green leaves, with leaflets held flat on long petioles in their shady habitat. Only a very few plants carried fruit, though many were seen with old inflorescences and there were quite a few seedlings around.



The surrounding vegetation was comprised laurel-like evergreen trees of many different kinds, some rhododendrons, and a few scattered pines, all densely covered with lichen. Also a small, shrubby bamboo was seen in close association with "our" palms, and, as we discovered later, it was always and only growing where the palms were found. The soil, a heavy reddish clay, was rather acidic, contradicting the idea that they only grow on limestone. In this rather moist mountain forest, 77 nanus grew only on the drier slopes and apparently not below 2,100 m.

After exploring for an hour or two and finding a few more seeds, we made our painful way back down the mountain. There was no transport back to Binchuan on the main road that day, and, as it was getting late, we checked in at a small "hotel" in the village. It had no bathroom or toilets so we took it in turn to shampoo, shave, and shower in a tin bowl of warm water apiece. We then discovered that there was a vehicle going back after all, so we checked out again. The arrangement was the same as before: we sat in the back on two benches, equally uncomfortable, and again we were bounced around for the two-hour trip back to Binchuan on the main north-south road. Here we found another "hotel": no showers, no hot water, and hard beds with sheets that smelled worse than we did. However, we were exhausted after over two days with no sleep and passed the night comfortably enough.

The next morning we woke somewhat refreshed and eager to check out the next locations of *Trachycarpus nanus*. Again we had no success in finding a north-bound bus, and found ourselves in the familiar situation of being in a strange town, surrounded by dozens of people with whom we had not a single word in common, all apparently giving us advice about how to get to our destination, and all pointing in different directions! Shouldering our way out of this crowd we used a compass to locate the right road and walked out of the town heading north, ever north. Before too long we waded down a "boneshaker" which took us a long way through beautiful countryside. We had the sun on our right and

the distant view of Mount Jizu Shari on our left as we sped up this quite good road. We were surrounded by paddy fields of smiling and waving peasants, and arid villages where even the most humble building had traditional oriental upswept roof ridges.

After an hour or so the driver dropped us off and just five minutes later we were in a real bus and on our way again. There are very few foreigners in this part of the world and our appearance at any location, be it hotel, bus, or just on the street, caused great interest. The Chinese are a friendly lot and a smile is always returned with an even bigger smile. The one word they all know is "hello" and we almost got to hate this word, since it was shouted at us countless thousands of times during our stay in that country.

After some 70 or 80 miles, when the landscape became more hilly and barren, we started to see more, and the difficulty lay in deciding when to get off the bus for a closer look. After passing one or two particularly tempting clumps, we alighted, waving goodbye to the other passengers who must have wondered why we were getting off in the middle of nowhere, and walked back to the plants.

We left the road and soon found ourselves surrounded by dozens of beautiful small fan palms. They were growing on steep, stony, dry hillsides above 2,100 m, scattered amongst small, stunted, hard-leaved evergreen shrubs and trees or in pasture with their leaves sticking out from the grass. As the vegetation was very open, most of the palms were growing in only very light shade or enjoying the full sun. We felt that we had found the real thing now. *T. nanus* looked totally different from those we had seen at Jizu Shari the day before. Not only were they larger and much more attractive, with many perfectly grown, stiff, often glaucous leaves, but they were also absolutely undamaged.

The palms we observed were very variable: They held from half a dozen to over 20 very stiff

and deeply divided fan-shaped leaves, 20 to 50 cm long, with 20 to 30 deeply folded leaflets. This is probably an adaptation to the drier climate; those we had seen in the moist forest held the leaflets flat. The tips were slightly bifid. The leaf color varied from light green to an almost silvery blue. The abaxial side, particularly, was clearly glaucous. The petioles were finely toothed and measured from 12 to 25 cm in length. Many plants were found with dried, erect inflorescences, usually one or two, sometimes up to five, slightly exceeding the length of the petiole. Only a very few plants could be found with their stiff, upright inflorescences full with seeds.

Some plants, growing on eroded sites where much of the soil had been washed away, revealed long, curved, horizontal underground trunks, about 5 cm in diameter and up to 60 cm or more long, appearing just like the illustration of *Trachycarpus dracocephalus* (now regarded as synonymous with *T. nanus*) that was reproduced in Myron Kymnach's article in "Principes" 21: 158. These plants must have been very old indeed, as must have the one or two we found with short aboveground trunks, up to 30 cm high, which were fibrous in the manner of *T. fortunei*.

We found *T. nanus* to be most common on the north-, west-, and east facing slopes, with only few plants occurring on the drier southern hillsides. In addition, they were extremely local, being entirely absent from neighboring areas that seemed perfect for them. The soil, a stony and sandy but crumbly loam, was slightly acidic to neutral. With the exception of the steepest slopes, all of the land was under cultivation. On much of this land grazed cattle and goats, which, although undoubtedly finding the adult palm leaves too tough to handle, probably found the inflorescences and young seedlings tasty and edible. This would account for the few seeds and total absence of young and juvenile plants. It could be assumed from this that the species is condemned to extinction in the wild here, if not on Mt. Jizu Shan.

We spent several more days in China, hitch-

hiking or travelling by bus or plane, and saw many more palms, but nothing could quite equal the excitement of seeing *Trachycarpus nanus* for the first time. We hope that this unusual, attractive, but little-known hardy palm may soon be distributed around the world, contributing to its survival.

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## Editorial

*...continued from page 3*

our 'hotel' for a few hours' snatched sleep, only to be up to catch the bumpy bus that would take us to the airport and home.

During our travels far and wide we came across two more species, new to science: *T. oreophilus* and *T. latisectus*, in Thailand and India respectively. Neither performs well in cultivation while they are young. A hundred seedlings defoliated when they were re-potted. It is fervently hoped that these teething troubles will sort themselves out as the plants get older, the latter certainly is a beautiful palm and well deserves a place in the garden.

Finally, *T. wagnerianus*, not (yet?) known in the wild, but one of the best species. With its short stiff leaves, it is more wild tolerant than any of the others, performs well and grows fast, the only problem being a (hopefully temporary) shortage of both seeds and plants.

There are many memories on the *Trachycarpus* trail, most happy, a few sad. There are enough adventures to fill a book, which we have been promising ourselves to write, for years. Alas, until there are 8 days in the week and 48 hours in the day, it will remain a dream for the time being. Meanwhile, I hope you enjoy this issue. M.G.

# Trachycarpus martianus

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If you would like to see *Trachycarpus martianus* in the wild, a good place to begin looking is between the covers of Odoardo Beccari's work on Asiatic palms in "Annals of the Royal Botanic Garden, Calcutta." Published posthumously in 1931, it is still the most recent full taxonomic account of *Trachycarpus*, and summarizes, in a very readable form, all that was known of the genus at that time (also see Myron Kimmach, "Principes" 21(4):155-160). Despite the fact that it was written 80 years ago, Beccari was such a scientist that the information contained in his book is as relevant today as it was when it was published, and is surprisingly accurate in almost every respect.

Under 'Habitat' in the section on *Trachycarpus martianus* we read, ".....Rather frequent in the Khasia Hills, between 1000 to 1500m elevation, at Lonkerden and at Noughedem, at Moosmai and Manloo; in the latter locality Sir Joseph Hooker wrote that 'it grows on the cliffs' and 'that it may be seen on looking over the edge of the plateau, its long, curved trunk rising out of the naked rocks, but its site is generally inaccessible'....."

Having seen *Trachycarpus takil* and *T. nanus* in their natural habitat, our next step along the *Trachycarpus* trail had to be towards *T. martianus*, familiar by name, often referred to and in just about every book on palms, and yet extremely rare in cultivation. It exists in small numbers at Huntington Botanical Gardens in California, but is represented in Europe by a single mature specimen in a private garden in the south of France. It seemed time to bring this beautiful tree out of the shadows and into the light.

