

In Bornean Rainforests: Exploring the Flora

Peter Ashton

At twenty-three years old, I found myself on an open-aired launch, motoring from the island of Labuan, off the northern shore of Borneo, and entering the humid mouth of the Brunei River. The riverine settlements near Bandar Brunei, the capital, sprawled before me. Houses and other structures rose on stilts, interconnected with bridges and walkways that formed a vibrant and densely populated community, all above water. Boats crisscrossed in every direction. It was 1957, more than two decades before I would be appointed the sixth director of the Arnold Arboretum, and I was arriving in Brunei to work as the first official forest botanist for the Bruneian government. At the time, I could scarcely have predicted that this would mark the beginning of five years working under the auspices of Omar Ali Saifuddien III—the Sultan of Brunei—or, for that matter, that it would mark the beginning of a lifetime of research on the forests of northern Borneo.

At Bandar Brunei (now known as Bandar Seri Begawan), I was welcomed by Bertram (Bill) Smythies, who held the title of state forest officer. Bill was the author of classic texts on the birds of Burma and Borneo. His father and grandfather had been botanists in the Indian Forest Service, and as he stood, awaiting my boat on the north side of the river, I could immediately see that his gaunt and sinewy physique had been shaped by his ceaseless fieldwork. During World War II, he had been protected behind Japanese lines, within Kachin longhouses, while he continued his research in northern Burma. I later learned from my local team members that he spoke their language (Iban) so fluently that, were he hidden from view next door, he would not be recognized as a foreigner.

By comparison, I was exceptionally new to this world. My first and only prior field experience occurred in 1954, at age twenty, when I spent my freshman summer with two friends on the northern bank of the Amazon River, near Monte Alegre, Brazil. Before that, my only

expeditionary qualifications had been on family holidays in France and Italy. I went to Brazil as an entomologist, and I returned with a keen interest in forest botany. John Corner, a professor of tropical botany at the University of Cambridge, encouraged my new enthusiasm, and he promised to pass on any leads about career opportunities for a budding field worker.

Thus, my arrival in Brunei. We would be leaving for the Temburong River the following morning, Bill informed me. This river flows through the eastern portion of Brunei—which is divided into two noncontiguous sections—and once we departed from the capital city, familiar accommodations would be scarce. Bill scrutinized my appearance—athleticwear that, in retrospect, was more suited for camping in the English countryside—and he pointed me in the direction of a provisions store. “You had better go and buy some clothes,” he said.

As a new forest botanist, I had been charged with gaining field information about the tree flora of a region slightly larger than Delaware, concentrating on the dominant tree family, Dipterocarpaceae. Dipterocarps are colossal monarchs of the paleotropical rainforest, dominating the overstory. Over the previous half century, they had become the leading source of general-utility timber, and they also provided quality hardwood for flooring and decks. Because dipterocarps were entering the regional export market, I was to provide preliminary information that would guide sustainable management for this timber. I had visited the herbarium at Royal Botanic Gardens, Kew, near London, to read up and see examples in the herbarium. But the specimens revealed a diversity of foliage that was unfamiliar and complex. My knowledge, at the start, was little more than rudimentary.

Before my departure from Bandar Brunei, I learned that my office in town lacked botany books and that no tree flora for Borneo had been published. Moreover, the herbarium at the office consisted of a closet with a small col-



PHOTOS BY AUTHOR FROM ARNOLD ARBORETUM ARCHIVES UNLESS NOTED



MAP BY PETER ASHTON, ARNOLD ARBORETUM, AND GIS COMMUNITY

Ashton arrived at Bandar Brunei (now known as Bandar Seri Begawan, top left) in 1957. His research in the Bruneian forests between 1957 and 1960 focused on overstory species like this giant dipterocarp, *Shorea longisperma* (top right), and followed routes mapped in red.

lection of specimens, mostly from the 1930s. I needed help, so Geoffrey (Geoff) Wood, a forest botanist from adjacent Sabah—now a state in Malaysia—came down to be my botanical tutor for the first three months. Geoff had hurt his leg in a field-hockey game before the expedition, causing his ankle to swell painfully, but he was nonetheless a tireless worker, and his field experience proved invaluable.

