The Seven Sisters of India

By Steve Hootman

(*Nagaland, Arunachal Pradesh,* etc.): First half of expedition - NAPE#'s (Nagaland-Arunachal Pradesh Expedition) 001-256. Second half of expedition - KCSH#'s (Ken Cox & Steve Hootman) 0301-0394

This was a combined effort on my part with two separate groups of friends and fellow plant hunters. The first portion was with Kelly Dodson, Sue Milliken, and Garratt Richardson. Among other things we were the first westerners to summit Mt. Saramati (12,600 ft.) in Nagaland, the highest peak in India outside of the Himalaya.

* New species, first introductions, and other notable collections include: the *Rhododendron* species – *macabeanum* (alpine form), *johnstoneanum*, *wattii*?, and *triflorum* var. *bauhiniiflorum*; also *Lilium mackliniae* (Saramati pure white form – probably to be named as a new species).

The second half of the combined expedition was in Arunachal Pradesh with Ken Cox and American explorer Ken Storm, et al. We explored the mountains along the Dibang River and the region along the eastern border of Bhutan. Ken Cox and I also explored the Khasia Hills in Meghalaya.

* New species, first introductions, and other notable collections include: the *Rhododendron* species – *bhutanense*, *kesangiae,* & *flinckii* (all 3 previously unknown outside of Bhutan), *dalhousiae* var. *rhabdotum*, *glaucophyllum* var. *tubiforme*; also *Gaultheria wardii*.

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PLEASE NOTE: Unfortunately, an ***unfinished***, ***unedited*** version of this article was put onto our ***old website*** where it remained for a couple of years (I did not realize it was the wrong version). That version was missing the last 25% or so of the entire transcript. This is the complete and now up to date and fully edited account of my 2003 expedition to Northeastern India. Please enjoy this finished version. We hope to add color photos to this article in the near future. - Steve Hootman

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Part 1: THE QUEST FOR *RHODODENDRON WATTII*

After years of dreaming and many months of planning, I had finally made it; I was climbing the fabled Mt. Saramati. As my small but intrepid group inched its way up the incredibly steep slopes, struggling to keep pace with our machete-wielding porters, I thought back to the very beginning of what was rapidly becoming one of my most adventurous, and difficult, expeditions.

Many of the finest rhododendron species cultivated in our gardens are found growing wild in some of the most remote and forbidding regions on the planet. The isolated mountain known as Saramati on the northeastern Indian border with Myanmar (Burma) is one such place. The exploration of the unknown forested slopes and 12,553-foot high (3,826 m) summit was one of my primary goals in the fall of 2003. This unexplored peak, still unclimbed by anyone from the west, is the highest mountain on the mainland of southeastern Asia (south of the Himalaya). The lower slopes of Saramati were likely to be covered with virgin temperate rain forest and full of poisonous snakes, blood-sucking leeches, thorny brambles and the occasional tiger. Not particularly the best place to find rhododendrons. In contrast, the upper elevations were probably rich in rhododendrons and other ornamental plants, possibly entire forests of big-leaf tree rhododendrons with as yet unknown species hanging precariously from the high steep cliffs. As always, when planning an expedition to a remote and distant frontier such as NE India, the distinct possibility of discovering a new species or two was lurking in the back of my mind.

In a sense, it all began at a typical rhododendron society meeting in Seattle. As I hauled in sale plants and door prizes for the meeting, I was approached by a good friend who said he had something important to discuss with me. I set the plants down when I noticed the very serious look in his eyes. He immediately handed me a check and my eyes widened at the amount of money it represented. With great sincerity he said "I want you to find *Rhododendron wattii* for me". Thus began the long process that eventually led me to the little-known region of northeastern India known as the "Seven Sisters".

My friend's name was Carl Jacobsen, a well-known and respected rhododendron collector and hybridizer residing on Whidbey Island in the Puget Sound of Washington State. We had known each other for years and I had helped him in his quest to collect and properly identify all of the big-leaf *Rhododendron* species. This collection was planted in the new "Big-leaf Valley" at Meerkerk Gardens, also on Whidbey Island, and he lacked only one species – *R. wattii*.

Unfortunately, and very coincidentally, Carl passed away while I was in India looking for his special plant.

Carl was not the only one lacking the little-known and fairly ambiguous *Rhododendron wattii*. The species was not known to be in cultivation. Indeed, there was some doubt as to the validity of its designation as a real species. It was named from and is represented in herbaria only as the original drawing made by Watt when he collected it on "Ching Sow" in "Manipur" at 9,000 ft. in 1882. The species has been placed with *arboreum* by some authorities but, to quote Cox "The seven-lobed and more ventricose shaped corolla indicates that it is better placed in subsection Grandia." He goes on to say "Plants raised from seed collected by Watt at the type locality have a scarlet five lobed corolla….and were described as *arboreum* var. *kingianum* Hook.f. 1900 and are almost certainly hybrids with *arboreum* or *delavayi* and probably *wattii* as parents. The probability arises that *wattii* itself is also a hybrid between *arboreum* and a member of subsection Grandia but there is no evidence to support this. On the unexplored peak of Saramati, nearby, unknown species may easily occur." It looked like I might be headed for Mt. Saramati – a fabled, even "Holy Grail" of a peak that had first been brought to my attention years earlier in discussions with Peter Cox who described it as the ultimate goal in the region.

By an incredible twist of fate, I had already been planning on an expedition into NE India that year, accompanying Ken Cox into the state of Arunachal Pradesh – at the very eastern end of the Indian Himalaya and just north of Nagaland. We hoped to cross a remote pass that had never been explored by westerners. Ken had briefly been on the edge of this region two years before and was excited by what he had found, including possibly two new big-leaf species. After some additional fund-raising, I was able to successfully combine both expeditions. I now had the opportunity of exploring two quite distinct but poorly explored and botanized regions close enough to one another to do on a single round –trip plane ticket.

After a bit of homework utilizing the spare amount of information available about *Rhododendron wattii* and its native range, I was able to narrow my quest to Nagaland, one of the seven states in northeastern India collectively known as the Seven Sisters. Knowing the altitudinal range of the species was around 9,000 ft. and deducing from maps that there were only a few isolated peaks attaining that height in "Manipur" (what Watt would have called the entire Naga Hill region – now mostly within the states of Nagaland and Manipur), I set my sights on Mt. Japvo and Mt. Saramati – the two highest peaks in the region and both in Nagaland. Unable to find any leads on what or where the peak of "Ching Sow" was, even through contacts in India, this seemed the most reasonable course of action if I were to find *R. wattii*, a species that had not been seen since 1882. This would (unfortunately) eliminate the need to visit Manipur proper, but seemed the most reasonable course of action as that state has only a few high isolated ridges that top out at a maximum of between 8,000 and 9,000 ft. in elevation.

The prospect of climbing the famous peak of Mt. Japvo (9,900 ft. – 3016 m) was very exciting, as it had only been climbed a few times by westerners due to its remote location and decades of political turmoil. Climbing the elusive and isolated Saramati was even more so. It lies on the border with Myanmar (Burma) and had never been climbed by a westerner. Indeed, it was not until the early 1940s that this rugged peak was even climbed by the native Naga people. Frank Kingdon Ward climbed Saramati to around 10,000 feet in 1935, but from available records, it does not appear that he made it to the summit at 12,553 feet. Here is an excerpt from his field notes on that day "KW 11,175 Rhod. Macabeanum. A hearty looking tree, bulky rather than tall,

often gregarious. Flowers clear yellow in fine trusses − quite one of the best yellow-flowered species. March-April. Saramati Peak, 9,000-10,000 ft., Naga Hills, Assam." No other collections seem to have been made on Saramati, by KW or anybody else - it remained ripe for the picking.

Mt. Saramati sits in the heart of the territory controlled by the rebel Naga army, so the Indian government has been reluctant to allow westerners into the region for many years. For this reason, among others, I had very little hope of actually gaining access to this restricted and exceedingly remote area. Even with the recent easing of tourist restrictions in the Seven Sisters there are still strict limits set for all western visitors, and I would not in any case be allowed to enter Nagaland on my own. To gain a permit one must travel in a group of at least four people or as a husband and wife team, always under the keeping of a licensed tourism agency. As my wife is not insane, I asked some close friends if they were up for an adventure. Fortunately, I found three excellent traveling companions – Garratt Richardson, a doctor and friend from Seattle with whom I had traveled previously, and Kelly Dodson and Sue Milliken, good friends who ran a nursery in Port Townsend, Washington. They had also been on a plant hunting expedition previously, and so had some idea of what to expect.

Fortunately, I was able to utilize the same contact that Ken Cox had used previously in Arunachal Pradesh to organize the in-country portion of this expedition. Our group was among the very first customers for his fledgling adventure tourism company. He and his people were very cooperative and efficient in getting our travel arrangements organized in Nagaland. He would also be organizing the second half of the expedition, when I would hook up with Ken Cox and the rest of the Arunachal Pradesh expedition members. Eventually, after months of research and correspondence, the itinerary was set. The four of us would have two weeks together in Nagaland before moving on to Arunachal, where I would split off from the other three, and be replaced (still had to have four people!) by another friend – Cody Toal. The four of them would then continue on to the Tawang and West Kameng Districts of Arunachal Pradesh along the eastern Bhutan border to complete their four-week itinerary.

The Seven Sisters of India are the seven relatively unexplored and isolated states in the very northeastern corner of India, including Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. This remote, extremely rugged and mountainous territory (except for Assam), better known to the world as the North-Eastern region of India, was closed to foreigners for many years. It borders Tibet, Bhutan, Bangladesh, and Myanmar. Even today, this area is rarely visited by foreigners, and still contains many tribes and ethnic groups relatively untouched and unknown to the western world. In their isolated villages and communities, they continue to pursue their way of life and perform their ancient rituals, much as they have for centuries. Numerous insurgent groups operate in the remote mountains and deep jungles of this region, with various factions controlling large territories as the de facto government. The object of many of these groups is independence from India and autonomous statehood. Little is heard in western newspapers of the ongoing and probably fruitless, but often violent, struggle for the independence of these long-isolated and independent peoples. The more romanticized and well publicized Chinese invasion and takeover of the independent nation and people of Tibet tends to overshadow what it happening in India, although the situations have much in common.

It is largely because of this continuing insurgency that this region has been largely off limits to western tourists. Recent peace talks and even cease-fires have allowed the Indian government to

begin easing up on the restrictions in many areas, and tourism is being promoted, although it is probably still a bit rough for the average tourist.

You can access the Seven Sisters via air through either Delhi or Calcutta; I had been to Calcutta on the way into Sikkim on a previous expedition so I decided to fly into Delhi. The heat, humidity and air pollution of the Indian capital were, as expected, a bit of a shock to us "Seattleites", but definitely a good primer for what lay ahead. From there it is a short hop to the city of Guwahati on the banks of the mighty Brahmaputra River. Guwahati is the northeastern region's largest city and capital of the state of Assam. It would be difficult to describe the excitement coursing through my very core as our plane descended into the lush tropical landscape surrounding the sprawling city. The verdant rounded hills and flat fertile floodplain seemed, from above, to represent every shade of green I had ever imagined. Everything was green, the dense foliage of forests and crops covering every bit of land, right to the banks of the huge, multi-channeled river dominating and feeding the fertile landscape. The snow-capped peaks of the Himalaya framed the distant panorama, and the exotic city of Guwahati lay spread out before me. I was thrilled to be in Assam, a completely new region for me. My hopes and spirits were skyrocketing.

As planned, we were met at the airport by our in-country expedition organizer, Oken, and his partner Kattu. Oken, who had great connections in the region, had made all of our arrangements and acquired all of our (often difficult to obtain) permits. He was a young man with an easy smile and a great impersonation of Elvis. He carried his guitar with him as we traveled and would sing to us whenever possible. He knew an amazing number of American and British pop, rock and blues songs. Kattu was also several years my junior, and was markedly more taciturn. He quite ably led our field work, accompanying us on all our treks. They were both members of the Adi tribe, an ethnic group native to Arunachal Pradesh. The Adis were famous and had well-earned reputations for their skills as hunters and warriors. With little time to waste in our tight schedule, we quickly began our journey into Assam - destination Nagaland.

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Part 2: NAGALAND – MT. JAPVO

As we drove through the beautiful and lush tropical scenery of Assam, dominated by rice paddies and the massive monsoon clouds high overhead, I discussed our plans with Oken. Over the previous several months, he had tried to persuade me to give up in my efforts to explore Saramati. None of them had ever been there before, and a German had been kidnapped by the insurgents just a few months earlier. He described it as "too dangerous and difficult and unlikely to succeed". These things often turn out to be much less "scary" than they are made out to be, however, and with a bit of luck and perseverance it seemed there would be a good chance we would be allowed to try to reach Saramati following our trek up Mt. Japvo. Things were looking up.

The state of Assam consists primarily of the floodplain of the Brahmaputra and the associated rich soils laid down by the annual flooding of its shallow, braided channels. In modern times, most of Assam is used for agriculture, with rice and tea being the most common crops. Historically, much of Assam consisted of large marshes with tall grasses interspersed with tropical rainforest. Great herds of animals roamed the wilderness, including the Indian

rhinoceros, Asian elephants, the native, huge and deadly wild buffalo, tigers, leopards, many kinds of deer and other herbivores, and a multitude of smaller mammals, reptiles and birds. Virtually all of this has been replaced by agriculture in the past 100 years, and only small isolated pockets of wilderness and its associated flora and fauna still persist. Fortunately, the Indian government has preserved many of these areas as National Parks. It was a "resort" on the border of one such park that would provide our lodging that evening.