The Khasia Hills are in Meghalaya Province in remote north-east India. The whole area is 'restricted' and a permit must be obtained before

one is allowed to visit. The main town, Shillong, is reached by driving south from Gauhati. To get to Gauhati, we flew from Calcutta on an Indian Airlines airbus. The flight is just 45 minutes, but the ensuing bus journey, though only a fraction of the distance, takes many times longer. This climb up into the hills was a continuous pattern of overtaking lorry after lorry after lorry, all crawling uphill and all emitting great clouds of thick and poisonous fumes. This pollution hangs heavy on the still air in the otherwise beautiful countryside.

Pollution aside, Shillong itself is a most interesting and attractive town. Once a 'hill station' during the British rule in India, it was, and still is, a cool retreat from the heat of the plains. At 1500 metres above sea level the weather in October was extremely pleasant, warm but not hot, the nights comfortably cool. There are many examples of colonial architecture in the town; unfortunately, much of this architecture is not maintained and therefore decaying. The Pinewood Hotel is a wonderful example. Like an old aristocratic lady fallen on hard times, it presents a brave face to the world, but time has moved on and passed it by. These days air conditioning, television in every room, and mini-bars are more important than ballrooms and verandahs and tiffin and punkah-wallahs. However, in the nicely maintained grounds (lawns, flower beds and huge *Araucarias*), we saw our first *Trachycarpus martianus*, two tall and beautiful trees.

We were to see many more in the town, often outside public buildings, such as one outside the extraordinary Roman Catholic Cathedral, best described as art deco gone mad. Ward's Lake Garden in the centre of town boasted another dozen. They really are beautiful trees; visibly



distinct from all other *Trachycarpus*, and yet the relationship is clearly seen. *T. martianus* has a comparatively large crown of regularly divided leaves with a strong, whitish bloom on their lower sides. Most have naturally bare trunks, and the fibres from the old leaf bases cover just a foot or two below the crown; old leaves can be pulled off with a minimum of effort. This however is not a reliable feature for identification since other *Trachycarpus* species can also shed their fibres naturally, or indeed they may be stripped. Also we came across one or two trees in the garden which had fibres right down to the ground, so there is clearly some variability here.

What is a reliable identification characteristic, however, is the fruit and seed which is the size and shape of a coffee bean rather than kidney-shaped as in every other member of the genus. All of the female trees we saw had clusters of bright yellow fruit hanging down from within the crown. We estimated 6,000 seeds on the six infructescences of a single tree. It is a terrible shame that there are so few young plants. All of these mature trees have been producing seeds in these huge quantities for 50 years or more, so that countless millions of seeds have all gone to waste. Presumably, when these old trees die, there will be no more *Trachycarpus martianus* in Shillong, and the town will be the poorer for it. Curiously, even officers at the Forestry Department in the town were hardly aware of its existence, even though there were a dozen or more scarcely a minute from their office. They were totally unaware of its existence in the wild.

Having inspected and admired every cultivated tree we could find, we were naturally impatient to look for wild specimens. We rented a car and driver and with 'Beccari' clutched firmly in our hands we set off to follow his directions, written 80 years previously. Heading south from Shillong, we soon cleared the town and drove through an undulating landscape, densely forested with *Pinus khasia*, gradually changing into a totally deforested hilly plateau, some 1400m above sea level. Around 80km from Shillong we reached the town of Cherrapunjee, one time record-holder as the wettest place on earth, with an annual 12 metres of rain. There

was certainly no rain on the day that we were there, though, and we had a clear, fabulous, and unexpected view of huge cliffs, disappearing down into the valley below us. Not far from 'Cherra' near the village of Mawsmi (Beccari's Moosmai) there were more such cliffs, which apparently marked the southern edge of the plateau.

In contrast to the hilly plateau across which we had been driving, which was mainly grassland with the occasional *Pandanus* thicket left in ravines and depressions, the cliffs and lower slopes were densely forested. Though we saw other palms there--at least two species of *Calamus*, several *Caryota* - Fish Tail palms - and a curious *Arenga*-like species we were not able to identify until later--there were no *Trachycarpus* to be seen. Somewhat disappointed, we decided at Manloo (today spelled Mawmloo) to drive further down the road, which began to descend steeply in hairpin bends. From the map we could tell that the road eventually ended up in Bangladesh, which we could see, covered by lakes, in the blue and hazy distance. As we went down, the temperature went up, and the vegetation became more tropical. More palms began to appear, as well as bananas and tree ferns. We again saw *Caryota obtusa*, with huge, flatly-held leaves, and a little further down, at around 1000m a.s.l., a second tall, slender Fish Tail palm. This one, probably *Caryota maxima*, had quite different leaves in a tumbling habit, and was growing together with great numbers of *Calamus*, later identified as *C. erectus*, in full but unripe fruit. We were also very pleased to find *Wallichia densiflora* which perhaps should have given us a clue as to the identity of the mystery palm from before, which turned out to be no less than *Wallichia disticha*, not previously recorded for the Khasia Hills, with its unique, 2-ranked arrangement of leaves. Palm hunting has to be done carefully here: huge yellow and black spiders as big as your hand sit patiently in webs the size of dinner tables slung between shrubs, waiting for the unwary to stumble in for lunch.

Lest we should end up, like the road, in Bangladesh, we turned round in a tiny village and after having some 'chai' - hot, sweet and milky

tea served in a glass - set off back up to Mawmloo.

Delighted with our findings but concerned about the apparent absence of *Trachycarpus martianus*, we asked the driver to take us to Nohkalikai Falls, just west of Mawmloo. We should not have worried, for a few miles further on, looming out of the mist that was now gathering as the day drew on, we saw them. First one, then many. They were growing on the very edge of a precipice that we could not see into because of the mist. We could hear the distant roar of a waterfall, but frustratingly had to return the following morning to see more.

The sun shone bright and clear as we drove back to the same spot the next day. What we had been unable to see was now revealed: the cliffs on the edge of which we were standing were some 300m (1000 feet) almost straight down. The waterfall we had heard was half-a-mile away at the head of the valley and the water cascaded in free fall for many hundreds of feet, creating a rainbow with the spray. We could look across the gorge to see the identical cliffs on the far side, and huge butterflies were idly casting themselves out into the void. It really was a magical place. At the base, where the cliffs themselves moderate into a steep slope, densely forested with small epiphyte-covered evergreen trees, we could spot *Wallichia disticha* and that huge, broad leaved *Caryota obtusa* again, which formed a conspicuous component of the forest canopy.

And then...we saw *Trachycarpus*! By the dozen and by the hundred! They were growing, just as Sir Joseph Hooker had reported, out of the bare rock, on ledges and in cracks on the south-facing cliffs, absolutely inaccessible. Even a mountain goat would need climbing gear. It occurred to us that we were undoubtedly standing on the very spot where Sir Joseph had stood 80 years previously. The rock itself was dark, soft and crumbly, and consisted of baked quartzite sand. Combined with this was not limestone as we had expected: the soil was sandy and strongly acidic with a pH of only 4-5.

The *Trachycarpus* were beautiful! The original trees we had spotted from the car were much closer; indeed, by leaning out slightly over the brink we could actually touch them, though

to collect seeds and herbarium specimens would have required some ingenuity with poles and wire and scateurs, as well as a head for heights.

Their trunks were growing straight out, or sometimes curiously bent away from the cliffs. Although a few younger plants had their trunks entirely covered, the coarse, loose, light brown fibres of the leaf bases persisted only just below the crown in adult trees, and under this a slender, smooth trunk was revealed with clearly visible, closely-spaced leaf scars. The young petioles and unexpanded leaves were covered in dense white tomentum. The leaves themselves were large, approximately 120cm across, medium green in color above and strongly glaucous below. They were very regularly split to about half way, into sometimes more than 75 stiff, erect segments, shallowly bifid and acute at the tip, presenting a distinctive, indeed unmistakable, silhouette. A unique feature of *Trachycarpus martianus* leaves is the small transverse cross-veins which run from one longitudinal leaf vein to another. These cross veins are much clearer than on other *Trachycarpus* species and are apparent even on seedlings and 100-year old herbarium specimens. Petioles as well as inflorescences (up to eight on a single tree) were considerably shorter and more erect on these trees than on the cultivated plants we had seen in Shillong and gave the palms a much more compact and wind-resistant appearance.