It took us three days to reach Kuala Belalong, the fork where the Temburong River meets the white waters of the Belalong River, deep between hills that rise nearly 2,000 feet (600 meters), enshrouded in mighty emergent trees. I had learned much on the way up: I now knew that my life would revolve around an outboard-driven prahu (dugout canoe). I knew that I needed to learn the lingua franca Malay, and fast, and that Iban would be useful as well, given that I would spend day and night with a team of Iban lads near my own age: Ladi anak Bikas, Asah anak Unyong, and Naban (whose paternal name I do not recall, because we worked

together more briefly). The Iban are members of an inland minority on Borneo, known collectively as the Dayak, which includes major groups that speak distinct languages. Later, an older and more experienced Iban collector named Sengelang anak Nantah joined my team. Given his considerable experience and wisdom, I called him Apai, meaning Dad.

My field companions possessed an optimistic, energetic and ribald self-confidence. That first evening and night was both exciting and reassuring. My companions were endlessly helpful and friendly, although already detecting opportunities to pull my leg. The rush of the rapids, with the calls of the evening cicadas, frogs, and birds, was both exotic and inviting.

I was already familiar, from student days, with the customary method of collecting botanical specimens and inserting them in wooden presses to dry, but the special requirements of doing so in dense forest under a climate of intense humidity and heat was challenging. The aim

TIMOTHY CHARLES WHITMORE



The field team (from left) included Asah, Naban, Ashton (wearing his indispensable leech socks), and Ladi.



Ladi demonstrates how diagnostic notches are made in the trunk of a large dipterocarp species, *Shorea slootenii*, using a parang. At right, a leaf is shown with the notched trunk of *Dipterocarpus conformis*.

was to collect eight quality vouchers of every tree in flower or fruit, to send to regional herbaria, as well as to leading herbaria worldwide, including at Leiden University, Kew, and yes, the Arnold Arboretum—my first introduction!

As a newcomer, the challenge of identifying giant trees, towering more than 200 feet (60 meters) overhead, quickly introduced me to the parallel world of Iban forest botany—a world very independent of the formal plant science of a western university. Flowers provide the best means to identify the botanical family, using methods devised by Linnaeus, but discovering fallen petals (or fruit) was rare. Canopy species only start to flower once their crown is in the sun. Few Bornean species flower annually, and some go many years without. If they do flower, however, it is most likely between the two wet monsoons, in and around April, when sunny

periods of a few days are frequent in most years. So this was always the time to plan major collecting expeditions, and it was, in fact, around this time that our trip commenced.

As I began to grasp a little of the Iban language, I started to ask Asah for help. Asah's approach was, first, to note the overall bark appearance, observing its color and whether it was smooth, flaky, fissured, or otherwise. He would then slice into the bark. He would smell the wood, look for sap or latex, and note the overall color of the inner bark and sapwood, as well as the presence of radiating pale lines (known as medullary rays). For this purpose, we all wore a parang at our waist—a short, sharp blade resembling a billhook without a bill, crafted by a blacksmith from a truck spring. (Parangs were also used for cutting paths and much more.) These wood and bark character-

istics provided enough information to home in on the family and often the genus, for which Asah and the other collectors would often know an Iban name.

Eventually, I learned that nearly all species could be identified on the basis of their leaf and petiole morphology, at times with the added assistance of trunk characteristics or a fallen twig fragment, without requiring flowers or fruit. Bill and I would bring samples back to the camp for Geoff to examine. In addition to providing a loose identification for the specimen, he could tell us whether something had already been well-documented with other herbarium collections. With this guidance, we knew what to collect.

At this point, the fun really began. Asah, Ladi, and Naban were extraordinary tree climbers. (We *never* needed to fell a tree to collect specimens.) The men would clasp the trunk in a crouched position, using their arms and the soles of their feet, and then stretch up to embrace the trunk again. The trunk needed to be sufficiently slender to clasp, so if the target tree was too large, the climber sought out a smaller tree nearby. He would climb this neighboring tree until the stem began to bend, and then, using his weight to swing the crown of his tree back and forth, he would lean towards the next tree and hook a long, forked pole (known as a *penyulok*) around a branch. He could then tie the lower end of the *penyulok* in place, bridging the two trees. By hauling up a new *penyulok* on rattan cord, the procedure could be repeated until the main branches of the emergent tree were reached. The rest depended on confidence, agility, and iron will!

