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Medemia argun Lives!

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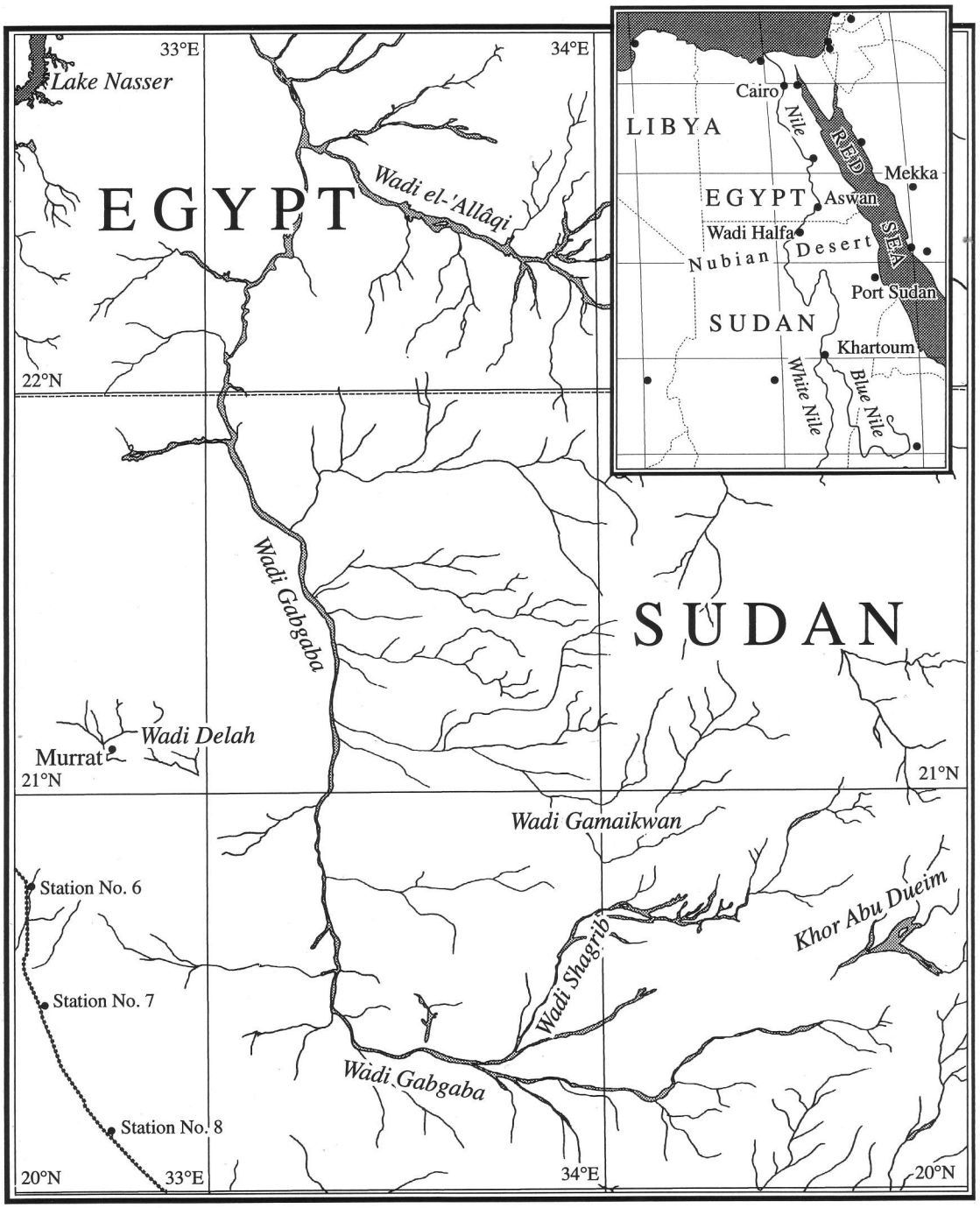
Medemia argun—just the sound of the name, together with the splendid and evocative photographs in Arthur Langlois' 1976 *Supplement to Palms of the World* has captured the imagination of every self-respecting palm enthusiast who has chanced upon them. The fact that it was well known to the ancient Egyptians but recently feared to be extinct, or at best, on the very edge of extinction, added even more mystique to this very special palm's reputation, and set a challenge to plant hunters to prove its continued existence in today's world. It had not been reported since two isolated trees had been discovered in oases in southern Egypt by L. Boulos in the 1960s (Boulos 1968), and the story of their discovery forms the basis of Langlois' account. It makes exciting reading. In its native country, the Sudan, *Medemia* had not been recorded since 1907 and Genera Palmarum (Uhl and Dransfield 1987) reports that ". . . it appears to be on the verge of extinction if not already extinct."