Though *Trachycarpus martianus* seems doomed through lack of interest in the town, its future in the wild seems as solid as the rocks on which it grows. Because of the inaccessibility of its habitat it is safe from those who would cut it down for firewood or for building, and it is equally safe from goats, the scourge of so many endangered palm species. Long may it remain so.

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# Trachycarpus princeps

## The Stone Gate Palm

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The chance sighting of a single line in a Chinese plant book led to perhaps the most exciting discovery of all, along the 'Trachycarpus Trail.' The book, "Chinese Endangered Plants," was published in Chinese and so quite incomprehensible to us. However, all the references were in English, or at least used the Roman alphabet, and of course all the Latin plant names were understandable. We were doing research on *Trachycarpus martianus*, and although there was no record of its occurrence in China in any of the other books we consulted, old and new, this book listed and described it. This seemed strange to us since it was not known to occur in China; why should it appear in a book of Chinese plants?

We arranged to have the entry translated into English and when it was done we were able to read what the Chinese author had to say about it. The entry began with a description of the palm - nothing strange here - and ended rather disappointingly with this: "The specie is native to central and eastern Himalayas and Burma. According to record there were some found in western and north-western Yunnan, but so far there is no specimen." And that might have been the end of it, but something nagged. What was this 'record' and how could we find out about it? It seemed an impossible task.

Then, some time later, we were re-reading the accounts for the hundredth time when a line in the references caught our eye. Amongst all the Chinese characters was this: "Hand.-Mazz. Symb.

Sin. 7(5): 1360. 1936". The numbers were obviously pages or chapters and 1936 the year, but what or who was Hand. Mazz.? And could that 'Sin' stand for 'Sinica' ie. China? Was this the old record? The answer came, as so many did, from the library at Kew. 'Hand.-Mazz' turned out to be an abbreviation of Dr. Heinrich Handel-Mazzetti, an Austrian botanist who made some explorations in south-east Tibet and north-west Yunnan between 1914 and 1918. He published his findings in a book called "Symbol' Sinic'" in German in 1936, a photocopy of which was kindly lent to us by the Library of the Botanical Museum in Berlin (Handel-Mazzetti, H. 1936. "Symbolae Sinicae: VII. Teil Anthophyta." Verlag Julius Springer, Wien). Here's what we found:

"*Trachycarpus martianus*...N.W. Yunnan. In the subtropical zone of the Burmese monsoonal forest on cliffs of crystalline limestone, in the Salween-gorge above Chamutong until below Niualo, 1725-1900m,....and from here replanted in the village of Sitjitong.

Flowers or fruits are not on hand. From my memory and a photograph sent by Dr. J. Rock, these approximately 7m high trees have stems of at least 20cm diameter after the leafbases have fallen, which develop a short tuft only below the fresh leaves. These are wax-white below....."

The trail was starting to warm up!

Additionally, we came across another book, "Naturbilder aus Südwestchina" ('Portraits of Nature in South West China'), by the same man. Whereas the first was more of a scientific work,

this was more of a diary, and filled in many gaps in a very readable fashion (it is now also available in English). On page 242, under the title, "To the Irrawaddy Upper Course" we read:

"In the evening, I reached Niualo, a Lissu village as you can tell by the name, the most northerly of all, and I was welcomed in a friendly manner, with presents.

From there it was finally not far any more to the Salween [river]. We descend, reaching the subtropical rainforest just below 2200m.....and a distance on bare rock leads us to the slope of the valley itself, from where we quickly descend through sparse pine forest to Sitjitong, a scattered village, 3km north of Chamutong.

"The Salween comes here from Wuli in the northeast, breaking through the band of crystalline limestone, through which, in the gorge of Chamutong, it is quickly returned towards the east, making up for this error in its NNW-SSE course.

"Everywhere, this hard rock shows as steep cliffs, in the lower gorge as enormous pillars, 600m high, one of which forces the path onto an artificial high wall in the river itself. At high water level, this route is flooded, and the only way to reach Chamutong is above, over the ridge. Whereas there are still xerophytes, such as *Schefflera delavayi*, here brownish and felt-like, found on the sandbank stretching along the river below Sitjitong, the gorge itself is characterized by sub-tropical opulence again. Huge lianas, like the new *Mucuna coriocalpa* with thick trunks and 50cm long pods, climb high up into the Sloaneas....between them flourishes the definitely tropical *Asplenium nidus*, developing large nests with tongue-shaped, 70cm long leaves. Rather xerophile again are the many small epiphytic orchids, none of which unfortunately was in flower any more, and the palm *Trachycarpus martiana*, which grows stately stems, mainly on the other side of the river, almost inaccessible on the cliffs.

"I crossed the flat scree of Chamutong,

around which the Salween is forced towards the eastern slope in a gentle bend, via the shortest way, below the main village, as I was in a hurry, and [being delayed by] the officer there was what I needed least. That he had already gone insane and died from opium and schnapps, of which he consumed 8-10 rice bowls a day, I did not know at the time. And so I came to Dara, a village on the slope, inhabited mainly by Tibetans....."

Exciting stuff! Limestone pillars 600m high - that would be something to see indeed. After a great deal of searching, the map room at Kew provided the location of Chamutong, and we were delighted to find Handel-Mazzetti's original map there. The village turned out to be in extreme north-west Yunnan, almost at the point where China, Tibet and Burma meet--a restricted or 'closed' area of China, certainly not open to the casual tourist. The Salween River itself rises in the Himalayas then flows south just to the east of the north/south border between China and Burma. Finally, a thousand miles later, it discharges itself into the Gulf of Martaban, in Burma, at Moulmein. So far, so good. But what of HM's collections and - intriguingly - that photograph?

Dr. Dransfield suggested that as Handel-Mazzetti was Austrian, his herbarium collections were likely to be in Vienna, and this indeed proved to be the case. Our friend there, Thomas Baumgartner, discovered them, in good condition, at the Institute of Botany where they had been gathering dust for 70 years. An official request kindly made by Dr. Dransfield brought them to England and it was with great excitement that we visited him at Kew to see them for ourselves.

A glance at the leaves was enough to make one thing immediately very clear. Though they were certainly *Trachycarpus* they were certainly not *T. martianus*. Most exciting of all was the photograph, taken by Dr. Rock and referred to by Handel-Mazzetti. It was a habitat photograph and although at first glance it appeared not to show any palms at all, closer examination under



a microscope revealed dozens of them growing on a sheer cliff face on the far side of a fast flowing river - the Salween, or as it is called in China, the Nu Jiang ('Angry River'). They looked like big trees, with thick trunks and with big crowns of fan-shaped leaves, not unlike *T. fortunei*. However, they seemed to have bare trunks, and as they were growing on such inaccessible sites it was inconceivable that they had been stripped by man, as are the vast majority of *Trachycarpus* in China, for their useful fibres. The whole thing was becoming very intriguing indeed, and we began to suspect that we were looking at a new, undescribed species of *Trachycarpus*. As is so often the case, the only way to solve this puzzle was to visit the palms, and this we resolved to do.

You have to have a good and valid reason to visit 'closed' areas of China, and even then, it's not always possible to get permission to do so. We were told that because our interest was botanical, we would have to apply first to the Institute of Botany in Kunming, who, on our behalf, would apply to the relevant authorities to try to obtain permission to visit the area where our palms grew. Our contact at the University was Professor Chen Sanyang, the self-same person who had written the *T. martianus* entry in "Endangered Plants," and something of an authority on the palms of China. He was intrigued as us by the possibility of a field trip to this remote area with a view to re-locating this 'lost' *Trachycarpus*.

We applied without delay but it took 10 months before the permission finally came through. In the intervening period we exchanged dozens of faxes and letters, and sent photocopies of our passports together with full details about ourselves and our purpose. It was arranged that the professor would accompany us, and we would travel to our destination in a rented jeep.