The Wild Grass Resort is a comfortable "safari-type" field resort providing lodging and meals to visitors of the adjacent Kaziranga National Park, home of the largest population of wild Indian rhinos left on the planet. At Wild Grass, you can organize an elephant ride that takes you on an early morning excursion into the marshes inhabited by the rhinos. Regrettably, we would not have time for such a treat. Late that evening, in the comfort of my bed, surrounded by rhinos, elephants, cobras and even possibly the rare Bengal tiger, I was awakened by the drumming of the steadily pounding monsoon rain. Alas, this would not be my last encounter with the fabled Indian monsoon.

We left early the following day, the ground and plants soaked and dripping with the remains of the evening's downpour. We soon left the valley, the road winding into the surrounding hills, lined on both sides with lush vegetation and sporting the occasional "Danger - Elephant Crossing" sign. In the distance, the Naga Hills loomed. If the road and our vehicles held out, we would be well into Nagaland early that afternoon. For lunch, we stopped at a roadside Naga restaurant for our first taste of authentic Naga food. Rice, of course, is a staple. In addition, fresh cooked vegetables and spicy curried mutton (fresh goat) as well as chicken, are regular entrees. I have to admit that I always enjoy eating goat and this was some of the finest goat that I have had the pleasure of having devoured – very spicy and dripping with greasy sauce. Too many times have I climbed seemingly remote and inaccessible mountains and cliffs in search of rare plants only to find goats happily munching what I had traveled thousands of miles to photograph and study. It was my turn to do a little happy munching. Unlike China or many other places in the east, there are no chopsticks or other eating utensils; all food is consumed using only the right hand. The left is reserved for less delicate matters and one has to be careful to keep it safely under the table. At the end of each meal, you are presented with a bucket of water and (hopefully) a bar of soap outside the establishment or home to wash your dripping hands and face (a tap and sink are used in areas with indoor plumbing). Eating rice and juicy sauces with your hand takes a bit of practice but is actually quite efficient and fun once you get the hang of it.

Having arrived at the Nagaland border city of Dimapur, we were stopped for inspection by the well-armed border patrol. Such things are not taken lightly in Nagaland and surrounding areas due to the frequent bombings and other sorts of violence perpetrated upon the military and government establishments by the various factions of the Naga rebel army. After questioning and document checking we proceeded on to the city of Kohima where we would headquarter for the next few days. Kohima is one of many British hill stations throughout India, remnants of the colonial era. It is situated at about 4,600 feet in the Naga Hills, and is much cooler and more temperate than the surrounding low-lying areas. In the past, the tea plantation owners and various other British colonialists would retreat to this and the other hill stations during the stifling heat, humidity and pestilence of the summer monsoon. Kohima was a lovely little city, reminding me of Darjeeling, only with none of the tourist affectations, or the tourists! We stayed in a well-managed mini-resort near the base of Mt. Japvo. The owner turned out to be Chinese, and proved an excellent chef. In the Kohima market we enjoyed a myriad of strange and colorful fruits and

vegetables, including a great assortment of peppers, which are used in virtually every culinary preparation. In addition, buckets of snails, frogs, fish, turtles, eels and other denizens of the local freshwater lakes were offered for sale. Most disconcertingly for some members of our group was the table covered with fresh dog meat, still on the bone. We were not served any pooch curry or similar popular Naga delicacies during our trip, at least as far as we knew. Since we were not really that far away from the Salween river region in Yunnan, along the opposite (eastern) border of Myanmar, and the general ecology was very similar to what I was familiar with there, I had a good look around for the hornet larvae and pupae which were always a gustatory highlight for my trips in that region. As it was autumn, they should have been in season. Sure enough, in the very back of the market, I spied a large table covered with waxy combs, all full of wiggling little white morsels. I purchased 500 rupees (about $10) worth, and took them back to our Chinese chef for the evening meal.

The next day we began our climb to the summit of Mt. Japvo. For the first hour or so, we slogged our way up through the corn fields covering the lower slopes, the hot sun baking our skin. Each porter and guide carried a dao (a short machete carried by everyone in the mountains and used for virtually everything), which was used to clear the path ahead of us. The track became even steeper and quite slick as we finally entered the forest. I was impressed with the size of the trees; the forest on this sacred mountain had obviously never been cut. Immense evergreen oaks and magnolias reached at least 150 feet into the sky. The gloomy forest floor was covered with ferns and other shade loving plants, all growing luxuriously on the incredibly steep slope. One or two snakes were spotted but we had no real trouble with them. As expected, the leeches were abundant where the herbaceous flora grew thickly, but overall circumstances were not too bad. All too soon, we stopped for the day, having reached the small covered structure at 6,700 feet that would be our home for the night. It was built to shelter the trekkers who would leave in the wee hours of the morning for a predawn ascent of the peak. If the weather cooperated, they would be treated to what must be a stunning sunrise over the surrounding Naga Hills. In addition to the high altitude, it was an extremely rough, steep and slippery track to the summit at 9,900 feet. We were a bit chagrined to learn that the locals could do the entire hike in just a few hours *in the dark*. The forest immediately surrounding the trekkers hut had all been cut for fuel and so had grown up into a mass of dense, high weeds, covered with leeches. We were effectively isolated except for the path on which we had come, and the path upwards to the summit. We were told that the world record tallest rhododendron grew on the mountain, but, as it was a three-hour hike each way through the jungle, with a poor track, and we were running short of time in the afternoon, we declined the offer to seek it out. (At that altitude, it almost definitely had to be a specimen of *arboreum*.) I was skeptical of its record-worthiness anyway, having seen a grove of *R. protisitum* in the southern Gaoligong Shan of Yunnan that had at least one massive old specimen well over 110 feet high.

Instead of the tall *arboreum* trek, we did a quick hike up to around 7,700 feet, reaching a narrow ridge covered with a forest of *Rhododendron arboreum*. It was a fantastic setting, with the trees attaining heights up to 50 feet and the forest floor beneath covered with a solid carpet of ferns. A dense mist filtered through the trees, limiting our view but providing a perfect setting in the primeval forest. On one fallen *arboreum* tree I counted four species of epiphytic evergreen blueberries (*Vaccinium* spp.). The *arboreum* throughout this region varied tremendously although most, based upon their foliage, appeared to be intermediate between the eastern ssp. *delavayi* (mostly in SW China) and the east Himalayan ssp. *cinnamomeum* var. *roseum* found mostly to the west. Many specimens somewhat resembled the southern Indian ssp. *nilagiricum*,

which is considered by H. H. Davidian also to be native to the Naga Hills (he actually places the mysterious *wattii* in synonymy with this subspecies). Personally, based upon my own, admittedly limited, observations, I see little sense in trying to tag a name on any of this intermediate material, although specific specimens could be selected out as fitting the "type" for a given taxon. Scattered among the *arboreum* were isolated specimens of the rare *Rhododendron elliottii*, the Indian version of the more familiar and widespread Chinese species *R. facetum*. This species is endemic to the Naga Hills, and is widely admired by gardeners in mild regions such as northern California and New Zealand where it is a "standard" species in good collections. It is a late season bloomer with bright red flowers that are considered to be among the finest of their kind in the genus.

The scattered, relatively isolated mountains and high hills in this region exhibit the characteristic endemism well documented in the study of island biogeography. In a sense, the tops of the higher mountains are temperate islands in a "sea" of subtropical flora. As in isolated oceanic islands, this often leads to the development of endemic species, in other words, species that are found nowhere else. *Rhododendron arboreum* ssp. *zeylanicum* is a classic example of this in the "rhododendron world". It is the only species native to the island of Sri Lanka and is found nowhere else, having become isolated from its relatives on the Indian subcontinent as rising ocean levels swallowed the land connecting the two regions. Over the millennia it has evolved into a distinct subspecies of the widespread and variable *arboreum*. The rhododendrons *elliottii* and *macabeanum* are perfect mainland examples, known only from the upper reaches of the mere handful of peaks in the Naga Hills high enough to support temperate rhododendrons. The record is unclear, but perhaps in prehistoric times ancient *Rhododendron* species and species swarms occurred over vast areas of this region. As plate tectonics and climate change took their toll, various outlying populations became separated from the main regions of *Rhododendron* dispersal and diversity. The Naga Hills, for example, have become completely isolated from the main range of the Himalaya by the massive floodplain of the Brahmaputra. Isolated species such as *macabeanum* bear an obvious relationship to their close relatives in other regions, but, after millennia of isolation on their high peaks, surrounded by inhospitable rainforest and deep steamy valleys, they have differentiated into distinct taxa, separable from their relatives by often obscure but important morphological characteristics. Most of what we were seeing on our late afternoon hike were examples of this.

The following morning we began the long hike to the top of Japvo, soon reaching the forested ridge that we had briefly explored the previous afternoon. As we continued up the ridge we came to our first *Rhododendron macabeanum* – I was thrilled. Very few living people from the west have ever seen this well-known and admired species in its native habitat and I felt honored to be among those few. I have to admit that I was a bit relieved to see that the wild species looked very similar to what we were growing as such back in the RSBG. After their initial introduction from the wild, popular species such as *macabeanum* tend to become "tainted" through the generations of cultivation. This is especially true of species such as this one − a big-leaf, typically grown from seed as the most efficient method of obtaining new plants, and one that has not been reintroduced from wild populations often (or at all) to "purify" the stock, as it were.

As we continued to gain elevation, the *macabeanum* became more and more common, eventually forming the dominant overhead canopy, some massive old specimens reaching forty feet or more in height with bole diameters up to two and one-half feet. Also interesting was the fact that the bark was very similar to that of the Himalayan species *falconeri*, reddish-brown, smooth and

peeling. I had not expected this feature − you do not see many tree-sized specimens of *macabeanum* in cultivation! We eventually found this species, and virtually every other species on the mountain except for *arboreum* and *elliottii*, all the way to the summit of the flat-topped peak.

The trail became quite steep and tricky, with a great deal of boulder scrambling and cliff climbing as we continued to gain elevation. The flora was rich with a great assortment of both woody and herbaceous plants. The rhododendrons that we observed on the mountain were what I had expected to see, since they are quite well-documented. In addition to the already mentioned tree-like species, *arboreum*, *elliottii* and *macabeanum*, the shrubby taxa known to occur on this peak, and on a few other similar high peaks in the Naga Hills, were *maddenii* ssp. *crassum* (formerly *manipurense*), *johnstoneanum*, *formosum* var. *formosum*, *formosum* var. *inaequale*, *triflorum* var. *bauhiniiflorum* and the tiny vireya − *vaccinioides*. We managed to find all of these, except the two taxa of *formosum*, on the mountain. Most are endemic to NE India, and specifically to the Naga Hills. I had hoped to find one or more other species not previously recorded there, but which were distinct possibilities, *edgeworthii* or *lindleyi* for example, but no such luck. I was very excited to find *johnstoneanum* since subsection Maddenia is a group in which I have a strong interest and this species had not been seen in the wild since Frank Kingdon Ward went through the area in 1927. This is one of the hardiest members of the mostly tender subsection Maddenia, and indeed it occurred at the very summit – 9,900 feet. This species has broadly elliptic, almost rounded leaves with bristly margins. The large showy flowers are typically white to pale yellow, often with a yellow blotch and/or a reddish flush. Equally hardy is the plant now known as *R. maddenii* ssp. *crassum* Manipurense Group – formerly known as *manipurense*. Plants in the RSBG have survived temperatures as low as +5 F. Manipurense Group represents the Naga Hills version of the variable species *R. maddenii*, a widespread taxon which occurs from eastern Nepal through the eastern Himalaya into southwestern China and into northern Vietnam. Manipurense Group is distinguished by its large glossy foliage and large, pure white fragrant flowers. It was also present on the very summit of Japvo, and should be hardy in those gardens located in relatively milder regions, such as the RSBG for example. Both of these taxa are endemic to the region.

R. triflorum var. *bauhiniiflorum* is another endemic to the Naga Hills, and is distinguished from the Himalayan type by its larger, saucer-shaped flowers. It also has not been re-collected since the days of Kingdon Ward, so I was very happy to find it in the wild. The *vaccinioides* grew as an epiphyte in the *arboreum* trees, closely resembling many of the epiphytic members of the genus for which it was named, but easily distinguished from them by the scales on the lower surface of its leaves.

The final bit of hiking required to reach the summit of Mt. Japvo consisted of a vertical cliff about 30 feet high. To reach the flat table-like mountain top, we had to jam our feet into a narrow crack and pull ourselves up. Not at all easy, and indeed, a bit scary and stressful (and a little bit of fun – at least for me). Kelly actually took his boots off and went barefoot so as to provide a better grip on the smooth rock face. The top was covered with a dense green thicket of *Gaultheria fragrantissima*, growing much like our west coast native salal (*G. shallon*) and interspersed with various rhododendrons and other shrubs. The sides of the peak dropped straight off into seemingly inaccessible cliffs, the distant depths hidden in the thick mist rising from the temperate rainforest far below - a magnificent setting. Unfortunately, the tops of the surrounding mountains were shrouded in clouds, preventing us from enjoying what must be a stunning view

out over the Naga Hills. After a quick lunch and rest we began the long journey back down to the valley.

The next couple of days were spent visiting local Naga villages and preparing for our attempt at the main goal – the summit of Saramati. We visited with many dignitaries and enjoyed the occasional small party in our honor. It is interesting to note that the state of Nagaland is full of Christians, the vast majority of the Naga people having been converted to Christianity in the middle of the twentieth century when Baptist missionaries from the US visited and set-up churches. Because of this, the state of Nagaland is now "dry", with all sales and consumption of alcohol strictly prohibited. I was quite irritated by this. We were not even allowed to have a beer with our evening meal and, when hosting guests for an evening drink or two, we were forced to stay in our hotel rooms. Of course, there was still a great deal of drinking going on in Nagaland, most of the beer and liquor coming in illegally from Manipur. One of the first things asked of me by our local Naga guide, Beto, upon our arrival several days earlier was "you are Christians right? You believe in God right?" While none of the four of us are even remotely religious, I think he actually would have refused to take us up Japvo if we had not assured him that we were not devil worshiping heathens!