The twigs, once dropped from on high, would be tied in bunches and placed in large plastic bags familiar to field botanists. I initially learned the Schweinfürth method of preparing specimens, which was developed for wet, hot climates in the region by Dutch botanists. The method requires rustproof metal containers, which were made by local tinsmiths. These were designed with a cross-section large enough to fit specimens, which were entered between sheets of newspaper. It was both surreal and entertaining, in the gloaming of a rainforest evening, to spend moments reading the goings-on in the local newspapers from seaside locales

near Los Angeles—Santa Barbara, Laguna Beach, Ventura—from where they had been exported as packing material. The packed specimens were then doused with a mixture of 90 percent ethyl alcohol, fortified with formalin and mercuric chloride powder, which helped to preserve the specimens until they could be dried in presses at the herbarium and dispatched or mounted.

Bornean forests are not dangerous places, so long as care and discretion are the rule. Beyond villages and longhouses, mosquitoes and sandflies (no-see-ums) are confined to the riverbanks. Leeches are a perpetual pest, but they can be excluded by wearing gabardine knee-length stockings. Dangerous animals are few, although I did manage, a few months later, to step on a pit viper, after which Ladi carried me on his back for two days across high hills to the boats. Nevertheless, inland roads were scarce, and ascending white-water rivers presented a perpetual hazard. Moreover, the dense forests of undulating lowlands created conditions where one could easily get lost, especially on cloudy days, when the sun provided no bearing.

Scarcely two months into my time in Brunei, however, I learned a sobering lesson about backcountry perils. The mixture of chemicals used for the Schweinfürth were dangerous, even to the touch. I would later search for an alternative, but tragically, while we were breaking camp in the Andulau hills—near the coast, west of Bandar Brunei—a five-gallon drum of ethyl alcohol, standing too close to a camp fire, exploded on Geoff. One of our Iban assistants ran for help and managed to secure an Australian roadbuilder with a short-wheelbase Land Rover, in which we carried Geoff, fifteen miles along the beach at high tide, to an oil-field hospital. He did not recover. The experience was traumatic, and I recall riding with Geoff's climbers—Kadazan men from Sabah—to the little graveyard in Kuala Belait, on the western coast of Brunei. All of us wept. The Kadazan collectors returned home, while I would return to the field. Geoff, who I had not known before, was patient and immensely knowledgeable. We had shared long evenings of relaxed banter under canvas, and he could not have been a better instructor in the art and science of tropical forest botany.



GEOFFREY WOOD



SPECIMENS FROM HARVARD UNIVERSITY HERBARIA

Collectors on a later expedition in Sarawak rest while setting up camp (top left). Schweinfürth tins—used for preserving herbarium specimens—are stacked in the foreground. Asah and Naban are photographed climbing *Shorea curtisii* (top right). Asah has reached the basal branch of the crown; Naban is positioned about halfway up the trunk, where a small neighboring tree has been bridged with the *Shorea*; and Ashton stands at ground level. Ashton sent specimens to the Herbarium of the Arnold Arboretum, including *Shorea amplexicaulis* (fruits at right) and *Shorea laxa* (at left)—both collected in 1958.



The tidal rivers of Brunei are inhabited by taxonomically diverse mangrove species like *Avicennia alba* (top), *Heritiera globosa* (along with nipa palm, *Nypa fruticans*, bottom left) and *Rhizophora apiculata* (bottom right). Notice the unusual seedlings of the *Rhizophora*, which germinate and produce long drooping stems while the seeds are still attached to the parent plant.