In October 1994 we flew to China, staying in Kunming, the capital city of Yunnan Province. On arrival we checked into an hotel, and the professor and his interpreter called round to introduce themselves. We were up and ready at

7am the following morning when we were collected by the small jeep in which we were to spend many hours and to travel many miles. First, however, there were more permissions and travel documents to obtain so we spent an hour or two driving around Kunming from this office to that. Finally, we were off!

We travelled along a good road for about 45 miles (80kms) to begin with. After that it deteriorated somewhat but was still not too bad. The driver was fast, but careful and confident and we kept up a good speed. We stopped for lunch (chicken with ginger, noodles, pork and rice) and arrived about 6.30pm at Xiaguan where we would spend the night. The following day was similar: an early start, a break for lunch--this time at Wayao--and then on through Liuku, across the Salween bridge where we turned north, and on up to Lubenzhuo. As darkness set in, we arrived at Fugong where we stopped for the night. Early the next morning we set off once more, continuing north along the Salween.

The entire journey was along the river, sometimes high above it, sometimes perilously close to the rushing water, but almost never out of its sight. We arrived at Gongshan at 10.30am and stopped for an early lunch. At 1.30 we set off again and by 3pm had arrived at the village of Binzhongluo, some 600 miles (1000 km) from Kunming. On the way we travelled along deep gorges the river had worn through the ages. It was quite impressive. We were introduced to the head of the village, and with him went on a short walk to the 'Shi Men Guan' ('Stone Gate'), the local name for what Handel-Mazzetti had called the Chamutong Gorge. Here he'd described the river as 'breaking through the band of crystalline limestone'. Within an hour we were there, and through binoculars saw our first *Trachycarpus*, just as he had promised!

There were certainly many *Trachys* there, but also something of a canyon between our vantage point and the Stone Gate itself. As such, we could not get closer to them without a major detour. As it was starting to get dark anyway, we decided

to call it a day and head back to the village. We celebrated with bottles of the local beer and speculated on what tomorrow might bring.

The next morning we were up at 6.30, before sunrise and even before cock-crow! After breakfast we left with a local guide and headed off in the same general direction as yesterday, but then descended to river level, following a clear path through farms. The river itself is jade green in colour and quite smooth though rather fast-flowing. Soon we saw *Trachycarpus* growing on the two high, sheer faces of the opposing cliffs.

Together, the sheer cliffs with the river at the bottom created a thousand foot deep crack in the mountain range, somewhat less than Handel-Mazzetti's '600m' (2,000 feet), but very impressive all the same. There were hundreds of palms and through binoculars we could see just how beautiful they were. At a distance they seemed very close in general appearance to *Trachycarpus martianus*, with erect, slender stems, apparently bare in some of the tall, older plants, and beautiful, spherical crowns, and we could easily understand how Handel-Mazzetti had misidentified them. The tallest seemed to be about 30ft (9m). Most were on the opposite bank, but soon we had the opportunity to examine one more closely as one had recently fallen down near our path.

It had about 5 feet (150cm) of trunk, covered with closely attached, fibrous leaf sheaths of a rather coarse texture. The exposed upper part of the sheath was short and divided into numerous, individual coarse threads, upright at first but strongly reflexed with age, as is the case with the spines formed by the leaf sheaths of *Trithrinax acanthocoma*. Certainly this was very different from *Trachycarpus martianus*, and even more so from *T. fortunei*. However, perhaps the major difference from all other *Trachycarpus*, and certainly the most stunning, is the fact that the underside of the leaves is pure waxy-white. There were no flowers or fruit so more positive identification would have to wait for a while. We took some photographs and measurements,

collected some herbarium material, and then continued down the path, now close to the river. Our guide told us through his interpreter that no palms were to be found north of here, so they were only growing in this one tiny area.

Since 95% of the palms were growing on the opposite, west-facing bank, we had to find some way to cross the river. Fortune must have been smiling on us as we soon came across a dug-out canoe moored at the river's edge. Our guide was dispatched to the nearby village to negotiate a price to ferry us across. While waiting for him to return, we cooked a simple lunch of packet soup on the pebbly river 'beach,' just a stone's throw from hundreds of these beautiful palm trees. The more we looked, the more we saw. What an idyllic spot!

After an hour or so, our guide returned with 4 or 5 Lissu men who had agreed to take us across. We went one at a time, with two rowers, one in front and one astern. It was quite tricky because of the speed of the water, fast-flowing even though it was the dry season. It was a question of paddling slowly until the fast water was reached, then paddling rather quickly so as not to be carried too far downstream. Soon we were assembled, still dry, on the far side and set off towards the palms. The river bank here was composed of pure crystalline limestone; in other words, it was white marble. Over the centuries the river had smoothed and sculpted it into sensuous curves and shapes worthy of Michelangelo. We struggled around the headland and soon we were among the palms. By far the majority were growing on the sheer cliff face, absolutely vertical and absolutely inaccessible. Bearing in mind our experiences with other palms in habitat, we were quite delighted by this fact; it means that they are quite safe from either man or goat. There were a good number growing in the forest where the cliff moderated into a more gentle scree slope at its base, so these could be reached with minimum effort. It was towards these that we made our way, scarcely able to contain our excitement.

For the next couple of hours we went from

tree to tree, admiring, photographing, measuring, comparing and generally having a good time. There were many palms to choose from, each more beautiful than the last, with the white undersides of their leaves giving them a very special appearance. We agreed that these were definitely the most beautiful *Trachycarpus* that we had ever seen.

Their rather open, spherical crowns were attractively arranged and consisted of around 22 regularly divided, semi- to 3/4 circular leaves. After dying, they form a small skirt below the crown before the blade rots and drops off. The slender petioles often stay attached to the trunk for much longer, and this, together with their pale colour, gives the impression from a distance that the trunks are bare. In fact, many of the tall, old plants do shed their leaf sheaths to reveal a ringed, grey trunk.

Many plants carried old, dry inflorescences or infructescences but, to our great disappointment, none of the accessible trees carried either fruit or flowers. Whether they fruited earlier than other *Trachycarpus* or whether it had simply been a bad year (dry?) we did not know, but it was terribly important to find at least some seeds in order to determine if they belonged in the fortunei group (reniform seeds) or the martianus group (oval with a groove). Finally, after grubbing around in the dirt at the base of a tree with a recent infructescence, one of the Lissu came across just two fresh and a couple of empty, old seeds. They were kidney-shaped, meaning that the trees belong in the former group.

We were not really surprised to find that many of the accessible palms had been either stripped of trunk fibre, or had had some of their leaves harvested. A few had even been cut down, as the trunks may be useful for building purposes, and perhaps the 'cabbage' is edible. But, by and large, we felt that the locals were sympathetic and there was certainly no wholesale destruction as we had seen in, for example, *Trachycarpus takil* in India. Even if every accessible tree were to be

cut down, this would still leave the vast majority of the population, some 400 or 500 mature plants in total. We feel that their future is quite secure.

Additionally we were very pleased to see a good number of seedlings, indicating that the trees are reproducing well. This is a very good sign. The seedlings themselves were very pretty with regularly split leaves in the manner of *T. martianus* seedlings which they closely resembled, but with the same waxy-white backs to their leaves as their parents.

After a very happy time amongst these beautiful palms we regretfully took our leave, and one at a time, as before, crossed the Nu Jiang in the dug-out canoe. With many backward glances at the Stone Gate, we departed for the village and the long drive back to Kunming.

The cost of getting up to the site where these palms grow was not insignificant, not only in financial terms, but also in terms of physical effort, time, and patience. Despite this, the pleasure we had in rediscovering Handel-Mazzetti's palm made it all very worth while. Unfortunately, because of the remoteness of the site and the paucity of seeds, it is unlikely that this beautiful tree will get into cultivation. But it is there, and will continue to be so, just waiting for other dedicated palm enthusiasts to discover it for themselves.