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Part 3: NAGALAND – MT. SARAMATI

I remember the drive to the Nagaland/Burmese frontier as being one long mad dash along twisted roads, up and down the Naga Hills. At one point we passed through the northern tip of Manipur where we stopped at some road-side stands and enjoyed fresh pineapple, guava and the amazingly tasty small bananas that one typically gets in the outback of Asia. The heat was oppressive and we all looked forward to climbing into the high mountains once again. The occasional flat tire allowed us to enjoy the great scenery as we passed through the hills. Frequent military checkpoints also provided us with abundant time to stretch out and enjoy the scenery as our trucks were searched and our papers examined. We were heading more or less east toward the city of Kiphire and then on to the town of Pungro where we hoped to spend the evening. In Kiphire we had our spares repaired and fuel tanks filled for the last time before heading into the hilly and densely forested frontier region along the border with Myanmar. This area is considered, even by Nagaland standards, to be very remote, and is the home of the rebel Naga army – an unknown element in our plans.

We were now traveling with our local Saramati guide, a young fellow aged 21 who had grown up on the slopes of Saramati, and who spoke a bit of English. His name was Tsepentau, and he was hoping to promote tourism in his region. We were his first customers so he was most eager to make our venture a success.

From Kiphire, it was still a long drive to the small town of Pungro. It was now quite late and had become quite dark, so Tsepentau decided to take a "shortcut". We suddenly dropped off of the main road onto a deeply rutted, muddy dirt path completely overgrown with thick brushy weeds taller than our vehicles. We pushed through at a surprisingly fast pace, the tall weeds and grass being pushed aside or run over were the only things visible in the glaring illumination of our

advancing headlights. The whole episode reminded me of a night-time safari in the African savannah, and I kept expecting to see rhinos and elephants highlighted in our dazzling bouncing headlights, their eyes wide in shock at the audacity of our intrusion. At a large river we all got out of our vehicles and walked across an old wooden hanging bridge, staring behind us in anticipatory dread and a strange fascination as the vehicles slowly inched their way across, the truck lights reaching into the darkness to meet the small glare of our puny headlamps. We continued along the overgrown dirt track for the next hour or so, becoming seriously stuck at least twice. I have great memories of the fun we had in the pitch black of the night with our headlamps illuminating the furious digging and pushing as we all struggled to release our vehicles from the deep sucking mud – the reggae music of Bob Marley blasting from the cassette radio. I am still not sure if our shortcut got us to Pungro any earlier, but that drive certainly stands out as one of the highlights of all my trips.

We arrived in Pungro late that night and stayed in the Guest House on the top of the hill in the center of town. Guest Houses are available in most towns in India and are built to accommodate visiting government agents, dignitaries and the like. With no electricity available, we lit candles and awaited the local officials who were walking up the hill to meet with us. Such meetings are commonplace and part of the daily ritual when traveling in such regions. They often involve group photos followed by lots of toasting and drinking of whatever the popular local firewater might be. That evening we were told that we were the first westerners to come here with the intention of trying to climb Mt. Saramati.

We awoke early to mostly clear skies with the mist-shrouded and rounded summit of Saramati dominating the distant skyline. It did not look very imposing from our then reasonably comfortable point of view. We had another long meeting with about 20 members of the local government, all wearing their brightly colored red Naga blankets as shawls. We received their blessing and permission to continue forward. Earlier, at the crack of dawn, Tsepentau had taken a vehicle on ahead to the village of Sulami, the local headquarters for the Naga insurgents, about three or four hours drive away on the rough roads. In Sulami, he would, we hoped, successfully negotiate our entering their territory and climbing Saramati, which lay in the heart of their region of control. After several hours, Tsepentau returned with the good news that we would be allowed to drive to Sulami. We immediately left Pungro and began the next step in the long process of exploring this unknown region.

Outside of Sulami we were stopped by several members of the rebel army. They were all stern of face but well-dressed and groomed in military uniforms, and with plenty of weapons at the ready. We were questioned for several minutes, and the vehicles were once again searched as they checked our documentation. Kattu motioned with his hand to draw my attention, pointing far up the steep slope to where we could see several soldiers standing alertly on guard, their rifles aimed straight at us. We were told not to photograph or go near their encampment, which was barely visible among the trees on a neighboring hilltop. It was all very exciting, but I have to admit somewhat anti-climactic for me personally, since I had thought they would be even less willing to allow us into their territory. Obviously, Tsepentau had done some fine preparatory work in the preceding weeks (and there was probably quite a bit of money changing hands here and there).

Again we were taken to the home of the “Mayor”, where we met with the most important local officials and received their blessings to proceed. The Mayor’s home was a small wooden

structure with faded government and western pop culture posters lining the rough-hewn interior walls. Skulls and the attached massive beaks of the rare hornbill hung from the door jam alongside various pelts and horns. While we talked, a fine Naga meal was prepared. The hot curried goat was excellent, as were the spicy string beans and rice. We would be getting by on basic camp food for the next several days, and so particularly enjoyed this fine meal prepared for us. After lunch, our porters began to gather. As always in these situations, there was a great deal of shouting and milling about as the wages were renegotiated and the loads were lifted and assigned based on weight and pay. Finally, we were ready to begin the long trek to the summit of the fabled Mt. Saramati.

Our goal for the day was to reach the village of Thanamir at around 6,000 feet in elevation. In Sulami we were starting at 4,000 feet, so we would not be gaining all that much elevation on our first day. Unfortunately, we would have to descend quite far down in elevation to cross the river that separated the ridge we were on from the actual mountain of Saramati. After crossing the hanging cable and bamboo bridge we had a final arduous, steep and muddy hike up to the village, reaching Thanamir in the late afternoon.

Thanamir was a typical small agricultural village, with pigs and chickens running around the village center. It was the home of our guide Tsepentau, who had obviously had the entire village busy in making preparations for our visit. We were the first westerners ever to visit these people. The dirt paths had been swept and a new pit toilet was revealed with great pride. We were told that we would have the honor of staying in the home of the village headman, Tsepentau's brother. While this was indeed an honor, and not to be lightly disregarded, we were a bit disappointed as it is generally much better to stay in one's own tent whenever possible in such situations. We acquiesced to the invitation, however, and, after a festive evening with singing, dancing and plenty of local rice beer, we tucked in for the evening. Kelly and Sue were provided with a small room in back, as was Garratt. I stayed out in the entry room with our guides and was given the "good spot" on a short table in the back corner. With my legs hanging over the end I hoped for a decent night's sleep, knowing that tomorrow would be a long arduous day. Later that night, the short table and nonstop attack of small biting things notwithstanding, I was awakened from a fitful sleep by the tug of a rat chewing on my obviously tasty hair. My sudden movement startled it onto the wall, and I could hear it scurry away. Anxiously looking forward to the break of dawn, and now wide awake, I pulled on my camp shoes and grabbed my jacket. A spectacle that I will never forget greeted me as I stepped outside − a multitude of stars such as I had never seen. The utter calm and complete quiet of the sleeping village was accentuated by the massive thunderclouds draping the distant hills. Their silent lightning flashed almost continually as I stared in awe at the majestic Milky Way arching high overhead in the clear sky surrounding Saramati.

In the morning we packed up and began our journey to the summit. In addition to our new set of about twenty porters, we were accompanied by our lead guides Oken and Kattu and their assistants, our local guide Tsepentau, and five members of the "village guard" – young men in uniforms with ancient rifles who were to protect us from marauding Burmese and tigers should we encounter any. Of course this was a rare chance of adventure for the young village fellows and they spent the majority of the trek drinking and shooting at anything that moved. I am not sure what would have happened had we actually met a contingent of Burmese soldiers on the summit. Altogether it was quite a group heading into the bush! The trail from the village led straight up the mountain through agricultural fields hacked from the dense vegetation, a practice

called jhum. It quickly became quite hot and humid and we were happy to reach the shade of the native forest after less than an hour of steady uphill climbing. From here the trail rapidly deteriorated and we sent two fellows ahead to hack a track through the jungle with their daos (native machetes). As we pushed forward, the forest became ever more primeval, with no signs of human activity. I began to believe the reports of native tigers. Massive broad-leaved evergreen oaks, magnolias and a multitude of other genera dominated the thick temperate rainforest. Huge trees of the fall-blooming *Schima wallichii* towered up to 150 feet into the air, their white camellia-like flowers strewn across the dark forest floor.

We continued along the rough-hewn track being forged by the string of people ahead of us, seemingly gaining little altitude as we worked our way deep into the mountains. The slope was so steep, with very little in the way of footholds, that we clung to rocky outcrops and vegetation to keep ourselves upright, each of us sustaining a few major falls and scrapes along the way. This was much more difficult than what we had experienced on Mt. Japvo, and made even more so by the rain that fell off and on throughout the day. After a long slippery and strenuous morning in the dark rainforest, we finally gained enough altitude to start noticing rhododendrons and other familiar plants. The tall broad-leaved evergreen trees were replaced by smaller scrubby growth and rhododendron forest. Our old friends from Mt. Japvo were all there – *elliottii*, *maddenii* ssp. *crassum*, *arboreum* (in a multitude of forms) and *macabeanum* were all common. I was acutely aware that this was the place to find *R. wattii* if it was possible to find it anywhere. I noticed the occasional large-leafed hybrid in groves of *arboreum*, itself, as I have mentioned, running the gamut from ssp. *cinnamomeum* var. *roseum* to ssp. *delavayi* to specimens resembling ssp. *nilagiricum*, a taxon endemic to distant southern India. These hybrids were obviously the result of *arboreum* x *macabeanum*, those species being the only possible parents in the area, and the resulting hybrids of this cross having observable characteristics of both parents. Closer examination revealed that, with a bit of tweaking and assuming (I had no flowers of course) this could easily match the rather limited description of *wattii*. I had probably found the long lost "species". I collected a bit of seed to grow on for study and to verify my identification. Deep down, I still hoped to find a remote ravine full of "*wattii*", but my hopes were quickly fading.

In addition, my hopes for a long, or even short, list of new species were also being dashed as we gained altitude and the *Rhododendron* flora remained familiar. It is, of course, much easier to spot rhododendrons in the spring when they are blooming, and I may have overlooked some interesting material, but, as my old mentor at the Morton Arboretum used to say about me – I don't miss much. Unexpected specimens of the ubiquitous *mekongense/trichocladum* added a slight extension to the known range of that species complex. Another new taxon that we had not seen on Mt. Japvo was a small compact lepidote growing among the occasional exposed outcroppings. I was unsure what to make of this in the field, and collected a bit for further study under better conditions. I labeled it "aff. *saluenense* or *species nova*?" It was later determined by Peter Cox, based upon its short deflexed style, to be nothing more than *lepidotum*, another ubiquitous species which, together with *mekongense*, would cause little excitement in the heart of even the most ardent rhododendron aficionado.

As we continued to gain altitude, we began to scale cliffs and scramble along ledges, our guides often cutting vines to help us along the trickier bits. At one point, inching along a very narrow ledge, I came upon a group of our porters chatting and laughing (they of course had no difficulties navigating the slopes, even with heavy loads on their backs and no shoes). They had stopped above a steep landslide chute and a couple of them were pointing down the slope. I

asked one of our English-speaking guides what they were all excited about, and was told that the previous year, some of these same villagers had been hired to help a group of Indian botanists climb Saramati in search of herbarium specimens. Three of the botanists had fallen at this point and had either been killed or seriously injured. I hugged the cliff a bit tighter and continued on.

Late that afternoon, quite worn out from the exertions of our long uphill slog, we arrived at the bustling scene of our base camp under formation upon a small but relatively level portion of the steep wooded slope. Our elevation was around 9,500 feet, and we would be camping amongst large evergreen oaks and 30 foot high trees of *Rhododendron macabeanum*. Our porters and guides quickly erected tarpaulin shelters and started a couple of fires to boil water and cook the evening's meal. The four of us began erecting our own tents, hacking small individual clearings from the brush and scraping away rocks and soil in an attempt to create as level a site as possible. A small stream a couple hundred yards away provided the tremendous quantities of water necessary for such a large group; it took at least two people just to carry the rice for all of us. We would attempt to reach the summit the following day.

Once camp had been arranged, I had time to take a good look around, not having to focus on where each foot was placed. A multitude of different plants grew at this elevation, and things became very interesting once the porters began climbing the towering oaks to hack off large branches with their machetes. As the limbs crashed to the ground the others would chop the wood into smaller lengths for the fire. This provided me with the means to observe the many exciting plants growing epiphytically in the high tree-tops. Numerous ferns, temperate orchids, a species of Solomon's Seal (*Polygonatum*), and the tiny-flowered *Rhododendron leptocarpum* were all instantly accessible. This small epiphytic rhododendron can be quite common in regions of high rainfall where such things flourish. It ranges from Sikkim in the Himalaya, east to the Salween in Yunnan. It is rather unprepossessing in form, foliage and flower, and, being epiphytic, can be difficult to establish, so it is rarely seen in cultivation. It is always readily identified by its small white to yellow flowers or narrow capsules dangling at the ends of their long pendulous pedicels. These hang in clusters below the arching stems, the capsules and narrow leaves turning bright red in the winter.