Brunei is a small place, and most collecting trips took only a few days, although even those entailed slow travel up small rivers, with a nightly welcome in longhouses or forest camping beneath waterproof flysheets. Once a year, throughout most of my five years in Brunei, I took advantage of expected drier times in April to mount a major expedition. (I did the same in other parts of Borneo over the subsequent five years, amounting to six expeditions in all.) The first, undertaken when I had been in Brunei just over one year, tried my organizational and leadership skills and proved among the most eventful. Not only had my familiarity with the trees grown substantially over the previous year, but I had also learned sufficient Iban to get the gist of the endless exchanges of robust humor in the boats as we travelled. My knowledge of Malay was growing as well.

My first long backcountry expedition targeted Brunei's highest mountain, Gunung Pagon Periok, which is a steep sandstone slab that rises over 6,000 feet (1,850 meters) at the cascading headwaters of the Temburong River in the eastern portion of the country. We would access the peak via a montane ridge in nearby Sarawak. With that elevation, I suspected that it should be possible to collect within all equatorial forest types, which are differentiated according to altitude. Pagon is visible on the horizon from Bandar Brunei, the capital city, but although it is hardly more than fifty miles distant, I knew from aerial surveys and maps that it would take many days to reach.

The length of time we could spend hiking in the rainforest depended on the number of field assistants required to haul equipment and food, especially rice. The basic backpack is a *selabit*, woven from rattan. Its base fits snugly in the small of the back, while the top reaches the crown of the head. For a two-month trip that required overland travel, we would need about fifteen field assistants—recruited along the way—in addition to the Iban climbers. Before heading towards Pagon, a day was spent shopping for sufficient food to last six to eight weeks: rice, cooking oil, salt fish, little red onions, chilies, and all-important matches and kerosene.

I departed Bandar Brunei with Apai and Ladi, winding through vast mangrove swamps in an outboard prahu. We crossed the Bay of Brunei and entered the mouth of the Limbang River, whose valley separates the two halves of Brunei. This swamp, bordering the whole extent of the bay, harbors an exceptionally diverse flora, as well as a rich fauna including the notorious long-nosed, white-faced proboscis monkey (*Nasalis larvatus*). We then continued up the winding river through fertile floodplain farmland, to the large and elegant Iban longhouse of Tanah Merah. We were welcomed with a ceremonial bowl of *tuak* (rice wine), which was followed with a dinner of rice and chicken, loaded with plenty of chilies, and traditional dancing in the evening. I was cajoled into attempting a sword dance, which caused much hilarity.

We managed to attract six enthusiastic assistants and a second outboard prahu, and we set off early again upriver. On a daily wage equivalent to my climbers (but lacking their field allowance), these recruits soon became socially part of our team. About midday, the current quickened, the occasional rapid had to be maneuvered, and the hills began to close in on both sides. We were now in the country of the Murut, a different ethnic nation from the Iban, but with a long-standing friendly relationship. When we stopped in a village, our welcome was subdued, as many were away, tending to their paddy farms. We spent our second night in one of their longhouses, which smelled strongly of rancid *tuak*—a sign that harvest festivities were over. We did succeed, however, in gaining another motorized prahu and a second contingent of young woodsmen so that our party, now fifteen, was complete.

At noon on the third day, we reached Nanga Medamit, the tributary that drains the western flanks of Pagon. We pulled the prahus up the hillslope above the river, above highest flood levels, packed our equipment and food into *selabits*, and ascended the steep slopes to the ridge where we set up camp for the night. This gave me my first opportunity to chat with the Muruts, who were more reserved than my boisterous Iban companions. I had planned to use the expedition to start recording medicinal plant uses. One Murut seemed quite knowl-



On the way to Gunung Pagon Periok, Ashton encountered a lower montane forest, known as *kerangas*, for the first time. During subsequent fieldwork in *kerangas* forests, Ashton photographed lipstick palm (*Cyrtostachys renda*, left), named for vibrant red leaf sheaths that do not appear in the photograph, and Borneo kauri (*Agathis borneensis*, right) a member of the coniferous family Araucariaceae. A Malay collector named Karim is pictured.

edgeable about plants, but, on seeking his experience, he answered that, although his people were unsurpassed in their knowledge of plants that increase the hunting and sniffing skills of their dogs, all that they knew for humans concerned poisons.