Although we were unable to find any flowers, the other material collected by Professor Chen and ourselves is sufficient to show the Stone Gate palm to be clearly distinct from all other species of *Trachycarpus*.

### ***Trachycarpus princeps* Gibbons & Spanner**

Solitary, very lightly armed, dioecious palm to about 10m tall; trunk erect, slender, densely clothed in closely appressed, persistent, fibrous leaf-sheaths, around 22cm in diam. or bare, ringed, 13-16cm in diam.; leaves 18-26, palmate, marcescent leaves few, sometimes forming a small skirt below the crown, petioles often persisting;



leafsheath fibrous, relatively coarse, robust, about 45cm long, abaxially densely covered in pale brown, woolly tomentum; leafsheath appendages approximately 10cm long, very finely divided, upright at first, later strongly reflexed; petiole slender, arching, about 80cm long, 0.8cm high and 1.3cm wide, slightly convex above, triangular below, strongly glaucous, very finely toothed along the margins; hastula shallowly triangular, 1cm long, regular, crested; leafblade, semi- to 3/4 orbicular, 60-80cm long from the hastula, 90-115cm wide, dark green above, wax-white below, regularly parted for about half its length into 45-48 stiff, linear segments, tapering towards the apex from their broadest point; central segments 3-3.5cm wide at the middle, lateral segments gradually more narrow and shorter, apex acute-notched, shortly bifid.

Inflorescences few, solitary, interfoliar, slightly erect to horizontally arranged; male inflorescences about 50cm long, branched to 4 orders; peduncle short; prophyll about 18cm long, very broad; peduncular bract one, around 25cm long, very broad, slightly tomentose abaxially; rachis bracts 3, similar to ped. bracts; rachillae 1-3cm long, fine and very densely branched; female inflorescences about 75cm long, branched to 3 orders; peduncle about 20cm long, peduncular bract one, tubular, 30cm long; rachis bracts 2, similar to ped. bract; rachillae short, 2-10cm, fleshy. Flowers not seen. Infructescence bright yellow when fruit are ripe; fruit small, on short stalks, slightly reniform to almost oval, wider than long, 0.8cm long, 1.0cm wide, 0.75cm high; epicarp very thin, black, with a white bloom; mesocarp approximately 0.1cm thick, spongy-fibrous, coated in a very sticky substance; seed reniform, 0.6cm long, 0.85cm wide, 0.55cm high; endocarp pale beige, very thin, very slightly crustaceous, sand-like layer on a red-brown skin; endosperm homogenous with a deep lateral intrusion; embryo lateral. Germination remote-tubular, eophyll simple, narrow, plicate, wax-white abaxially.

Distribution: China, Yunnan, Nujiang county, 3km NW of Bingzhongluo on the banks

of the Nujiang, on the two almost vertical, bare marble cliffs of the Shi Men Guan (Stone Gate) and below the cliffs in mixed, evergreen monsoonal rainforest on a black, very humose, alkaline soil (pH 7.5-8); 1550-1850m a.s.l.

The specific epithet (*L. princeps*, a prince) refers to the stately bearing of this palm and the majestic way it looks down from its lofty position on the sheer cliff faces.

As there is no recent taxonomic treatment of the genus *Trachycarpus*, relationships of *T. princeps* will be dealt with in a conspectus of the whole genus, which will appear in a later publication.

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## Trekking on the *Trachycarpus* Trail

*...continued from page 13*

a veritable forest of *Pinus longifolia*. Soon we came to a small village where we had the inevitable glass of chai, and from here made our way to the road, where we waved down a truck to give us lift back to Pithoragarh.

So that, more or less, was that. We returned to New Delhi, spending a day or two as tourists, but we had been spoiled by the beauty and grandeur of the mountains, and nothing, not even the beautiful Taj Mahal itself, could compare.

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# Trachycarpus oreophilus - The Thai Mountain Fan Palm

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When Dr. John Dransfield of Kew told us that there was 'a Trachycarpus' growing in northern Thailand that 'needed investigating,' it seemed a heaven-sent way to fill the four spare days at the end of the trip to China we were planning to try to find *Trachycarpus nanus* (Gibbons, M. & T. W. Spanner 1993. 'In Search of *Trachycarpus nanus*.' "Principes" 37:64-72.). John told us that the palm had originally been 'discovered' in the 1920's by A. G. F. Kerr, renowned British botanist (of *Kerriodoxa* fame) and was well known to the Royal Thai Forestry Department, but that it had been mistakenly classified as a *Livistona*. Its description, herbarium specimens (though lacking fruit or seeds), and a black-&-white photograph had languished in the herbarium at Kew until the 1970's when John spotted the mistake. It was certainly a *Trachycarpus*, and in the absence of seed material which might indicate which one, it had been classified as *T. martianus*, which it certainly resembled. This assumption was proven wrong when, in the mid-1980's, some fruits were collected by the Royal Thai Forestry Department and were sent to Kew for inspection. They were reniform (kidney-shaped) as opposed to the *T. martianus*' oval-and-grooved, and a question mark has hung over its true identity ever since. This puzzle could have been invented for us, and we gladly took up the challenge to throw some more light on the subject.

John kindly suggested the names of two botanists in Bangkok who might be able to help us, and a visit to one of them, Weerachai Nanakorn, on our arrival in Thailand led to us meeting Rachun Pooma of the Royal Thai Forestry Department in Chiang Mai, who knew of this palm and was as excited as we were by the prospect of a trip to see it.

He was extremely helpful, meeting us at Chiang Mai airport, accommodating us at his residence at the Huey Kaew Arboretum, and taking us out that first evening for a wonderful Thai meal. The following day, he arranged a 4-wheel drive jeep, complete with driver, and to pick up a couple of guides en route. We set off at 10am, stopping on the way to get supplies for the two days we would be away. We then drove out of Chiang Mai and after a couple of hours turned into a side road, heading for the mountain range, where grew our quarry.

The jeep was very powerful. Rachun sat in the front with the driver, and we sat in the open back on a plank fixed to serve as a seat. However, as we began to climb, the road became so rough and bumpy that we were obliged to stand, from which position we had an excellent view of the changing scenery and vegetation. The temperature fell slowly as we went up, and coconut palms gave way to huge *Livistona*

speciosa (= *L. jenkinsiana*), wonderful and noble trees, growing wild in the forest. This species also grows in north Burma and possibly in south China, and, apart from some minor differences in the fruit and inflorescence bracts, it is hardly distinguishable from *Livistona jenkinsiana* from north-east India and should perhaps be considered synonymous with it. There were also hundreds of bamboos of all shapes and sizes arching across the road, sometimes forming a tunnel. Other interesting palms we saw were the trunkless *Wallichia caryotoides*, and various rattans, all growing in deep shade.

The road became atrocious with deep muddy ruts and areas where the road had been washed away. The 4-wheel drive was quite indispensable as the road was steep as well as muddy. Sometimes the rear of the vehicle seemed in danger of overtaking the front, and sometimes we slipped dangerously close to the edge of the road and a sheer drop.

We continued in this way for some two hours, upward and ever upward. From time to time we saw our destination through the trees: Doi Chiang Dao - a mysterious and extremely steep, relict limestone mountain, separated by time and distance from the vegetation of the surrounding countryside. After this difficult journey we arrived at "base camp," an outpost of the Forestry Department, where lived and worked the forest rangers with wives and children, some 10 to 15 people in all. It was now about 2pm, leaving us without enough time for the climb up, so we would stay the night here and set off in the morning.

There was not much to do, though we did walk for half an hour to a vantage point to have a closer look at 'our' mountain. My goodness it looked awfully steep! With binoculars we could make out hundreds of palm trees silhouetted on its crest. They looked far too exotic to be humble *Trachycarpus*, but that's indeed what they were. On the way we came across some very large *Cycas pectinata*. Some of them must have been hundreds of years old, and were forked and

branched. Back at the camp we had some food and the time passed quickly enough. At about 8pm we retired and slept surprisingly well on the hard and thin mattresses.