The following day, after a breakfast of warmed, leftover rice, we began our hike to the summit. Knowing we had to gain around 3,000 feet in elevation and still get back to camp the same day, I assumed that it would be quite steep the rest of the way to the top. I was not wrong in my assumption. Although a bit worn and sore from the previous day's exertions, we quickly made elevation and soon entered an amazing forest of ancient *Rhododendron macabeanum*. We hiked through this wonderland for the majority of the remaining distance to the summit. It was a beautiful setting with the long trunks of the rhododendron trees arching out from the incredibly steep slopes. As usual in such habitats, the ground was mostly covered with moss and ferns, the underlying rock and boulders often protruding from the thin patina of soil. I was surprised to find the *macabeanum* occurring at such elevations, since in the past it had only been recorded up to around 10,000 feet, just a bit higher than our base camp. Kingdon Ward had obviously not gone all the way to the top when he visited Saramati in 1935. As we neared the very summit, the slope flattened out a little and the forest gave way to windswept meadows interspersed with clumps of juniper – not very promising for rhododendrons. We continued to climb, often through the soggy meadows, searching for woody plants in the higher bits of ground and on rock outcroppings. Finally, we had made it. We were on top. The summit dropped off precipitously on the Burmese side in a long vertical escarpment. I could see the rhododendron forest far below. We settled in

for a quick rest and late lunch near one of the border markers erected many years ago by the Burmese. As we ate, the contradicting emotions within me battled for control. On the one hand, we had done it, struggling through what we all agreed was the hardest trekking we had ever done, and, as far as I knew, we were the first westerners to reach the summit of the highest peak in India south of the Himalaya. On the other hand, all my hopes and expectations of finding *wattii*, and at least one or two new species, had been dashed. The unknown flora of this remote high island of a peak seemed to have nothing more interesting or new than the rather dull *Rhododendron mekongense*.

As I watched our porters push the border marker over on its side I noticed a green mass in the distance. I walked toward it and realized that it was a small forest of some type, just a bit down slope to the north. As I drew near, the forest materialized into *Rhododendron macabeanum*. I was astounded to see a species known from 2,500 feet lower in elevation, a denizen of the sheltering forest, growing as an alpine shrub on the very summit of the mountain. The plants were quite large, many up to 15 feet high and as wide. They appeared very similar to what we had observed as we hiked up through the forest that morning. I checked the indumentum and capsules − definitely *R. macabeanum*. A most amazing find! With little time to waste, the others (who had by then joined me) and I did a quick search beneath the massive alpine shrubs, hoping to find *R. forrestii* or perhaps one of our "missing" new species, or who knew what other treasure in this new, richer habitat. Sadly, I was once again disappointed, although we did find a couple of charming dwarf alpine willows and the high alpine rhododendron relative *Diapensia himalaica*. This rarely grown treasure is a very desirable, but exceedingly difficult to cultivate, dwarf alpine shrub normally found growing with dwarf alpine rhododendrons in the Himalaya and adjacent SW China. We reckoned that this was the only population of this rare alpine plant south of the main range of the Sino-Himalaya.

We were quickly called back and gathered again near the fallen border stone to celebrate Kelly's birthday. Kattu had actually arranged for a birthday cake to be carried all the way to the summit. As we cut into the cake, the wind started to howl, carrying with it a cold, hard-pounding rain. I pulled my poncho and some extra string from my pack and we quickly rigged a small shelter to keep the cake and birthday-boy dry while we celebrated. As the weather continued to deteriorate, we gave up and began the long hike back down to base camp.

The rain squalls quickly became a monsoonal torrent, pouring down from the sky in heavy waves. It was almost pointless to try and keep upright as the steep slopes became saturated with water, and we slid our way down the mountain, more often than not on our backsides. It became a wild ride downhill, grasping at *macabeanum* trunks to slow our pace as we slid along. I rather enjoyed the ride and will admit to outright laughter as I rode the mud down the mountain in one of the hardest rains I have ever experienced. (Unfortunately, there was worse to come in Arunachal Pradesh).

Back in camp, coated in mud, we all huddled under the temporary shelters, crowding close to the smoky fires in an effort to ward off the deep chill that sets in once one has calmed after such an exertion and thorough soaking. It was raining so hard that the porters, used to such things, had a great deal of difficulty keeping the choking fires going. Such situations present one with the never easy choice of braving the weather outside of the shelter or staying under cover and dealing with clouds of trapped, burning and eye-stinging smoke. The rain continued to pour straight down for a good part of the afternoon, finally abating late in the day and allowing us to

strip off our mud-soaked clothes and crawl into our tents for a much needed rest after the exertions of the previous several days.

The following morning we started back down the mountain, retracing our steps along the cliffs and our freshly cut trail. Late that day, we arrived at the edge of civilization - the cut-over forest and scattered plantings surrounding the village of Thanamir a most welcome sight. Word quickly spread that we had returned, and soon most of the village had come out to greet us. The kids ran and flocked around us, chattering and laughing as the villagers pulled our backpacks from our backs to help us along. They seemed quite surprised to see us and I later learned that they had not expected us to return, at the least not successfully, thinking that we would not be up to the task, especially when considering what had happened to the Indian botanists the year before. We were glad to prove them wrong. After a brief rest, we were escorted to the home of Rangkhang, the eldest man in the village and the first person to carve a path to the summit of Saramati. He was almost 100 years old, quite blind and frail. His family was able to convey to him who we were and what we had accomplished but I felt humbled to be in his presence.

We had a big celebration in the village that evening, with lots of fresh chicken and rice wine. The "Women's Society of Thanamir" put on their finest native festival dresses and we all eventually joined in the dancing and singing. Late that night, after most had gone to bed, I followed some of the younger people of the village outside. It was crystal clear again, and I enjoyed an amazing view of the stars and the Milky Way. A guitar was produced and I sat spellbound by their range of material and remarkable singing as they performed several songs that I recognized as church hymns from my younger days in Sunday school. (Even this far into the frontier, most of the Nagas have converted to Christianity). I placed the small tape recorder that I carry for such events on the rock in front of us and recorded a couple of their songs. I will never forget the naked joy on their faces as they looked at each other in astonishment when I played the tape back for them. In broken but quite legible English, I was asked with some amazement, "This is wonderful sir, you have many such things in your country"?

Although we did not have an opportunity to explore the northern and eastern slopes of Saramati, I am now convinced that several of the species formerly considered to be endemic to NE India, including *macabeanum*, *johnstoneanum*, *triflorum* var. *bauhiniiflorum* and *elliottii*, all four long thought to occur only in Nagaland and Manipur, are native to the expansive and remote slopes of the portions of that isolated peak lying in adjacent northern Burma.

Now began the long journey back out of the Saramati frontier, and indeed out of Nagaland. Our first segment was coming to an end and we would be making our way to Assam to meet up with the group arriving for the Arunachal Pradesh portion of the trip. Over the next three days we drove through some amazing scenery as we worked our way out of the Naga Hills and onto the floodplain of the Brahmaputra - our destination being the city of Dibrugarh, Assam. Along the way we visited or passed through many remote villages, small towns and a few cities. Places with names like Kiphire, Tuensang and Mokochung blurred into one another as we drove north. An interesting event on the first day away from Saramati still brings a smile to my face. Leaving Pungro, we gave a lift to a rather serious young man in local village clothes. I talked with him at length (through an interpreter) and he asked me many questions about myself and what I thought of his "country". It was only later that I was told, through gales of laughter, that the young man was the very lieutenant that had grilled us upon our initial entrance into the lands controlled by the rebel Naga army. I had not recognized him out of his uniform.

One of the highlights of those three days was a stunning drive down the side of a massive escarpment on a long series of steep switchbacks as we dropped almost straight out of the relatively cool climate of the hills into the low-lying, hot and humid, malaria-infested tropical plains of Assam. We passed numerous long ribbon waterfalls cascading down the almost vertical face of the escarpment, an incredible place for a road. Deep shaded pockets harbored groves of giant tree ferns, and blooming orchids hung from the shaded cliffs on either side of our vehicles.

Our return to Assam was very exciting as we sped along the now relatively straight and level roads, making good time at last. We entered our first relatively large city early in the evening. It was very strange and thrilling to be back in "civilization" again, with speeding buses full of people, crowds filling the streets and shops lining every road. It all seemed very hectic and was a real shock after the peace and relative solitude of the hill country. We drove well into the evening, eventually reaching the much larger city of Jorhat where we found lodging in a decent hotel. It was great to have a cold beer again, although the showers were also quite cold. After dinner in the hotel, I retired to my room feeling quite ill. This continued through the following day and I had a miserable drive to Dibrugarh.

In Dibrugarh we stayed at the Mancotta Tea Estate, one of many in the area remaining from the British colonial era and still surrounded by mile after mile of well-manicured fields of tea bushes. The estate was very comfortable with all of the trappings and features necessary to make oneself comfortable in the tropical climate. Due to my illness, I was given what I assumed to be the Master Suite, and immediately went to bed, finding great comfort in the largest piece of such furniture that I have ever seen. Between dashes to the marble covered bathroom, I slept the afternoon away, awaiting the arrival of the new group from Delhi.

Garratt, Sue and Kelly took advantage of the luxurious lodging and enjoyed an afternoon of cleaning and repacking. They would be heading west towards the Bhutan border without me. My replacement, Cody Toal, was due to arrive with the rest of the people from Delhi. Late that afternoon I heard the commotion of numerous people arriving and unloading gear. I cleaned up and went forth to meet my new expedition partners. Along with Ken Cox and me, our group included Ken Storm Jr., a seasoned, veteran explorer of the Pemako region and particularly the Tsangpo Gorge as well as other parts of the world. Ken and Ken had met in the Tsangpo several years earlier while on separate expeditions, forming an alliance that led to the current trip. Also joining us was David Burlinson, former proprietor of Exodus Travels in London, who had arranged Ken Cox's expeditions in the late 1990's to the Pemako region in southeast Tibet. David was also a very seasoned explorer, and has probably been in more parts of the world than any other person I have met. With us would be Rob and John, both friends of Ken Storm and both antiquarian booksellers. They had traveled widely, including some trekking in Bhutan. Altogether a most interesting and impressive group.

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Part 4: ARUNACHAL PRADESH − THE DIBANG RIVER

On the morning of September 30th, we awoke to a pouring rain. Following breakfast, we loaded our gear and said our farewells. Our group left the tea estate first and I was sorry to have to say

goodbye to my close friends after all of our time and adventures together in Nagaland. They would be driving west toward the Tawang district of Arunachal Pradesh for a two-week visit along the Bhutan border. My group was heading northeast toward the Dibang River.

We were near the outskirts of town when we were stopped in a traffic jam. There was a great deal of noise and confusion, and some of us left the vehicles to get a better look at what was happening. Pushing through the throngs, we soon came to a mass of people chanting and holding signs. They were tea plantation workers who were striking for higher wages. Shortly after, several large military trucks drove up, pushing through the crowd. Things became very loud at that point and the energy and excitement in the crowd became palpable. A high ranking military man strode through the crowd, followed by numerous soldiers bearing rifles. There was a great deal of shouting and pointing as things began to heat up. I had to admire the courage of the strike leaders as they stood face to face with the military, proud and defiant in their thin cotton shirts and sandals. The next thing we knew, our drivers and guides were physically pushing and pulling us back toward the vehicles. Something had transpired and things were not looking good. Oken and our guides decided that it was time to leave, and we quickly turned the vehicles around, that is, as quickly as one can in a mass of people and vehicles. The buses and taxis were also attempting to distance themselves from events as we drove off looking for an alternative route. We later learned that the exact same scenario had occurred the previous day, and seven tea workers had been shot and killed in that very same location. I never found out what happened the day we were there.

Later that afternoon, we reached a "narrow" point along the wide and shallow Brahmaputra where it could be crossed by ferry. Leaving the road, we drove through what seemed to be a series of open fields. Up and down sandy dunes we drove, through soft mud and massive puddles, seemingly at random and not following any discernable track for long stretches. We passed several vehicles stuck in the loose deposits of the river's floodplain and eventually reached the river itself. The river crossing was accomplished on small ferries, flat-bottomed wooden boats of various sizes and shapes that are hired to take people, trucks, buses and virtually everything you could imagine across the wide river. This in itself was quite an adventure and we all enjoyed watching the ferry boats pull up to the sloping sandy banks of the river to deposit or pick up their loads. We soon had a ferry hired and watched as our three "land-rover" type trucks were driven onto the boat across rough-hewn boards laid across from the shore.

The river was quite shallow in many places, often only a foot or two deep. We slowly plied our way upstream, enjoying the breeze and distant views of the Himalaya in the fading light of the setting sun. After about an hour, we landed on a sandbar in the middle of the river and had to drive the vehicles off the boat, across the sandbar and onto another boat – all in the dark. That night, still in the hot, malaria-infested plains of Assam, we stayed in a Circuit House, a government-owned establishment present in most small towns to house visiting officials and dignitaries.

In the morning we began the long drive up the Dibang River. The Dibang, along with the Lohit to the east and the Siang (also known as the Dihang) to the west, come together in this part of Arunachal Pradesh to form the Brahmaputra. The Siang is known as the Tsangpo in Tibet, and is considered the main channel of the Brahmaputra. We hoped to hike up to a 12,000 to 13,000 foot pass from the Dibang River, and then down to the Siang where we would meet our vehicles and begin the long journey home. This pass had never been crossed or explored by people from the

west, and we hoped to be the first to do so. Ken Cox and I also hoped to find many new and unusual rhododendrons! We had scheduled almost two weeks for the endeavor.