The following day, we successfully shot a fat boar, the Bornean bearded pig (*Sus barbatus*). Some was consumed on capture but most was boiled with salt and stored for the weeks to come.

Time being limited, we decided to collect little until our base camp was achieved. This gave us the opportunity to observe changes in forest structure and flora as altitude increased. We followed the ridge upward, trading the sounds of the water for the occasional ghastly cackle of the helmeted hornbill (*Rhinoplax vigil*)—a call that now brings back happy memories. We

came upon a large water-filled wallow that, I was assured, had been made by a rhinoceros—the little two-horned species (*Dicerorhinus sumatrensis*), also found in Sumatra. In late afternoon, we scaled a small peak, about 2,100 feet (650 meters) high, where I detected an upper dipterocarp forest for the first time, just below the cloud base. These trees were shorter of stature with unfamiliar species including a dipterocarp that later proved new to science: *Shorea flaviflora*.

The next morning, we started an ascent to about 2,800 feet (850 meters), which led us into a lower-statured woodland, lacking emergent trees but with a profusion of trees in the oak family (*Castanopsis*, *Lithocarpus*). This was my first experience of a lower montane forest. It differed from textbook descriptions in its open canopy and dense understory of pole-sized trees. I later learned this was a forest type

known as *kerangas*, which is widespread on Bornean mountains. The going got steeper as we approached a high spur, where, at 5,700 feet (1,750 meters), the trees were hardly more than head height. Everything, including the contorted branches of the trees, became so carpeted in moss that their dwarf crowns could hardly be distinguished from the ground, giving purchase to spectacular orchids and occasional rhododendrons (*Rhododendron* sect. *Vireya*). This was the upper montane forest, daily immersed in fog, dripping, and so unnervingly silent that our voices hardly carried more than a few yards. We sought out a campsite while Apai and Ladi pressed on, cutting through the vegetation with parangs. The only visible way through was a tunnel made by wild boar. So thick were the moss tussocks that we had to stay two more nights while a passage was cut to squeeze through with the baggage.

We set up our permanent camp in an ecotone between lower montane *kerangas* and upper montane thicket, where we could see the base of Pagon's imposing sandstone slab, with its

flat densely wooded southern slope facing us. We spent three weeks there, exploring, collecting, and setting out one-acre plots (we had not become metric in those days), which we fully censused. We scaled the perilously narrow summit ridge, which bore a short shrubby thicket, with little in flower. But the forest around the camp yielded exciting new discoveries including, amazingly, a new dipterocarp, which I would name *Shorea monticola*.

After nightfall one rainy day, we saw a curious pale globe of light, less than a meter in diameter, moving slowly downhill through the distant trees, eventually disappearing. Could it have been a form of ball lightning? It did not last long, and my campmates were unperturbed, casually explaining it to be a benign forest spirit, going about its business.

After five weeks in the forest, rice was beginning to run low. We had to retain enough supplies for our return when the weight of the food would be replaced by that of the full cases of specimens. Because we had accessed the mountain



The collectors viewed the sandstone slab of Gunung Pagon Perioik, with its steep slopes carpeted with upper montane forests, from their ridge of approach in early morning.

from the Limbang River—which runs through Sarawak rather than Brunei—I discussed return options with Apai and our other teammates and was attracted to the idea, if possible, of continuing southeast with a few of our most energetic team members to access the Temburong River headwaters, which we would follow until the stream became navigable. This area had been explored by an oil geologist thirty years earlier, but it was otherwise unknown to western researchers.

Apai confidently assured me that, upon reaching the Temburong, a bark raft could be constructed. So the main party returned the way we had come, carrying most of the baggage, while Apai, Ladi, one Murut assistant, and myself bid them farewell and set off, lightly equipped with five days of rice and other basic foodstuffs. That first day we made a steep descent of the northern slope of Gunung Pagon Periok to a ridge that connected to a lesser peak, known as Bukit Retak. Apai suggested that we should scale this peak to search out our

route and possibly spend the night on the summit where we could usefully commune with mountain spirits. I succumbed to the idea, so we spent a soggy fog-enshrouded night beside a summit dewpond—but to no avail. We camped in an open valley the next evening and spent the following day scaling Bukit Lesong, the northernmost of Brunei's mountains, where I found another dipterocarp of unfamiliar leaf shape (which I would later know as a species of *Vatica*). Because we were traveling light, we had no means to collect specimens.