We rose at 7am. The weather was quite cool as the sun was only just rising. There were 6 of us in the party: Rachun, his assistant, two forest ranger guides who knew the way up to the top, and the two of us. We set off taking the same path as yesterday. At first the going was quite easy with the path clearly defined, but as we ascended it became less clear, more muddy, and with the vegetation closing in. We climbed up the muddy path, slipping and sliding and hanging on to the plants for support, with tantalising glimpses of our goal appearing from time to time. Up and up we went, around the side of the mountain. It was very steep in parts and very heavy going. After a couple of hours' tough climb, we departed from what little path there was to make a direct assault. At this point the going became even more difficult and we were drenched by the wet vegetation.

What appeared from a distance to be short grass turned out to be 6 feet high. This grass was studded with huge limestone boulders the size of cars, keeping us faced with the dilemma of going around or over them. The palms got closer and closer but they were absolutely on the ridge crest and demanded a high price for access. We aimed for one particular palm whose leaves we could see arising from the far side, and slowly inched our way towards it. The last few metres were over the bare rock itself, where sharp ridges had been formed by erosion. We slowly made our way towards the crest and this tree, but as we reached the edge and looked over, expecting to see a gentle slope on the other face, we saw that the far side was absolutely sheer: a dropped stone would have been in free fall for several hundred feet.

The palm tree that we had chosen was growing from the sheer face of the far side and therefore quite inaccessible. We worked our way with great difficulty along the ridge in an effort to reach some others, and there were many to choose from, but each required an individual



expedition of perhaps 20 minutes, and a slow climb up, over, or around the huge limestone boulders to reach it. Not all these rocks were secure, some moved, some had eroded into huge stones balanced on others. A push would have sent them crashing down.

Well, what of the trees themselves? It must be said that they were quite stunning. They were all growing in the most inaccessible locations on the cliffs and ridges of weathered limestone. We assumed that all the more reachable trees had been cut down for some purpose, and this was later confirmed by one of the guides.

The first striking thing about them was that they had bare trunks, some up to 30 feet tall and rather slender, closely ringed with leaf scars that were faintly visible under a cover of moss and lichens. All the leaves were stiff and erect, forming a dense, upright but rather flat crown with only a few dead leaves hanging below the horizontal. The leafblade, petiole, and the short, fibrous leafsheath apparently decompose soon after the leaf has died, leaving only the thick leafbases persisting on the trunk for 50cm below the crown before they, too, eventually fall.

The atmosphere was very moist, with clouds regularly obscuring the view: an incredible sight with the mountain, the palms, and sometimes the hot, steaming lowlands far below, appearing and disappearing in the mist. Like most of southeast Asia, northern Thailand is influenced by the monsoon and receives copious rainfall in the summer while experiencing a moderate dry season during the winter. We made our way down from this terrible crest to a relatively flat area where we had lunch. We decided to explore another crest - again heavy going - and as we reached the palms we saw that one of them was in full fruit. The tree had five infructescences which did not hang down in the manner of *T. fortunei* but projected out stiffly at only slightly below the horizontal.

It was growing, predictably, on the edge of a precipice that we hardly dared look over. With

some difficulty we collected samples of leaves and leaf sheaths as well as several hundred green but ripe kidney-shaped seeds. The fibrous leaf sheaths are quite notable in that they are short with a rather furry and appendage-less upper margin, and of a fine, rather soft texture, rapidly breaking down. The leaf blade was split to a very regular depth and was carried on a robust petiole, separated from the blade by a long and prominent hastula.

Seeing these characteristics, our earlier suspicions were certainly confirmed: what we were looking at was a new, undescribed species, clearly distinct and easily separated from all other members of the genus. With our collections adding to our load, we began the dreaded return trip, made considerably worse by heavy rain.

After an exhausting journey slipping and sliding down the muddy path, we were on the original track and heading for home, triumphantly bearing the spoils of our expedition. When we finally reached the base camp, we had a welcome cup of coffee and climbed aboard the jeep for the two hour drive down the mountain. What had been mud on the way up had, with the rain, become a quagmire, sometimes axle-deep. The going was awful; there was no shelter on the back of the truck and we were again soaked through. Down and down we went, past bamboo and *Livistona*, miraculously making it safely back to Chiang Mai with no major problems.

Two years later, in 1994, we returned to Doi Chiang Dao and its *Trachycarpus* to explore a few more remote and less accessible ridges and to collect additional material. Though the climb both up and down was exhausting and dangerous, our excitement and pleasure at being able to describe a new species of *Trachycarpus* made the effort and risk well worth while.

### ***Trachycarpus oreophilus* Gibbons & Spanner**

Solitary, very lightly armed, dioecious palm to abt. 9m tall; trunk slender, erect, bare, brown, conspicuously ringed, 10-16cm in diam., in

young plants occasionally clothed in persistent, fibrous leafsheaths. Leaves abt 20, forming a dense upright, rather flat crown; marcescent leaves few, leafblade, petiole and leafsheath soon deciduous, the thick, almost bulbous leafbases persistent at first, covering the trunk for abt. 50cm below the crown, eventually deciduous; leafsheath fibrous, abt. 30cm long, brown, fine, soft, rapidly disintegrating, thinly tomentose below, separated into short single threads towards the apex, not forming an appendage; petiole abt. 50cm long, stiff, robust, 2cm wide near the middle, flattish above, depressedly triangular to rounded below, margins minutely toothed and thinly tomentose, base thick and robust; adaxial hastula prominent, to 3cm long, triangular, acute; leafblade palmate, 3/4 to nearly 4/4 orbicular, abt. 70cm long from the hastula and abt. 100cm wide, leathery, green above, glaucous below, parted to a nearly even depth for more than 1/2 its length into abt. 60 stiff, deeply folded, linear segments, tapering towards the apex from their broadest point; central segments abt. 70cm long, lateral segments gradually shorter to 40cm, apex acute-notched, shortly bifid for a few cm. Inflorescences about 4, solitary, interfoliar, 90-100cm long; staminate inflorescence erect, peduncle short; prophyll 2-keeled, 25cm long; peduncular and rachis bracts five, 15 to 25cm long, base tubular, inflated distally, apex acute; rachillae short; flowers globose, very small; sepals very small, ovate, joined at the base for 1/4 to 1/5 of their length; petals rounded with a blunt tip, 2,5 times as long as the sepals; stamens 6; filaments ventricose; anthers broadly ovate-sagittate with nearly disjoint cells, not apiculate; pistillodes (2-) 3, half as long as the stamens; pistillate inflorescence stiff, slightly arching or nearly horizontal in fruit, densely branched to 3 orders; peduncle abt. 50cm long oval in cross section, 3,5 x 2cm; prophyll 2-keeled, apex acute; peduncular bracts three, 35cm long, long and tubular; rachis bracts two, the basal one 25cm long, similar to peduncular bracts, the distal one small and much reduced; rachillae 3-10cm long, greenish (in fruit); flowers not seen. Fruit on short stalks, reniform, wider than long, epicarp thin, green, not seen when fully mature; mesocarp thin,

fibrous; seed reniform, wider than long, 6mm long, 11 mm wide; endocarp very thin, with a crustaceous sand-like layer of small, irregular scales; endosperm homogenous. Germination remote-tubular, eophyll simple, plicate, papery, 1 cm wide. Seedling leaves narrow, erect and very finely divided.

#### Distribution:

NW-Thailand: Doi Chiang Dao, a large, isolated limestone mountain abt. 70km N of Chiang Mai, forming large colonies on steep, rocky hillsides and exposed cliffs among lichen- and moss-covered shrubs and stunted trees on the mountain's several peaks, between 1700 and 2150m. Recently more colonies have been found on nearby peaks and might extend into N-Burma.

#### Conservation Status:

The Doi Chiang Dao population consists of a few thousand trees and is protected in a forestry reserve. It appears to be in a good state, though all the more accessible sites have long since been cleared of palms by tribespeople, leaving no seedlings and few young plants present.