It was still pouring rain as we made the scenic drive up the twisting mountain road toward our rendezvous point. At around lunchtime we stopped on a pass for a stretch and quick bite to eat. Ken and I had been salivating madly over all of the interesting plants viewed through our windows as we drove past them in the rain. We had been unable to stop all morning due to the fact that we had an especially long day's drive to reach our destination. The pass was about 8,600 feet in elevation and we quickly gathered our gear and headed down the road, instructing our drivers to pick us up on the way down after lunch. I marveled at the rich flora, especially the variety of ericaceous plants − rhododendrons and their relatives. It was much more diverse than what I had observed in Nagaland. Species of *Gaultheria*, *Vaccinium* and *Agapetes* all vied for our attention. Of particular interest to me was *Gaultheria wardii*, a very rare species in cultivation. It had distinctive hairy stems and masses of milky blue fruit. Another great find was *Vaccinium glaucoalbum*, an evergreen blueberry with bright blue-green foliage. The most exciting plant, for me anyway, was a beautiful specimen of *Agapetes nuttallii* growing epiphytically on the side of a maple tree. This is a plant that I knew only from two dried specimens in the herbarium of the Royal Botanic Garden, Edinburgh that had been collected many years earlier in Arunachal Pradesh. It had never been introduced into cultivation and I was more eager to find it than any other plant. Having managed this on the very first day in the field I had high hopes for the rest of the expedition.

Lest you wonder where my priorities lie, we also found many interesting rhododendrons. *Rhododendron maddenii* grew on the steep slopes, as did another strange species, which we soon realized was *xanthostephanum*, far to the west of where it had ever been recorded before. I had observed this species in the wild many times during my travels in the Salween region of Yunnan where it is quite common. We had not expected to see it here. *Rhododendron edgeworthii* was also common here, as was a big-leaf that we could not identify. Unfortunately, there were no large specimens of this species and so we had no floral parts to help us. We finally came to the conclusion that it might actually be the rare *R. magnificum*, a species collected only once, and one that remains quite rare in cultivation. Previously, it had only been found by Frank Kingdon Ward, who collected it in northern Myanmar, east of our present position. Having just found *xanthostephanum* far to the west of where it was known to occur, it did not seem too much of a stretch to think that this population could indeed represent the enigmatic *magnificum*. As currently understood, this species is very closely related to the much more common (in the wild) *R. protistum* (also known as *giganteum*), a species that forms a large tree in the temperate rainforests along the Yunnan/Myanmar frontier. *R. magnificum* differs primarily in having a slightly different leaf shape and in the fact that it develops its thin indumentum and begins to flower at a much younger age than its giant relative. There is still debate on whether or not they are actually distinct from one another. With very little wild material available to study, this debate will have to continue. *(NOTE: This was the first collection of a species which we now know to be a completely new species to science. It was subsequently introduced from Arunachal Pradesh by several collectors (under several different names!) many times over the following years as more and more western explorers gained access to this remote, long-isolated region. It has yet to be officially named. – SEH, 2013)*

Far too soon, our vehicles arrived and we piled in, quickly losing elevation as we drove back down to river level. Later that afternoon, we stopped for a break and I discovered that my socks

were completely soaked with blood. Pulling off my boots revealed two fat swollen leeches, which I quickly dispatched. Leeches cause very little pain but their bites can be quite annoying due to the anti-coagulant that they inject, causing the small puncture wound to bleed interminably. The rest of the drive was incredibly scenic as we more or less followed the course of the Dibang. The river was at times quite close, then far below - the narrow dirt road twisting and turning up and down every side valley as we slowly made our way upstream. No high peaks were visible from our low elevation, the foreboding monsoonal clouds precluding any chance of distant visibility, though we were too deep in the valley to see much anyway. The mountain slopes were heavily forested with the multitude of broad-leaved evergreens that dominate at this altitude. There was little hope of seeing any rhododendrons at such a low elevation but the occasional distant splash of bright yellow or white betrayed the existence of lofty epiphytic orchids hanging from the massive oak and magnolia trees, mostly species of *Dendrobium* and *Coelogyne*.

Eventually, we passed the point along the road from which we would eventually begin our trek. We were not due to begin until the following morning, however, and so drove on to the next small town where there was a Circuit House available for lodging. It was still quite hot and muggy, and we battled dim-dams through the night. Dim-dams are similar to the “no-see-ums” that many of us have experienced in the backwoods, and are what Kingdon Ward called “sand flies”, a nasty pest that he refers to quite often in his accounts. They are ferocious little buggers with a painful bite followed by a mighty itch, and seemed to be able to penetrate even the mosquito netting that was usually provided.

In the morning, the rain still pouring down, we drove back down the valley to our rendezvous point. We soon reached the location along the road where we would meet with our Mishmi porters to begin our trek. As often happens, the porters did not show up for hours, and we did not leave until mid-day. This was not a very auspicious first meeting with the Mishmi people, but we had little else upon which to judge them. The Mishmi are one of the larger minority groups in the mountains of Arunachal Pradesh and indeed the very region we were exploring is known as the Mishmi Hills. The Mishmi had a fierce, war-like reputation in the British colonial era, and Kingdon Ward had very little good to say about them after his many years of experience in the region. We were willing to give them the benefit of the doubt. Many of the young men wore unusual but ornamental conical hats, hand-made from bamboo and other local materials and lined with thin plastic bags, forming decent rain-shedding headgear. I had never seen anything quite like them. As is typical for the native mountain people of the Sino-Himalaya, the majority of them were shorter than westerners, but well-built and stocky. Their broad, flattened and incredibly tough feet were the result of a lifetime in the mountains with little or no footgear.

It continued to pour as we finally distributed all of our gear and headed downhill from the road on a very slippery muddy track, straight down to the river at 1,600 feet. This bit alone took quite a while, since it was so steep and treacherous. Once we reached the river we took turns crossing the incredibly long cable and bamboo swinging bridge that stretched from bank to bank. Fortunately, it was well anchored into concrete pilings. Actually, it was an amazing piece of engineering for so remote a region, stretching as it did across so large a river. The crossing itself was something of an adventure, and probably not everyone’s cup of tea, due to the thin and slippery bamboo slats that formed the floor around the many gaping holes. Once on the other side, I realized that we were in for one heck of a trek when the path immediately shot up the

steep cliffs and we were scrambling up thin logs that had been jammed into rock crevices. This turned out to be the "good part", nearest to civilization.

We hiked straight up for a few hours, sweating profusely in the sodden sub-tropical heat. It continued to rain and we stopped at a small hut for a quick break. Many of our Mishmi porters were already drinking rice wine. This is not all that unusual, as porters in such situations usually "party" as they go along, often subsisting on little else other than the handful of parched corn carried in a small bag at their waist, and rice in the evening's camp. Unfortunately, as we were later to find out, many of our porters were overdoing it. We eventually reached a fairly lengthy section of level trail and the rain abated briefly, providing a nice bit of walking and the chance to observe our surroundings. Late in the afternoon, at around 3,000 feet elevation, we reached the last large village and were pleasantly shocked to find a small but decent Circuit House. The Mishmis cleared out the rubbish and we moved ourselves in for the evening, the roof over our heads a welcome surprise in the wet climate. We had hoped to be much further up the valley by the end of the first day but it was a start. To our extreme dismay, though, several of the porters, and our guide(!), never arrived in the village, leaving at least one member of our group without any of his gear. This caused a great deal of consternation because our gear was all that we had to get us through the next couple of weeks. We complained bitterly and were reassured that all would be worked out, but this was a formidable problem for the next couple of days, greatly contributing to our eventual retreat from the Mishmi Hills.

We bought every beer in the village and enjoyed visiting with the local Mishmi people, all of whom seemed to be standing outside of "our house". We were visited by the gam of the village (the headman) who was interviewed at length by Ken Storm (through an interpreter of course). This was all recorded on the video equipment Ken had brought along to record the expedition and to document the people and their culture. We were told that we were the first westerners to visit the village. Unfortunately, that would be the last bit of video recorded due to the increasing difficulties over the next couple of days. That night, with only five beds available, I volunteered to sleep on the floor and suffered a horrible night's sleep, fighting both dim-dams and visions of vipers, cobras and kraits crawling up through the holes in the floorboards all around me. Quite silly, really, but the imagination does take over. It rained hard all night.

In the morning it was still pouring rain, and many of the porters and the gear they were carrying had still not arrived. We sat around waiting all morning, discussing possible plans should things get worse, or should the bags fail to appear at all. We decided it would be best, especially for those without a change of clothes or a sleeping bag, to stay at the Circuit House one more day if the gear did not arrive in a reasonable time. Fortunately, at around 1:30 in the afternoon, the missing porters and gear arrived, but still no guide. We quickly organized nevertheless, and began the next leg of our trek, already far behind schedule. We were told that we would only have time to make it to the next village, about a three hour hike. I knew that things were not going to improve any time soon when the two porters with whom I was hiking, ahead of the others, stopped in confusion at a branch in the trail shortly after leaving the village. It seemed they had no idea where to go. One of them ran ahead to check things out, and soon returned with directions, having consulted some farmers along the trail − not a very confidence-inspiring situation when you are heading into unknown wilderness. The trail soon became quite rough and the Mishmis seemed to have no clue about trail clearing or guidance. We struggled through thickets of brambles and hanging vines, their daos (machetes) hanging unused at their sides. At one point on the narrow trail, we hit a ground hornet nest and several of us were stung before we

could dash away. It continued to rain off and on and we battled masses of leeches, hesitating even to stop for a drink of water in an effort to avoid the worst of them.

As we suspected, the next village was a great deal further away than three hours. As the sun set and the forest light began to dim, Ken Cox, David Burlinson and I were soon far ahead of the rest of our group. We really started to worry when the darkness settled in and we were still deep in the forest on a steep slope with nothing resembling a level spot to even think about pitching a tent should our gear ever catch up to us. Furthermore, we had seen no sign of the other members of our party, who were now probably far behind. Avoiding leeches became unimportant as we raced ahead in the dark, trying to find some place to hole up for the night. I started to think about poisonous snakes again but even this receded into the background as we pushed forward at a rapidly increasing pace in the dark and rain, hoping we were at least staying on the trail. I was glad to have my "trail legs" under me, the result of our exertions in Nagaland. Eventually, the two young porters who had managed to keep up with us and who were carrying most of our gear led us down a side track to a small village of three huts up on stilts near the river. We brazenly entered the largest hut and were greeted by a wizened old man and his wife. We performed simple greetings and then Ken and I went back into the rain and set up his tent under a chicken coop nearby. The ground was quite dry beneath and we quickly arranged our accommodations, the tent being large enough to hold the both of us. We then went back into the hut and plopped down on the bamboo mat flooring next to the small fire. We started pulling off leeches and throwing them into the fire as we waited for the rest of our large group to arrive. Needless to say, it was a huge relief to have reached some shelter. The small house was set on poles situated above the pig sty into which all refuse was deposited through holes in the floor. This included human waste which was dealt with behind a rough curtain near the entrance, the hungry swine waiting just below.

The others came in over the next couple of hours, most having suffered bad falls and minor injuries on the dark treacherous trails. Rob and John were both exhausted, physically and mentally. It was not looking good for our group, and some of our porters and gear were still not with us. Once Kattu (our hired expedition trek leader) arrived, he made arrangements for food, purchasing two scrawny chickens (I am sure at a greatly inflated price) and putting together a hot meal. As the evening wore on, Ken and I retired to his tent, the others electing to sleep in the hut. It was pitch black and very hot and muggy in the tent but much better, in our opinion, than the sharp stench of the pigs. In the morning we learned that they had all slept horribly due to the smell and masses of dim-dams and other biting nuisances. Ken and I lay awake for a long time, discussing the predicament we were in and debating our options. The rain was coming down with such ferocity that we had trouble hearing one another in the tent. It seemed to gain strength throughout the night and I was quite apprehensive about landslides from above, such things being *very* common in this part of the world. It was the loudest, hardest rain that I have ever experienced (if you have read about my other expeditions you know that I have been in a lot of heavy rain).

At first light, Ken Storm came out to the tent and we had a quick but difficult meeting, none of us wanting to do what we knew we had to do. The situation with the Mishmis was not improving. They were behaving poorly, many still having failed to catch up with us (the porters should always be ahead). In addition, we were reliant upon them as our guides but they seemed to lack all the necessary field skills to get a large group through the forest and into the mountains. These facts, combined with the increasingly horrible weather and our much too slow

pace, forced us to face the reality that we were probably not going to make it to the pass. With the agreement of the other three team members, we decided to cut our losses and turn back. With any luck, the proper permits, and some makeshift planning, we could use the time left to attempt the pass from the other side of the mountains.

Late that afternoon, we arrived back at the Circuit House in the first village, our spirits darkened but all of us intent upon planning our possible options. Due to the non-stop rain, the waterfalls on the distant valley walls were all much larger and more impressive than when we had seen them last. The next day we made it back to the road and were disappointed to find that it had been blocked by landslides both upstream and down. Kattu had left the village at the crack of dawn to try and arrange for some vehicles (no mean feat!) to transport us and our gear out of the valley. Our own original vehicles were of course long gone, probably well on their way to the Siang Valley on the other side of the pass. While waiting alongside the road for word from Kattu, we escaped the incessant rain under the thatched roof of a local inn, the very same place we had first met our Mishmi porters in what seemed like many days earlier, but in reality had only been three days before. With many of the locals in attendance, we enjoyed a long afternoon of beer and finger chips (freshly made french fries) hoping that Kattu would show up with some transportation but not really expecting anything. As the afternoon wore on, we began to make plans to camp along the road or sleep on the floor of the inn. Amazingly, the enterprising Kattu showed up later that evening along with two vehicles which had been between the two slides and so had been trapped with us. One of the vehicles, on the way to pick us up, had been hit by some large boulders in a landslide. The front end of the small pick-up truck was smashed quite badly and most of the windshield was gone, but it was still drivable. We left our "roadside inn" for the next town down the valley and were put up in a Circuit House, still trapped behind the large landslide downstream.

In the morning, word arrived that the road had been cleared. We loaded up and left, heading back to Assam. The luck and (relatively) great speed we had in exiting the Dibang were really remarkable considering the circumstances. This was vital if we were to have enough time to accomplish anything in terms of mounting a backup expedition. I volunteered to ride in the smashed pick-up, enjoying the air and fine, glassless view. Driving over the pass where we had botanized for a short period on the way in was another story. The cold Himalayan air was as breathtaking as the views of the mist-shrouded mountains and I quickly gained an increased appreciation for intact windshields.