On the following day—our third since leaving the others—we descended for five hours and came on the main Temburong stream, but it was flowing over massive boulders and was far too steep to attempt navigation. We followed it until evening, and at daybreak the next day, we searched for a tree with suitable bark for a raft. No such tree was to be found, so we felled the next best. The result was riverworthy but pliable, resembling a giant banana skin. We had not gone far that morning when we heard a



After Ashton and his team finished their fieldwork near Gunung Pagon Periok, they descended towards the headwaters of the Temburong River, photographed on a later trip near Kuala Belalong.



Within the forests of the Temburong District—the easternmost enclave of Brunei—Ashton observed large overstory species like *Anisoptera costata* (left), which is a member of the dipterocarp family (Dipterocarpaceae), and *Tristania whiteana* (right), a member of the myrtle family (Myrtaceae). An Iban collector named Mujah is pictured.

massive clap of thunder over the mountains to the south and soon noticed a rise in the waters. We leapt to shore, dragging our craft as high up the steep hillslope as we could. Within little more than a minute, the waters had gone up fifteen feet, swirling, carrying whole trees, the rocky bottom shaking and rumbling.

No further travel was possible until the following day, when the flood had somewhat subsided but the current was still strong. We proceeded with caution. Ladi and I had ascended the Temburong some months earlier, and we were stopped by a two-meter waterfall called Wong Uan, which was practically impossible to portage or descend. Below it, a cataract known as Gerugu Rimau raged between the cliffs. We knew we were getting close. After little more than one hour on the river, we rounded a bend, and Ladi and I recognized the terrain—only too

late. We leapt into the torrent, while our Murut assistant attempted to haul in the raft by its attached cord. All to no avail. The raft turned, bent in two, and flipped over the fall, and within it our clothes (including our shoes!), our remaining food, and our parangs—everything. The three of us crept to the edge of the fall and looked down. All that came up, turning in the whirlpool, was Apai's bamboo cigarette container which, after rescue, revealed five vital matches.

Our only option was now to find the nearest Iban longhouse, several days walk downstream. We rested, and the next day—the fifth since we left the main party—was a disaster: showery, cloudy, with no clear view. Walking barefoot in the rainforest proved easier than I had imagined, but in late afternoon, we began to identify bent twigs with which we had marked our morning

trail. We had turned in a complete loop. We set up a shelter by snapping off leaves from a fan palm (*Licuala*), and we found dipterocarp resin within a hollow tree, which, with some tinder, allowed us to start a fire. We spent that night toe-to-toe around the flame.