However, the vast majority of the palms grow in very steep, practically inaccessible sites and as pressure on these stands by man or beast is negligible, their future seems secure. We would categorize it as 'rare.'

*Trachycarpus oreophilus* has only recently been introduced into cultivation. There are no mature palms of this species outside its native habitat. Plants seem to grow very slowly.

The specific epithet (Lat. *oreophilus*, cloud loving) relates to the fact that this palm and its habitat are often totally obscured by clouds.

Note: As there is no recent taxonomic treatment of the genus *Trachycarpus* (but see Beccari, O. 1931. "Asiatic Palms: Coryphae. Ann.

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# Trachycarpus latisectus - The Windamere Palm

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It was Henry Noltie of the Royal Botanic Garden, Edinburgh, who first alerted us to the existence of a strange *Trachycarpus* in Darjeeling, India. He had been in the area during the Edinburgh Sikkim Expedition in 1992 and had noticed a pair of these trees in the garden of the famous Windamere Hotel. He took photographs and collected herbarium specimens, but our later examination of these at Kew provided no clue as to the identity of this palm, other than that it appeared indeed to be a species of *Trachycarpus*.

Several possibilities came to mind: Could they be some kind of hybrid? Or were these the 'real' *Trachycarpus martianus* of Nepal? (For further reference see Noltie, H.J. 1994. "Flora of Bhutan" Vol. 3, part 1. Edinburgh and Spanner, T. W., H. J. Noltie and M. Gibbons. 1997. 'A new species of *Trachycarpus* (Palmae) from West Bengal, India,' "Edinburgh Journal of Botany" 54:257-259). Further, were those we had encountered the previous year in Meghalaya, India (see Gibbons, M. and T. Spanner. 1994. '*Trachycarpus martianus*,' "Principes" 38:89-94.), actually '*Trachycarpus khasyana*' as they were originally described by Griffith in "Palms of British East India" (1850), and, as Griffith believed, a separate species?

There was only one way to find the answers to these questions and that was to visit the palms to see for ourselves. Thus, in November, 1994, during our 'Trachycarpus Asia' expedition, we simply decided to take a side trip to see if we could throw any light on the identity of these

mysterious palms.

First, we spent a week in Nepal where we saw many *Trachycarpus martianus*, both in the wild and in cultivation. It was clear from a close examination of these palms that *Trachycarpus martianus* and *T. khasianus* are indeed one and the same species, so the theory could no longer hold water. Having answered one of our questions, we headed off for Darjeeling to see these unidentified palms for ourselves.

Darjeeling is a most lovely town, an old hill station from the days of the British Empire, still with many colonial buildings and much architecture intact, though in many cases, fading. We were travelling by taxi, having started from Biratnagar on the Nepalese border, and after passing through the town of Siliguri, we began to climb. This hilly road is accompanied from bottom to top by the narrow gauge railway line of the 'Toy Train,' a true miniature locomotive with carriages that brings both passengers and goods to and from Darjeeling. The journey, though fun, is rather long, taking about eight hours. Our Formula One taxi driver, however, took just two.

We reached the Windamere Hotel at 11pm with high hopes as we had read the many accolades and complimentary remarks about it in our guide book ('best porridge in India' for example). Though we had no booking and the hotel was full, a comfortable room was somehow found for us, and we were supplied with hot-



water bottles as at this altitude, 2200m above sea level, it was distinctly chilly, with a slight mist worthy of the lake from which the hotel takes its name. Notwithstanding this, we couldn't wait for the 'boy' who carried up our bags to go so we could explore the grounds and the *Trachycarpus* waiting for us there.

If we had any expectation of being able to identify these two big palms at a single glance, we were much mistaken, and we stood there for some time in the dark, examining them by torchlight. Although a little wind damaged, they were very robust and quite stately looking trees with smooth grey trunks and large leaves, resembling those of some *Livistona* more than any *Trachycarpus* we knew. Eventually we had to admit that we were stumped; we simply knew everything that they weren't. Further inspection by daylight the following morning after breakfast (the promised porridge, eggs and bacon) only served to confuse us more and we continued to be at a loss as to what they could be.

During our brief stay in this attractive town we saw many other *Trachycarpus*, both in the town itself and in the rather disappointing and much neglected Lloyd Botanic Gardens. These were, without exception, *T. fortunei*, and despite *T. martianus* having been reported as growing here (for further reference see Shri Dar, 1994. 'Hunting Out The *Trachycarpus martianus*,' "The Palm Journal" 118:26-30), a thorough search revealed not a single tree.

We left Darjeeling still scratching our heads, and drove to Gangtok in Sikkim, and from there down to Kalimpong. On the way we saw many *Phoenix rupicola* and *Wallichia disticha*, both 'special' palms to us which we were delighted to find.

On arrival in Kalimpong, another pleasant town, we checked in at the Himalayan Hotel and our surprise can only be imagined when, in the garden, we saw another of the Windamere palms! The answer to the conundrum came in a flash: this was a new and undescribed species of

*Trachycarpus*, quite distinct and different from all others. In the following few days we were to see many more, all, it must be said, in cultivation, generally in gardens in and around the town. They were indeed splendid trees with slender trunks to about 8m tall, occasionally even taller. Their numerous, comparatively large, leathery and, for a *Trachycarpus*, shallowly divided, nearly circular fan-leaves are carried on long, robust, unarmed petioles and form an upright, open crown. After dying, the leaves hang down in a small skirt below the crown and eventually drop, together with the coarse, fibrous leafsheath, revealing a smooth, light grey trunk. The leaf is also most notable for its rather wide segments producing a slightly convoluted leaf profile. Some of the segments in the leafblade, particularly the lower ones, are fused for nearly their entire length, in groups of 2 to 4. Many of the female trees carried bunches of oval, flattened, yellowish-brown and eventually blueish-black fruit. The seeds resembled those of *T. martianus*, albeit slightly larger, proving the two to be closely related.

The *Trachycarpus* from this area were certainly not missed by the early plant hunters and have been mentioned by various authors, though always under the name of *T. martianus*. We asked ourselves, how could the unique characteristics, which distinguish them from *T. martianus* from early age on, have been missed, when they had been seen by eminent botanists both in the field and later, as herbarium specimens? Under *Trachycarpus martianus*, Beccari tells us in "The Annals of the Royal Botanic Gardens, Calcutta" (1931) that "...stunted plants have been encountered by Gamble on the Rissom (actually Rissisom; mountain) near Dumsong beyond Darjeeling, at about 1970m, and (by Brandis, in 1879) on the Dumsong Hills at about 2400m." Further, Beccari says that "C. B. Clarke collected ... a young plant of *Tr. martiana* in Sikkim at Rungbong at about 1,200m elevation." Of these two latter collections Beccari states that "the leaves of the young plants are of a rather herbaceous texture (and) have few segments." Of his own



collection, Gamble, in "A Manual of Indian Timbers" (1902) writes, "The writer has once found small plants of what is probably this palm (*T. martianus*) on Rissoom, near Dumsong...." It seems clear that these collections were not of *T. martianus* at all but were of the same species as we had now seen in Darjeeling and Kalimpong, and the fact that it was new and different had been missed. However, when reading between the lines, it does seem that perhaps they were not 100% convinced of the true identity of the plants they had collected. Later examination of some of their herbarium specimens now at Kew confirmed our suspicions: they were identical to those we had come across in the field.

Whilst we were delighted to find this palm in so many gardens in Kalimpong and were certain about its identity, we felt we really had to try to locate a population in the wild before formally describing it as a new species. This was to take another twelve months, during which time we searched high and low in Sikkim and in the Kalimpong district for these palms.

Just a week before our return trip to India in October, 1995, a small population had been found some 20 miles east of Kalimpong, growing on the slope of a steep valley in the Dumsong range of hills near where it had originally been recorded (as *T. martianus*). We travelled back, looking forward with great excitement to what was to be a highlight of the trip.