Late that afternoon we were back at the same Circuit House we had stayed in just a few nights earlier, prior to entering Arunachal. Unfortunately, it was full of government officials and no rooms were available. We were more than ready for a bed but had no place to stay. As we hung out on the grounds of the circuit house, Kattu commandeered a motorcycle and headed into town to look for lodging. A couple hours later he showed up with a smile on his face, having found a small hotel in the main part of town. The Lhasa Hotel was a bit of a dive, but it had a roof and beds and for that we were grateful. We finally managed to get to a phone and immediately called Oken, our tour leader and in-country liaison. Ken Storm had a long discussion with him, explaining our situation and what we planned on doing if Oken could arrange the necessary permits. Oken told Ken that while we were stuck in the Dibang, he had heard from Ken's family that his father had been hospitalized. This was the last straw for Ken, and after calling home to his family, he decided to fly home immediately. Rob and John had had enough of Arunachal Pradesh and were already planning on flying home. David was planning on flying to Bangkok to

start another journey, leaving Ken Cox and myself in the outback of India with two weeks to kill. Much later that evening we had some tasty chicken chow mien in a local restaurant, our first food since early that morning.

The next day I was finally able to call home to let my family know what was happening and that all was well. It took Kattu a couple of hours to arrange four-wheel drive vehicles to transport us back to Dibrugarh where most of the group would be catching a flight back to Delhi. It was a long, hot and tedious drive back to the tea estate where it had all started just over a week earlier. It seemed like a much longer time than it really was since we had left civilization. We crossed the Brahmaputra again on a ferry boat, becoming stuck on submerged shallow sandbars several times. The crossing seemed to take hours but we eventually reached the other side and had a quick drive into the city of Dibrugarh with its surrounding mile after mile of manicured tea plantations.

It was heavenly to be back at the Mancotta Tea Estate once again. Hot showers, beds with sheets and air-conditioned rooms all helped to relieve the strain of the past week's ordeals. After cleaning up, most of the guys were busy rescheduling their flights home and making last minute arrangements. Later, after things had settled down and we had enjoyed a fantastic meal, we all sat on the enclosed veranda and enjoyed a few beers and each other's company, saddened with the knowledge that our group, which had been through so much together in such a short time, would soon be breaking up, the expedition finished. At the same time, there was a feeling of relief, and even hope, new possibilities emerging as we discussed the future of exploration in this remote part of the planet.

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Part 5: ALONG THE BHUTAN BORDER

The day after arriving at the tea estate, all the itineraries were rearranged and it was simply a matter of each of us connecting with our flights or rides, most of the guys flying out in mid-afternoon on the daily Delhi flight. After some thought and discussion, Ken Cox and I arranged to go as far west as our visas and permits would allow, in the hope of escaping the continuing monsoon rains. Our new goal was the West Kameng District, the westernmost portion of Arunachal Pradesh along the eastern border of Bhutan. The reasoning for this move was basically threefold – 1) as one moves west in the Himalaya, it becomes progressively drier, the monsoon having much less effect in the central regions than on the far eastern end where we had been traveling; 2) we were now somewhat restricted in time for what we could even hope to accomplish, and we knew that there was a good road system along the western border of Arunachal Pradesh that would allow us quickly to access the mountains and other rich areas; 3) the western portion of Arunachal, although not the blank spot on the map that the central portion remained, was still relatively unexplored. This meant that we would be going basically to the same area that Garratt, Kelly, Sue and Cody had planned on exploring while the rest of us had gone up the Dibang. In this region the relatively drier climate supports a much more "typical" Himalayan flora, not as exciting perhaps as what we had hoped to see in the unexplored Dibang River region, and didn't, but still quite rich and interesting. This area had been briefly explored by Frank Kingdon Ward as well as by the team of Ludlow and Sherriff, but not to any great

extent by either, and it has not been explored at all in the modern era. Aside from our friends, who, we learned from Oken were still in the area, Ken and I would be the first to explore this region since the days of the old plant hunters – not too shabby a prospect.

Oken made arrangements for Ken and me to take a helicopter from Dibrugarh to Itanagar, the capitol of Arunachal Pradesh which was about halfway to the Kameng District. This would save us one very long day of driving and give us that much more time in the field. Kattu and the rest of our crew left the tea estate first thing in the morning with most of our luggage and gear, planning on meeting us that night in Itanagar. Unfortunately, we received a call from Oken late that morning informing us that the flight had been filled with government officials, and that he had instead hired a four-wheel drive vehicle to drive us to Kameri National Park in Assam, where we would stay the night in a new eco-camp. The truck showed up around 1:00 in the afternoon and we had a long, tedious drive of around 8 hours to our lodging, mostly in the rain, and, unfortunately, in the dark once we reached the interesting areas late in the day. Once again, I had the chance to travel through and past the most famous park in the region – Kaziranga, the home of one of the largest herds of the rare Indian one-horned rhinos left in the wild. And once again it was pitch black outside and I saw nothing. This large park is also home to large herds of wild Indian elephants and substantial populations of Bengal tigers, bears and other wildlife, all of which had been abundant throughout the region as little as a hundred years ago. Later, I heard from Sue that when her group had driven past the park the previous week, they had seen a large herd of elephants from the road.

We arrived at the eco-camp late in the evening. It was a fairly new camp that had been set up by the local Angling Association for use as a fishing lodge, and for a base-camp to lure tourists to the region. It consisted of a larger open "cafeteria" hut with a dirt floor and several much smaller bamboo and thatch "lodges" raised up on stilts to keep out the mud and snakes. Scattered large hardwood rainforest trees with massively buttressed bases still stood tall and proud in the mostly cleared campsite, the majority of their jungle neighbors having been logged off for grazing or timber long ago. In the morning, while waiting for Oken to arrive so that we could continue our journey to the west, we watched a group of people re-building one of the neighboring thatch huts that had recently been destroyed by a rampaging wild elephant. The pounding monsoon rain, unabated throughout the night and continuing through the entire day, had little effect on their efforts. We were informed that in addition to enraged elephants, a large King cobra had been found under a bed in the adjacent hut just a few days earlier. We were rather relieved that we had been oblivious to these interesting tidbits the previous evening while we lay in bed listening to the steady drumming of the rain.

Frustratingly, Oken and the others did not arrive with our vehicles until 4:00 in the afternoon, providing us with a leisurely day of reading and catching up on notes, but leaving us with another lengthy drive in the dark. We made steady progress to the northwest and soon entered Arunachal Pradesh again, beginning the long steady climb up from the floodplains of the Brahmaputra that make up most of Assam. We were soon driving along a very winding and narrow road in the canyon of the Kameng River. This was very scenic in the fading light, the steep canyon walls festooned with tree ferns and a continuing procession of ribbon waterfalls splashing down from high overhead. Most of this was passed in the dark however, and it was several hours of stressful nighttime driving before we finally reached the town of Dirang.

Dirang was a great little town situated at the confluence of two tributaries of the Kameng River near the Bhutan border. We had climbed from almost sea level to an elevation of about 5,500 feet and so were quite comfortable having finally left the steamy lowlands of Assam. We were lodged into a fairly new hotel owned by Oken's aunt (Oken seemed to have relatives everywhere we went in Arunachal). It was quite comfortable with hot showers and even a TV, something we had not seen at all prior to then (and for which we were mostly thankful) that provided a means of catching up on what was happening in the world, as well as the nightly broadcasts of the international rugby playoffs.

As I mentioned earlier, this region of Arunachal is relatively accessible by road compared to the central and western portions of the state (depending, of course, upon whether you can get the necessary permits). The primary reason for the good road system here was the 1962 Chinese invasion of northeastern India, when the Chinese army fought its way south all the way to the Brahmaputra before turning around and withdrawing back to Tibet. To this day, China still claims all of Arunachal Pradesh as its own territory, and indeed, if you look at a Chinese map of China, it shows the border as being along the Arunachal/Assam border (vs. Tibet/AP), with all of the place names in Arunachal replaced with Mandarin names. Since then, the Indian military has established numerous bases in the region which are maintained via the road system that is kept open year-round, primarily to facilitate the movement of tanks and trucks. The main road in the west runs more or less north and south adjacent to the Bhutan border, from the plains of Assam north to the town of Tawang near the Tibetan border.

As we settled into Dirang, we breathed a sigh of relief, finally to be somewhere relevant to our purpose. Now we could get down to business and do some plant hunting. A whole new world awaited and we decided to make the small, but comfortable and centrally located town our base, driving to as many different areas and habitats as possible in the few remaining days. On our first day, we went with gusto, electing to take the main road up and over the pass known as the Se La, very conveniently located at 13,700 ft. With an early morning start we had plenty of time for stopping along the way to the top. Shortly after leaving town we entered the temperate forest zone and were soon spotting old Himalayan favorites such as *Rhododendron griffithianum* and *R. maddenii* ssp. *maddenii*. I had my eyes focused to find one plant in particular, *R. dalhousiae* var. *rhabdotum*, the species highest on my list once we had relocated to the west. This is the eastern version of the common, widespread and well-known east Himalayan species *R. dalhousiae*, a plant with magnificent fragrant trumpet-shaped flowers of greenish-yellow to cream or white, often up to four or more inches long. The type variety *dalhousiae* is replaced in the eastern end of the species range by the variety *rhabdotum*. The rarely grown var. *rhabdotum* occurs in similar habitats but is only known from eastern Bhutan and adjacent regions of western Arunachal Pradesh, and has been little if ever collected in the modern era. This variety is even more stunning than its relative, the similar flowers differing in the 5 bold red stripes running the length of the corolla, and the much later blooming season, typically July in cultivation (vs. early May for var. *dalhousiae*). It provides a unique floral display, and is easily one of the most stunning flowers in the genus.

At around 8,600 feet, there it was, *R. dalhousiae* var. *rhabdotum*, hanging from the scrubby cliffs along the single-lane road. I was thrilled with the opportunity to observe one of my favorite plants in its wild habitat. Our move west was paying dividends already, and much more was to come. At around 11,000 feet, things really started picking up. Such well-known Himalayan rhododendrons as *arboreum*, *thomsonii*, *keysii* and *cinnabarinum* were now quite common, all

growing together and complemented by a tremendous assortment of other interesting plants. Among these were the very widespread and common *Gaultheria fragrantissima*, various species of *Clematis*, *Berberis*, *Arisaema*, *Acer*, *Sorbus*, etc., as well as the dominant conifers *Tsuga dumosa* (Chinese Hemlock) and *Abies densa* (East Himalayan Fir). In amongst the *arboreum* and *thomsonii* were scattered individuals of the plant known as *R. sikkimense*, usually considered a natural hybrid between those two species. I had observed "*R. sikkimense*" several times in Sikkim in 1997, and it had been quite obvious to me then that this "species" was a natural hybrid, commonly appearing wherever the ranges of the two parent species overlap. Seeing it again, so far to the east, confirmed the hybrid origin of this "species". It is rare in cultivation but makes an attractive shrub, right down the middle more or less between the two parents in appearance, with fine red, bell-shaped flowers and a more compact habit than either parent. At this point, we met another couple of vehicles coming from the north. It was Garratt, Sue, Kelly and Cody, returning from Tawang near the Tibetan border. They were near the end of their expedition and were headed back to Dirang, having been on the road since early that morning. We shared a couple of quick stories and said goodbye for the time being, continuing our work on the mountain knowing that we would have plenty of time to catch up with them back in the hotel.

As we climbed toward the pass we noticed the first big-leaf species, a strange looking thing that did not quite match *hodgsonii* − the species that we expected to see in this region at that high altitude. *R. kesangiae* immediately popped into our collective minds but it looked a bit "off" for that as well. Besides, we were supposedly too far east, that species being known to be endemic to Bhutan, and having never been collected in India. But closer examination and additional observations there and in other locations confirmed that it was indeed *R. kesangiae*. As we continued our explorations throughout the region over the next several days, we found *R. kesangiae* to be quite common, and in fact one of the dominant species in its elevational range. It could no longer be claimed as one of the distinct and treasured endemics of Bhutan!

There were many interesting rhododendron relatives, members of the family Ericaceae, growing in the scrub and cutover forest. Among these were species of *Gaultheria* and *Vaccinium*. The various gaultherias are often common at these elevations in the Sino-Himalayan region. The larger growing species often cover vast stretches of mountainside, much as the native *Gaultheria shallon* (salal) does in the Pacific Northwest. The dominant large species in this area was the variable *G. fragrantissima*, a species that I have observed in virtually every part of southeastern Asia that I have visited. It is typically three or four feet in height with large clusters of blue to violet berries in late summer. Growing under the rhododendrons and other shrubs were two dwarf and prostrate, creeping species of *Gaultheria – nummularioides*, with small rounded leaves and black fruit, and *trichophylla* with tiny narrow leaves and large blue berries. Both species make excellent groundcovers in the garden. The blueberry genus (*Vaccinium*) was also well represented with the ornamental species *glaucoalbum* forming a large portion of the rhododendron/ericaceous scrub. This extremely attractive evergreen species has blue-green leaves coated with white on the undersurface. It grows to about three feet with small pinkish flowers followed by ornamental crops of edible blueberries. I consider this species to be one of the finest shrubs in cultivation. Another interesting *Vaccinium* that I was very excited to find was a plant growing epiphytically on the trunk of a large *Rhododendron kesangiae*. This small-leaved dwarf evergreen was obviously closely related to the common species *V. nummularia* but with much smoother stems and larger rounded leaves. It appeared clearly to be something new, although I did later key it out to *nummularia* (new things often key out to closely related species since they have nowhere else to go, if you know what I mean; either that or the key is wrong).