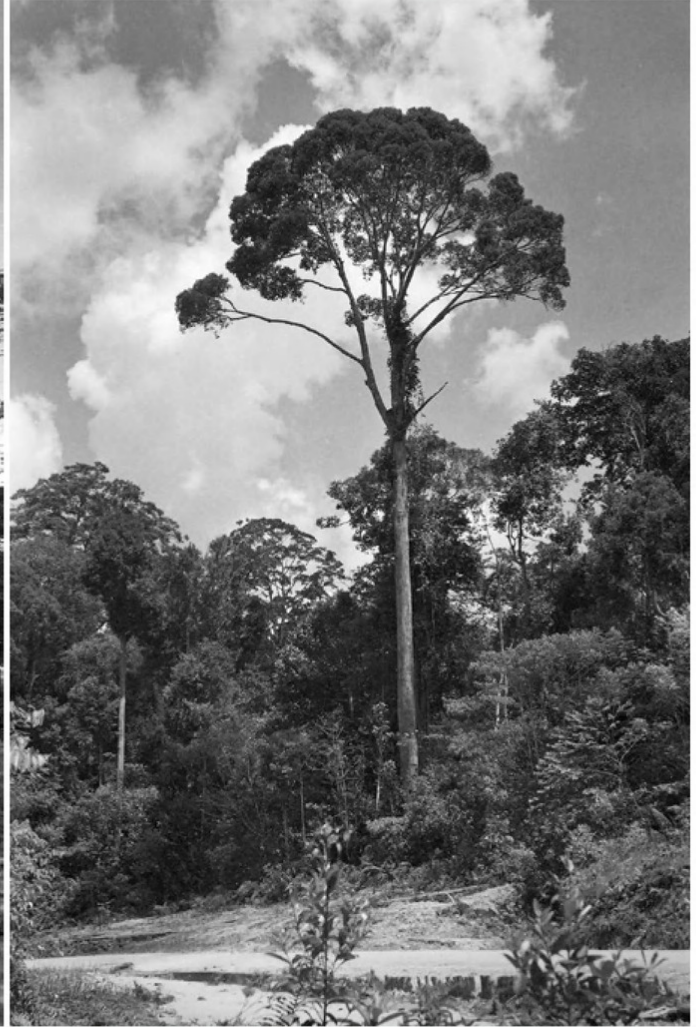
The following morning, the sun revealed clear blue skies, so Ladi, climbing a tree, was able to discern the best way forward, bypassing a major turn of the river down to its confluence with a stream called Nanga Temburong Machang. By this time, Ladi was getting exhausted. We crossed the river, which had begun to subside, and Apai and our Murut assistant left us, floating on a log down the rapids in search of help. Ladi and I lit a fire with the last matches. We had plenty of water to drink, but food was sparse: some young turtles, which were exceedingly chewy after we cooked them in their shells, and the sweet and familiar fermenting pulp from the fallen fruits of a giant leguminous tree. We even took to eating clay to fill our stomachs, which turned them to cement.

We waited and waited. Three days passed. Ladi became increasingly concerned and eager to find a floating log himself, but I discouraged him. Then, on the fourth day, the distant noise of an engine could be heard, coming, then going. That's an airplane, Ladi said in sad conviction, but I was more confident. Sure enough, after a long wait, around the river bend came a prahu manned by my friend Penghulu Gimang (an upriver chief), with his son Jah. They had been alerted by Apai and his Murut companion, and they brought a feast: salt fish, over which they poured condensed milk. Never, ever, have I tasted anything so delicious! We descended the river, stopped at Gimang's longhouse, and then proceeded down to the estuary and across the bay to the capital. On the way, we noticing occasional shirts, towels, and other flotsam high in the branches of the overarching trees.

This initial immersion in Bornean forest botany lasted twenty-six months. During that period, Ladi and Asah became my friends for life. (We



Wong Uan, a waterfall on the Temburong River, stranded Ashton's team without supplies. It was photographed here at more placid conditions in 1958.



Ashton's fieldwork documented 151 dipterocarp species in Brunei, including species like *Dipterocarpus lowii* (left), and *Shorea rubella* (right), which are both considered critically endangered by the International Union for Conservation of Nature.

still communicate from time to time through a Malaysian friend.) We made nearly four thousand collections from which Dutch colleagues at Leiden University would assign over seven hundred scientific names. This was enough for Hasan bin Pukol—curator of our new herbarium in the attic of a local cinema—and I to publish a checklist of trees, which included local names. I also gained enough knowledge of the dipterocarps to publish a manual describing Brunei's 151 species, of which 33 were new and formally named for the first time (only 3 more have subsequently been discovered).

This information would prove essential for future sustainable management and conservation efforts, and, on a personal front, these months in the field provided materials that would become the basis for my doctoral dissertation and a career beyond, including as

the director of the Arnold Arboretum. Along the way, I had come to recognize the floristic and ecological patterns in the forest, and a newcomer—a neophyte, really—had found a way of life. My paleotropical education had officially begun.

Peter Ashton is Harvard University Bullard Professor Emeritus and was director of the Arnold Arboretum from 1978 to 1987. Among many career honors, his research on tropical forests was recognized with the prestigious Japan Prize in 2007. He and his wife, Mary, live in Somerset, England.

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