We had allowed ourselves considerably more time than in the previous year and before our visit to the palms' habitat we spent a day examining in greater detail many of the palms in the town, becoming increasingly optimistic about their attractiveness and suitability for cultivation in other temperate climate areas of the world. Then, finally, the great day arrived and we set off by jeep to see the palms in nature. We travelled east for some 15 miles, then turned off the 'main' road onto a narrow and extremely bumpy track through villages and rice and millet paddies. Finally we could drive no further and proceeded on foot. It wasn't long before we saw the first of

a good number of *Trachycarpus* palms, loosely scattered over a rather steep grassy slope and cliffs overlooking the Relli River, always inhabiting the most precipitous places (Photo 8). Whereas the day before the weather had been cool and misty, today there was hardly a cloud in the sky, and the leaves of our palms were brightly glistening in the mid-morning sun. The palms themselves seemed rather stunted compared with those we had seen in cultivation and their habitat much degraded. We soon learned that the entire slope had once been densely covered with monsoonal forest, of which only a few crippled trees now remained. It needs no great imagination to realize that the palms' habitat used to be much more humid and calm, protected, at least in part, under a canopy of larger trees. Without this canopy the site seemed too dry for them to successfully set seed and for seedlings to establish. Even with this grim reality, it was a most exciting place to visit and we were soon scrambling up and down the slope, taking photographs and measuring the palms. After a happy day we returned to Kalimpong, and then, regretfully, back to Europe. The whole area, including Sikkim proper, is a rich one for palm enthusiasts and we will certainly return.

The following description of this new species was first published in "The Edinburgh Journal of Botany" and is reproduced here in a slightly adapted version to bring it to the attention of a wider audience. Growers and enthusiasts might like to note that seeds and seedlings of this species have been distributed as *T. "sikkimensis"* in the recent past (see below):

#### **"*Trachycarpus latisectus*" Spanner, Noltie and Gibbons**

Solitary, unarmed, dioecious fan palm to abt. 12m tall; trunk slender, erect, bare, light grey, obscurely ringed, (10-)14-17 cm diameter, clothed in persistent, fibrous leaf-sheaths for 0.6-2m below the crown. Leaves (8-)15-25, forming an erect, open crown, some leaves reflexed, marcescent leaves numerous, forming a small skirt below the crown; leaf-sheath fibrous, 30cm long



or more, coarse, abaxial surface covered in pale tomentum, broadly triangular towards the apex, not breaking down into threads; petiole (50-)120-140cm, slender (abt. 2.5cm wide and 1.2cm high near the middle), flat above, slightly keeled towards the leaf-blade, broadly triangular to rounded beneath, margins smooth, sharp-edged, base very thick and robust, abt. 3.8cm wide and 2cm high, covered in pale tomentum; hastula less than 1cm long, broadly triangular, slightly crested; leaf-blade palmate, 3/4 to completely orbicular, 65-85cm long from hastula, 110-135cm wide, leathery, dark green above, with thin whitish tomentum along the folds, slightly glaucous beneath, with clearly visible cross veinlets, nearly regularly divided for less than half its length into 65-75 stiff, linear segments with two inconspicuous longitudinal folds on either side of the midrib, tapering towards the apex from their broadest point, arranged at slightly differing angles, producing a slightly convoluted leaf profile; central segments 65--80cm long, 3.5--5cm wide at middle, with a prominent midrib beneath, lateral segments gradually more narrow and shorter, to abt. 21-45cm long and 1 cm wide, the more lateral segments joined for nearly entire length in groups of 2-4, apex of central segments acute, notched, of lateral segments acuminate, bifid for 1--3cm. Inflorescences 3-6, solitary, interfoliar, branched to 3 orders. Male inflorescence 60-100cm long, spreading; peduncle short; prophyll 2-keeled, apex acute; peduncular bract single, keeled, base tubular, inflated distally, abt. 7cm wide in the distal portion, apex acuminate; rachis bracts 3, similar to peduncular bracts; rachillae short, abt. 2mm diameter, yellowish; flowers globose, 2.5-3mm diameter, yellowish, arranged in groups of 2-4 on short pedicels; sepals ovate-triangular, joined into a fleshy base for lower 1/4; petals nearly orbicular, minutely triangular-tipped, 3 times as long as sepals; stamens 6, slightly exceeding petals; filaments ventricose; anthers broadly ovate-saggitate, blunt; pistillodes less than half the length of the stamens. Female inflorescence 100-150cm long, stiff, spreading; peduncle abt. 50cm long, oval in cross-section, 4.2cm wide, 1.8cm high; prophyll 2-keeled, abt. 30cm long, apex

acute; peduncular bracts 2, keeled, long, tubular, abt. 4.5cm wide, apex acuminate; rachis bracts 3, similar to peduncular bracts; rachillae 5-18cm long, 1-2mm diameter, yellowish-green (in fruit); flowers globose, abt. 1.5mm diameter, yellowish, usually in pairs, subsessile, sepals briefly connate into a distinctly swollen base; petals oblong-orbicular, twice as long as sepals; staminodes 6, slightly exceeding petals; carpels with a very short, conical style, stigma punctiform. Fruit shortly stalked, oblong-ellipsoid, flattened on one side, 16-18mm long, 11-13mm wide; epicarp thin, yellowish-brown when ripe, turning bluish-black; mesocarp thin, fibrous; seed oval-oblong, flattened or shallowly depressed and grooved on one side, 13-16mm long, 8.5-11mm wide; endocarp very thin, with a crustaceous sand-like layer of light brown, small, irregular scales; endosperm homogeneous with a deep, lateral intrusion. Germination remote-tubular, eophyll simple, plicate, to 2cm wide, glabrous.

The specific epithet 'latisectus' (with wide segments) was chosen for this species' unusually wide leaf segments, a characteristic through which it usually can be easily identified and distinguished from other members of the genus.

#### Distribution and Conservation Status:

INDIA: in the foothills of the Sikkim Himalayas in extreme northeastern West Bengal (Kalimpong) and southern Sikkim, between about 1200m and 2440m elevation (Gamble 1902, Cowan 1929, Beccari 1931).

In Sikkim and two locations in West Bengal, the palm has apparently not been recorded for at least 60 years and could not be relocated to date. It is under immediate threat of extinction in the wild with only about 50 plants surviving in what may be its last remaining site on a steep, deforested slope on rocky soil at Mirik Busty on the Relli River between 1300 and 1400m, where it is unable to reproduce. Unless immediate action is taken, the chances for its survival in the wild seem bleak.

Venacular names and Uses:

The following local names have been recorded: Talaerkop, punkah, tarika, purbung, bhotay kucho. The stems have reportedly been used in construction.

Cultivation:

*Trachycarpus latisectus* is a frequently cultivated ornamental in Kalimpong and environs and its future in cultivation there seems fairly secure. Young plants are commonly encountered.

Being cold-hardy as well as fast and easy to grow, it has good prospects of becoming a popular ornamental for temperate and subtropical regions. Seeds from cultivated trees around Kalimpong have been distributed to many growers around the world during recent years as *Trachycarpus* "sikkimensis," a provisional name of no botanical standing, relating to the area of its historical distribution being floristically and geographically known as the 'Sikkim Himalayas'.

Although many growers and enthusiasts may have become familiar with the name *T. "sikkimensis"* in the meantime, we have decided for a number of reasons not to use this name as the specific epithet of this new species and hope we will not have added too much to the confusion already surrounding this genus.

Note: There is no recent taxonomic treatment of the genus *Trachycarpus* (but see Beccari 1931, Kimnach 1977 and Gibbons 1996). Relationships of *T. latisectus* will be dealt with in a conspectus of the whole genus, which will appear in a future publication of "Palms" (formerly "Principes"), the Journal of the International Palm Society.

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## *Trachycarpus oreophilus* - The Thai Mountain Fan Palm

*...continued from page 35*

Roy. Bot. Gard., Calcutta" 13:272-256. and Kimnach, M. 1977. The species of *Trachycarpus*. "Principes" 21:155-160.), relationships of *T. oreophilus* will be dealt with in a conspectus of the whole genus, which will appear in a later publication.

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