The typical *Vaccinium nummularia* is another species that I would not be without. It has golden-red bristly stems covered with small round leaves, each leaf deeply veined and glossy. The small pink urn-shaped flowers are produced in clusters, followed by small blue-black berries. It is an altogether enchanting dwarf species that I have observed many times in the eastern Himalaya, often growing epiphytically on large specimens of *R. arboreum* or other trees.

We finally reached the pass and stopped for a good look around. At 13,700 feet it was quite cold and windy, and it soon began to rain. The weather did not seem to matter, however, when, stepping out of the truck, we immediately entered an amazing natural garden of alpine plants. The exposed rock and steep cliffs of the pass were home to a great variety of small cushions and mats, the various tough and wind-resistant species finding homes in every small depression or crack. Bright blue gentians dazzled in the sea of red, yellow and brown. The alpine bistorts (*Polygonum* spp.) provided a splash of pink with their late season flowers. But it was the dwarf alpine willows and rhododendrons that dominated, often growing together and covering huge slabs of rock or forming a spreading skirt of vegetation around the bases of the larger boulders. The bright red fall foliage of *Rhododendron lepidotum* was outstanding, especially in contrast to the deep green mats of *R. anthopogon* with which it competed. The occasional tussock of the strange *R. fragariiflorum* completed the triumvirate of tiny rhododendrons. As we scrambled over the rocks, we noticed the occasional deep pink off-season flower on the low mats of *anthopogon*. This confirmed our suspicion that this population represented one of the finest forms of ssp. *anthopogon* in cultivation, a form collected (Ludlow & Sherriff #1091) in nearby Bhutan, grown and distributed as the cultivar 'Betty Graham'.

The largest (up to three feet) and most dominant rhododendron on the pass was another surprise − *bhutanense*, a species, like *kesangiae*, long thought to be endemic to Bhutan. This member of subsection Taliensia is closely related to *R. phaeochrysum* and is probably best thought of as the western extension or representation of that variable and incredibly widespread species. It differs primarily in its very short-stemmed and distinctly upturned leaves with a very dark orange-brown indumentum. This is a rare species in cultivation, having only been introduced a few times since it was first described in the late 1980s. I have never seen it in flower, but the few photos I have observed show rounded trusses of deep pink on a low and compact plant – quite attractive. We were not totally surprised to see it here in Arunachal, especially after finding *kesangiae*, but we were surprised at how common it was. Virtually the entire range around us was covered with a dark green layer of this one species. Another blow to Bhutanese endemism.

After agreeing to meet the truck on the road at 3:00 PM (the truck would leave the pass at 2:30), Ken and I split up to cover more territory and began to work our way down slope. I soon entered a fine, fairly open fir forest with an understory of *Rhododendron hodgsonii*, many up to 20 feet high. In addition to the magnificent groves of big-leafs, I was soon enjoying a fine selection of other woodland species including *fulgens*, *wightii*, and once again, to my surprise, another supposed Bhutanese endemic - *flinckii*. The *fulgens* were fairly typical, their smooth and peeling reddish brown bark being useful in distinguishing it from the superficially similar *R. campanulatum*, which actually comes nowhere near Arunachal Pradesh. The *wightii* was also typical with sticky buds and thin brownish compacted indumentum. I had seen both *fulgens* and *wightii* in Sikkim back in 1997, and these plants were quite similar in appearance, both species exhibiting only minor variations throughout their large ranges. For many reasons, finding *flinckii* was an especially exciting moment for me personally. First, I have a particular fondness for subsection Lanata and am always eager to observe them in the wild in an attempt to make sense

of what continues to be a very confusing and poorly known group of closely related species. The fact that it is an outstanding ornamental plant in combination with its not having been recorded from this far to the east also added to the intrigue. I managed to find only three small plants, but fortunately we would later find an abundance of it, albeit in a slightly different form, further west on the Bhutan border. According to Peter Cox, who visited some of these same areas the following spring, the *flinckii* flowers on the Se La are pink whereas they are pale yellow in the populations we would later observe near the border with Bhutan. Another highlight on this altogether outstanding day was the display put on by the creeping sub-shrub *Gaultheria trichophylla*. This small-scale groundcover formed large patches underneath and between the rhododendrons, its tiny evergreen leaves and prostrate habit giving it the appearance of a very robust moss. This "moss" however, was studded with bright blue berries, each three-quarters of an inch in diameter – a spectacular splash of color among the grays, browns and greens of the misty fir and rhododendron forest.

At this point, I realized that it had been a while since I had crossed any of the switchbacks that I had been using to guide myself down the mountain. I went parallel along the slope for some distance and still could not find the road. I began to worry a little, since the patrolling truck was due to pick us up soon, and if they could not find me walking along the road I could be in for a cold evening, or at best be a major annoyance to the rest of the guys. Due to the time-keeping system in India, at that time of year it becomes dark shortly after 4:00 PM, and you have to adjust your thinking so that getting up at 4:30 or so every morning to take advantage of the daylight would not be a big deal. I moved along as quickly as I could, continuing to search for the road as the meeting time of 3:00 drew near. As time and the sun wound down, I realized that I would have to backtrack up the mountain to find the last switchback I had crossed on the way down. I hurried upward with as much speed as I could muster, my heart pounding from the exertion and excitement as I struggled for breath in the thin air of 13,000 feet. Not for the last time I cursed my independence and pretty much everything else I could think of. Before long, however, I reached the road and began to walk down it. Within minutes the truck arrived and I jumped in. Three hours later we were back in Dirang.

That night the six of us (Ken and I, along with my original Nagaland group) had a celebratory reunion party, enjoying the pale warm beer and throwing back more than a few shots of "Old Monk" − a cheap but effective local brandy. The other group had had fantastic weather and had been to several areas along the Bhutan border, observing many of the same things we had seen that day on the Se La as well as a good variety of other things. Kelly told me that when they were at high enough elevations, surrounded by white snow-capped peaks glowing in the constant sunlight, they would look far to the east and see solid swirling masses of dark black clouds, piled one on top of another with lightning flashing in every direction and say, "That's where Steve is" - and they were right.

The next day was a bit more mellow. The six of us spent the morning on the Se La road, looking for some of the lower elevation plants that we might have missed the previous day. Ken and I ended up quite a bit higher than the others, who had spent most of the past two weeks at high elevations whereas we had mostly been quite low, and again lost the road on the way down (I know it sounds irresponsible but we really are actually good at this). We ended up on a steep trail that led straight down and through an army base. Foreigners in general are not allowed at all into this part of India, so we were rather concerned about explaining our presence should we be accosted. Either we were not seen or they did not care, and we were soon outside the base and on

the road again. We added the dwarf *R. glaucophyllum* var. *tubiforme* and one single plant of *R. hookeri* to our list, neither of which I had seen in the wild before.

We spent the late afternoon preparing notes and organizing for the next day. We had learned from the others that there was a good road west from Dirang over the Manda La (la means pass) towards Bhutan that went through some excellent big-leaf forest. This road ended at the border in a logging camp known as Nagagg (pronounced nagageegee), another fine area for rhododendrons. On the Manda La, they had seen entire forests of what appeared to be *R. kesangiae* and probably *R. falconeri* ssp. *eximium*, a species rarely seen in the wild. Sadly, this would be the Nagaland groups last day in the field and our only full day together before they flew home. After our visit to the Manda La, Ken and I would be continuing on to Nagagg to continue our own exploration while the others would be starting their long journey home. We were all in bed early, ready for a great day.

With an early morning start, we were soon above the agriculture and into the forest zone. Unfortunately, most of the native fir forest had been cut and burned to provide grazing for yaks. The stark black trunks of the ruined trees rose like forsaken monoliths in the swirling mist, the beauty of the scene in vivid contrast with the environmental damage. As we continued to gain elevation, the damage decreased, and at around 10,500 feet we found our first good piece of forest. Huge fir trees towered over 30 foot high specimens of *Rhododendron kesangiae*. Here, the *kesangiae* was much closer in appearance to the plants we were growing that had originated from Bhutan. Tight rounded buds and a thin, somewhat plastered, whitish indumentum contrasted with the somewhat "off" specimens we had observed further east on the Se La. In addition, the species *R. argipeplum* (formerly *smithii*) was common and very attractive, forming compact upright shrubs to six feet with the expected thin indumentum, bristly petioles and smooth peeling bark. This species is basically an eastern version of the well-known and common Himalayan *R. barbatum* differing primarily in its lower leaf surface indumentum. Western Arunachal represents the very eastern end of the range of *argipeplum*, and is probably the zone where it and the closely related *erosum* from further east merge into one another. Another interesting and very distinct rhododendron was *camelliflorum*, far to the east of where it had previously been recorded, indeed, like *kesangiae*, *bhutanense* and *flinckii*, this was another new record for Arunachal Pradesh. It grew on fallen logs and high up in the fir trees, the older specimens displaying the magnificent smooth dark brown bark and heavily scaled foliage so characteristic of this small-flowered and rarely cultivated species. Another species had us perplexed for a few minutes, but we soon came up with a name – *Rhododendron kendrickii*, a member of subsection Irrorata that is known to be widespread and common in the eastern Himalaya but is rarely seen in cultivation due to its relative tenderness. We had not expected to see it here, since we were 1,500 feet higher than it had ever been recorded. It has red to purplish, often heavily spotted flowers in early spring and narrow glossy leaves with a distinct undulate margin.

We loaded up and continued along the road, the forest improving with each passing minute. Shortly after leaving the *kesangiae* grove, we rounded a corner and there it was - *R. falconeri* ssp. *eximium*, a species that I had never expected to see in the wild because of its relatively limited range in a region I had assumed I would never have the opportunity to visit. The plants formed small trees or large wide shrubs, mostly growing interspersed with *R. kesangiae*. The foliage of this stunning species is among the best in the genus, usually with a thick reddish brown to silvery indumentum on the upper surface and a woolly orange-brown indumentum on

the lower leaf surface. Quite beautiful. The plants were easy to pick out in the forest with their strikingly colored leaves contrasting against the prevalent dark green. Like many of the rhododendrons in this part of the world, this species had smooth and peeling bark. Interestingly, *kesangiae* had very "typical" rough rhododendron bark, one easy way to distinguish it from its close relative *hodgsonii*, another species with smooth and peeling bark. Due to the limited cutting of the fir trees, the forest was quite open and there was a good deal of regeneration of the big-leafs, with young plants of both species forming miniature forests under the protection of the firs and larger rhododendrons. We also noticed an occasional big-leaf species that did not match either parent and assumed that they represented hybrids. The strange thing was that these young plants, always interspersed among larger plants of the two big-leaf species, were identical in appearance to straight *R. falconeri* ssp. *falconeri*, a species known to occur primarily to the west of Arunachal in Bhutan, Sikkim and Nepal. Ken and I had a good look at these mysterious young plants, and to this day we are not certain of their identity, although we are both pretty sure that they are natural hybrids.

Generally, the big-leaf species occur in regions and at elevations where there is sufficient precipitation to support their large size and huge leaves. This sort of habitat is also conducive to a wide selection of epiphytes. In addition to *camelliiflorum*, we found the epiphytic rhododendrons *megeratum* and *leptocarpum* growing in the big-leaf forest. The *R. megeratum* in this area, at the very western end of its range, was very similar to the famous "Bodnant form" of the species in cultivation, with a similar dwarf and compact habit. The small and glossy leaves were also similar and had the same fringe of long hairs around the margin. It is a superb little species with small, cream to bright yellow flowers. The *R. leptocarpum* (formerly *micromeres*) was very typical in appearance compared with what I have seen in other areas. This distinct but relatively nondescript species is possibly the most common epiphytic rhododendron throughout its large range, always abundant in the right habitats if one knows what to look for. Indeed, we had even seen it on Mt. Saramati in Nagaland during the first part of the expedition.

Growing with the *megeratum* was the stunning dwarf evergreen blueberry *Vaccinium nummularia*, here in its typical form and quite abundant. It was always on fallen logs and old snags, its long running underground stems sending forth tufts of its beautiful little round and glossy leaves through and over the entire structure of supporting old wood. Masses of red-fruited *Paris* grew in the shade of the forest floor, as did the occasional clump of *Podophyllum aurantiocaule*, its large red may-apples hanging beneath the yellowing foliage. The deciduous foliage of the climbing and twining vines of *Schizandra* was also yellowing, and provided a colorful background for its long pendant chains of red fruit. Growing at the base of an old stump was a single plant of a relative of the African Violet with beautiful rugose foliage but no flowers. Progeny of this gesneriad later flowered in cultivation and turned out to be *Briggsia muscicola*, a relatively hardy perennial with an evergreen basal rosette of very attractive foliage and long, tubular yellow flowers.

Our guides made a small fire on the side of the road, and we all enjoyed a lunch of ramen noodles mixed with wild mushrooms. At this point it was time for a round of goodbyes with Garratt, Cody, Sue, and Kelly all beginning the long journey home. It had been fun during the couple of days we had together, that none of us had expected, and we had made the most of our limited time. Ken and I, with our guides, all piled into the one remaining truck and continued up the mountain to Nagagg. As we climbed in elevation, the *kesangiae* forest morphed right into *hodgsonii*, the only way to distinguish between them as we drove past in the truck was by

watching the bark, rough in *kesangiae* and smooth in *hodgsonii*, and the buds, rounded in *kesangiae* and pointed in *hodgsonii*. Although the big-leaf rhododendron forest was virtually seamless as we continued to gain elevation, there was a definite small overlap at about 11,000 feet between *kesangiae* at its upper altitudinal limit and then *hodgsonii* at its lowest altitude. Strangely enough, we observed no hybrids between the two species, even in the narrow altitudinal belt where they occurred together.

As we continued toward the border with Bhutan we slowly gained altitude. The rough road ended, as described by our friends, at the makeshift logging camp of Nagagg. The village consisted of a group of small wooden huts surrounding the end of the road, which then faded into a large subalpine meadow. We were at 11,600 feet and surrounded by a forest of *Abies densa*, much of it recently cut for timber. Under the fir trees was a solid shrubby layer of rhododendrons including the species *campylocarpum* ssp. *campylocarpum*, *wallichii*, *fulgens*, *wightii*, *cinnabarinum*, *flinckii* and *bhutanense*, with the dwarf species *anthopogon* ssp. *anthopogon*, *lepidotum* and *fragariiflorum* in the most exposed sunny positions. *Rhododendron hodgsonii* was dominant in many areas, forming a dense understory layer beneath the firs, often to the exclusion of other rhododendrons. It was discouraging but understandable to see the great masses of *Rhododendron hodgsonii* logs piled around the village. *Rhododendron* wood is often the first wood cut for fuel in the mountains of the Sino-Himalayan region because it burns well, even when unseasoned, and is often the only, or at least the most abundant source of fuel-wood. We quickly set up camp in the open meadow, pitching our tents in the fading light along the bank of a brisk little stream. Little did we realize that we had set up camp in a meadow full of the rare and choice *Primula dickieana* mixed with the even rarer *Primula kingii*. Masses of both of these were observed by Peter Cox in this very same meadow during his subsequent visit to this area the following spring. It was a fantastic setting, the surrounding forested hills rising from our meadow campground to unknown mountains beyond. In the fading light, the already surreal fir forest, each close-packed tree with a mere tuft of stiff branches on the top of a tall thin trunk, took on an even stranger appearance, like something out of a Dr. Seuss story. Masses of rhododendrons coated the hills around the meadow, and we looked forward to the dawn with great anticipation.

That night, Ken and I both slept poorly, the temperature dropping well below freezing, and even the last of our scotch doing little to alleviate the shivering as we lay in our tents. Late in the evening, I stepped out of my tent to attend to the call of nature and stood shivering in the crystal clear air. The light from the gibbous moon was bright enough to cast my shadow, and I marveled at the stunning scenery, the frosted ground glowing vividly in the deep stillness of our remote setting. In the morning, our tents and the surrounding rhododendrons were coated with a thick layer of frost that melted away like butter as the sun rose in the clear blue sky.

We left camp and began our hike up to the pass, enjoying the fine weather and tremendous diversity of rhododendrons and other plants. For a long time we hiked through a forest of *Rhododendron hodgsonii,* admiring their great size and abundance. Their smooth and peeling tan and brown bark was beautifully displayed, especially on the larger trunks, and we took many photos. Deciduous shrubs and small trees grew amongst the rhododendrons, the genera *Sorbus* (mountain ash), *Salix* (willow) and *Lindera* (spicebush) being particularly colorful in their fall finery. As we gained altitude, the rhododendron forest thinned out and we entered subalpine meadows dotted with clumps and single specimens of various rhododendrons including *fulgens*, *wightii*, *bhutanense* and, at the highest point, around 12,800 feet, a large grove of amazingly

massive *flinckii*, some up to 25 feet high and reported to have pale yellow flowers. Many of these impressive old specimens were lying on their sides, their great size and weight a disadvantage in the strong winds and heavy snows so common at this altitude. Another great find was the rare *Gentiana gilvostriata*, a prostrate species with large, bright blue trumpets settled snugly into the deep green matted foliage. We could see large splashes of blue on the surrounding hillsides, the huge mats of this species in glorious full display beneath the brilliant sunshine.

On the way back down to our campsite we stopped for tea along the path. The irony did not escape any of us when we had a difficult time finding any running water and were forced to pool the water trickling through the leaves and moss under a grove of *R. hodgsonii*. This was accomplished by the placement of a properly shaped *hodgsonii* leaf positioned to form a spigot into a hastily dug depression deep enough to place the kettle beneath. With a bit of downed rhododendron wood we soon had a nice little fire and cup of sweet tea. After weeks of rice and dhal, we thoroughly enjoyed a quick snack of Velveeta "cheese" and summer sausage, both compliments of Ken Storm who had left all of his food with us before flying home. It was a fine day in a remarkable area along the Bhutan border. Unfortunately though, most of the herbaceous material seemed to have been eaten off by yaks, and we saw very little in the way of *Primula*, *Meconopsis* and other eagerly anticipated genera. That evening we were back in Dirang, reorganizing for our long journey to Tawang the next day.

We left Dirang early in the morning, the continuing fine weather working in our favor as we crossed the Se La once again on our way north to Tawang. This large town is near the border with Tibet and is home to a 400-year-old Buddhist monastery, still standing and fully functional. While visiting Tawang, you can reasonably consider yourself to be in Tibet, the nearby border merely a modern convenience for the dominant Tibetan people inhabiting the area. Fortunately for the inhabitants of Tawang and surrounding areas, their position on the Indian side of the border saved them great misery both when the Chinese occupied Tibet and during the Cultural Revolution. A few miles further north and the monastery would have been destroyed like hundreds of others in those horrible times, their monks imprisoned or killed. The drive north from Dirang was very scenic, with distant views of high snowy peaks and lots of interesting plants along the road. Even from the truck we could spot the golden-colored great whorls of leaves that announced the remarkable *Meconopsis paniculata*, its fruiting stalks rising up to three feet. As we drew near to Tawang, we spotted a rhododendron different from anything we had seen up to that point. A quick stop revealed long and narrow leaves with a thin indumentum overlying a somewhat glaucous white coating on the lower surface. It was *Rhododendron neriiflorum* ssp. *phaedropum*, here seen in its typical and "pure" form, unmixed and unconfused with any of its close relatives, such as *floccigerum*, as I have so often observed while plant hunting along the Salween River in western Yunnan. The dissection of a few buds revealed bright red flowers awaiting spring. This form had remarkably long and narrow leaves, reminding me of certain forms of the species *makinoi* or *roxieanum* var. *oreonastes*.

In Tawang we stayed in a newly opened but rather dreary and grungy (even by our standards) "tourist hotel". It was strange to see such an establishment advertised in this remote place because it was still extremely difficult to get a permit to go to Tawang, and there were definitely very few, if any, tourists in this part of India. (I must say that one of the greatest of secondary benefits of my travels is to see these remote regions before the hordes of backpackers arrive.) We paid a quick visit to the monastery, touring the small museum and main hall housing a three-story Buddha. We also observed several very prominently displayed pictures of the Dalai Lama,

something you would never see in Chinese-occupied Tibet. As the evening closed in, we went into town looking for a meal. As we wandered around the small "downtown" our guides suddenly began spouting salutations at a group of people walking toward us. It was another small group of guides and drivers along with two western women. I suddenly realized that they were the first people that I had seen from the west, outside of our own small group, since we left Delhi almost five weeks earlier. We talked for a while, and it turned out they were professors of Buddhist studies from a small university in Colorado. They were rather surprised to learn where we had been and where we were going because they had not been allowed to leave the confines of Tawang itself. They had hoped to be able to get into the countryside and to visit some of the other regions of Arunachal, but were being closely watched by the officials. We agreed to have dinner with them and ended up having a very enjoyable evening.

The next day we spent the morning exploring the surrounding hills and saw many of our old favorites, including lots of large *Rhododendron arboreum*. The most interesting rhododendrons were the strange, but lovely, *keysii* and another population of the former Bhutanese endemic big-leaf, *kesangiae*, which we now realized was abundant throughout the western edge of Arunachal Pradesh. There was nothing terribly new or exciting here, but we were happy to have made it to the relatively famous town of Tawang and its surrounding, mostly unexplored region on top of all of the other regions we had visited. By now, we had laid out our plans for our last couple of days in India. We decided to head for a completely different area: we would go south to the Khasi-Jaintia Hills, driving all the way to Shillong, an old British colonial hill station, which in that era was the capital of greater Assam. It took the rest of the day to drive back to Dirang and we crossed the 13,700 foot Se La for the last time just as the sun was setting, stopping many times to photograph the striking clouds, colors and scenery. Later that night I realized that we were no longer worrying over or even looking at the sudden crumbly edges of the various one-lane dirt roads upon which we constantly traveled, roads where a thousand or more feet of air was often the only thing between you and the next hard ledge. We had been doing this for too long.

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Part 6: SOUTH TO MEGHALAYA

In the morning, we left Dirang for the last time, driving down the same valley we had come up so many days earlier. We realized then what we had missed on the way in due to driving up in the dark. Beautiful waterfalls cascaded from the high cliffs as we drove out of the mountains along the twisting roads, back down to the hot plains of Assam. Along the way we stopped to observe nice colonies of the rhododendrons *griffithianum* and *grande*, as well as one species that we had not seen up until this point, the dwarf vireya *R. vaccinioides* growing, as it typically does in the Himalaya, upon vertical shaded and mossy cliffs. Although not much of a show-stopper in flower (the small white blossoms are barely noticed among the foliage), the tiny, glossy leaves are densely arranged upon the attractive compact little plant. Various ginger-lilies (*Hedychium* spp.) graced the moist cliffs overhead, their stunning large and fragrant, white, orange or yellow flowers boldly emergent from the dense vegetation. Long arching stems of pink-flowered *Agapetes* hung over the road, taunting us as we hurried on our way, the next destination calling.

That evening we were back in the tropical climate of Assam, half the distance to Shillong in the state of Meghalaya, the last of the Seven Sisters of northeastern India that I would be visiting on

this expedition. We made it to Shillong in the early afternoon of the next day, searching the large (to us) city for a nice hotel where we could spoil ourselves for the last two nights. As I have already mentioned, Shillong was a hill station in the British colonial era. During the summer monsoons, the relative coolness of its hilly terrain at 4,900 feet made it an ideal location for the local Scotsmen, who managed the area's tea plantations and governed the entire territory, to escape the heat and pestilence. It is a picturesque city full of old churches and cathedrals, with some fine examples of old colonial architecture still intact. The city and surrounding region are often called "The Scotland of the East", the pine-covered hills said to resemble the Scottish highlands. Shillong was completely rebuilt following its destruction in 1897 by an earthquake measuring 8 on the Richter Scale but is still one of the largest cities in northeastern India. Close to half a million people inhabit the city and surrounding villages.

Just outside of the city lies the peak of Shillong, at 6,447 feet (1,965 meters), the highest mountain in Meghalaya. Although the top of the mountain is now an Indian Air Force base, tourists are allowed to drive to the top of the peak to enjoy the scenic views. Although most of the forest has been destroyed for military reasons and fuel-wood, we spent several fruitless (pun intended) hours looking for rhododendrons and anything else of interest. We hoped to find at least the maddenias *Rhododendron formosum* and its highly fragrant variety *inequale*, both of which had been collected in this region by Peter Cox back in 1965. Sadly, the forest was either gone or seriously degraded and we saw very little other than some hacked on and cutover specimens of the ubiquitous *Rhododendron arboreum*. This was a bit of a shock since Sir Joseph Hooker had noted in the late 1800s that the Khasia Hills, as they were known at that time, were floristically richer than any region he had ever explored. On the very top of the mountain was a stark reminder of the former floral glory of these mountains. Small shacks lined the parking lot provided for the crowded viewpoint. The typical assortment of items was available – crisps (potato chips), boiled eggs, roasted ears of corn, bottled water and sadly, remnants of wild-collected orchids representing many ornamental and popular genera. I noted species of *Coelogyne*, *Pleione*, *Cymbidium* and *Dendrobium* among others, all in full bloom and all stripped from the surrounding hills.

The next day we spent the morning driving to the village of Cherrapunji on the very edge of the Shillong plateau southwest of the city on the border with Bangladesh. This and the nearby village of Mausynram are the wettest inhabited places in the world, with an average of 450 or so inches of rain per year, almost all of which falls during the summer monsoon. (I guess we felt like we had not had enough rain in Arunachal!). Moss, algae and fungus seemed to grow over everything, and the entire region seemed quite miserable, even by our now greatly reduced standards. These small villages lie on the very edge of an amazing high and relatively level escarpment overlooking the delta plains of Bangladesh thousands of feet below. On a clear day, it is reported that you can see both the Ganges and the Brahmaputra as they make their way to the Bay of Bengal far to the south. The escarpment drops straight off at its edge in a series of lofty vertical cliffs that wind for miles along the border. Long ribbon waterfalls plunge from the plateau all along this edge, many of them grouped together and often a thousand or more feet in height. Thick swirling mist prevented our viewing even the cliffs below our feet and so we drove around awhile looking for plants. Later that afternoon, on the way home, a quick stop at the Cherrapunji viewpoint rewarded us with a brief and rather limited view of the cliffs, waterfalls and distant floodplains of the delta. In a flash, the churning murky mist once again obscured our view and we drove back to Shillong, our last day in the field ending on a rather somber note.

The next morning we left for Assam, leaving the mountains behind as we began our long journey home. As always, numerous problems arose as we strove to keep our schedule, the simple act of going home a constant struggle against bad roads, the weather, the vagaries of various officials and one incredibly close call when we narrowly missed a head-on collision with a large truck bearing a single headlight as we raced along an unlit road in the black of the night (at that point Ken and I shared a forced grin – it was definitely time to go home). A couple of days later we were back at the Guwahati airport saying goodbye to our friends, realizing that we had all shared in a great adventure. We had explored and experienced a large portion of the Seven Sisters, seeing and doing more in five weeks than most people would think possible, or sane. It had been a fantastic journey for me personally, combining two expeditions and enjoying the companionship of two great groups of people. Although the highlights were too numerous to enumerate here, I was especially thrilled with having led the first group from the west to the top of Mt. Saramati, and with all of the excellent work we accomplished in Arunachal Pradesh, horrible weather notwithstanding.

Ken and I parted in Delhi. Our families and lives were waiting.

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