We, doubtless along with many other people, had long been thinking about this challenge and just where to begin the search, but the final push came in mid-1995 when Mr. Jean-Yves Lesouëf, of the Conservatoire Botanique National de Brest, France, contacted us, having read about our earlier adventures with *Trachycarpus*, with an offer to pass on all his research papers concerning *Medemia*, on the condition that we mount an expedition. We needed no persuasion and after reading the information he kindly supplied (in fact photocopies of all the many accounts of this palm that have appeared in print over the years), we were convinced that not only was there a good chance of its continued survival, but of our finding it.

Several locations were listed, but one that cropped up time and time again, was "Wadi Delah," near "Murrat Wells" in Sudan, a huge and by all accounts none-too-friendly country, between Egypt and Ethiopia, and where a civil war has been raging for many years. Missing from all modern maps, Murrat Wells turned out to be in the far north-east of the country, close to the border with Egypt and fortunately well away from the fighting.

Our reception at the airport of the capital, Khartoum, in October 1995 was none too welcoming, what with currency declarations, careful scrutiny of our visas, and even a thorough search of our baggage. It turned out that the officials were looking for nothing more sinister than alcohol, since Sudan is a "dry" country in both senses of the word, and finding none, they simply waved us on, and out into the warm Sudanese night. Fate took a hand then, leading us to the Acropole Hotel, *the* hotel in Khartoum, whose Greek owner, George, took a keen interest in our project and was to prove extremely helpful to us. He was not overly surprised by our goal though; nobody goes to Sudan without a reason. It should also perhaps be added at this point that his friendliness and willingness to help was typical of the many people we met in Sudan, and our fears about "hostile natives" were soon completely dispelled. Many—most—people had so little, but were happy to share even the little they had.

We had imagined that it would take some days to get ourselves and our little expedition organized, but George had other ideas, and sorted out photography permits, registration with our respective embassies, currency exchange, supplies, together with a jeep, driver, and co-driver/mechanic, within a matter of hours, and we were ready to leave almost before we knew it. We thus had a few hours left that day and did a taxi tour of the city, but Khartoum has little for the tourist. We saw the confluence of the two Niles, the Blue and the White, a rather poor botanic garden, and just a few palms: Royals, Washingtonias and some others, but best of all, several multiheaded Doum Palms, *Hyphaene thebaica*, fabulous and wonderful trees with dense blue-green foliage (Fig. 1). The temperature was in the high 90°s (30°C).



Map of area where *Medemia* was found.

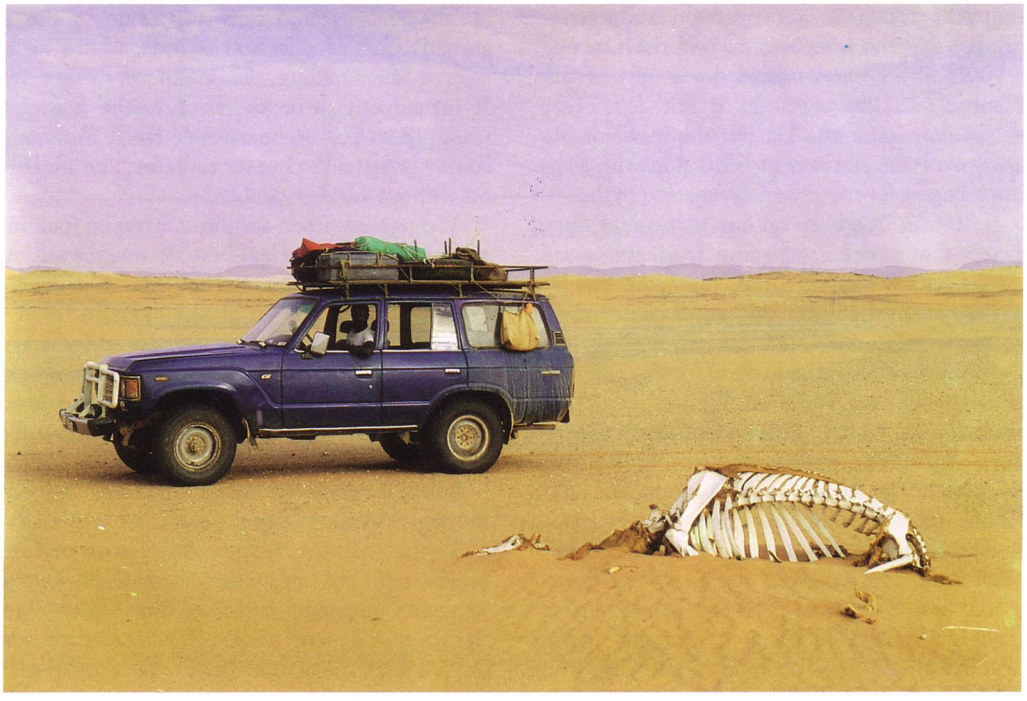
The next morning we set off at 6:00 a.m. while it was still relatively cool. Ramadan the driver, big, black, and with a huge smile and a ready laugh was a real find and we felt in safe hands as we headed north out of the city. Look at any map of the Sudan (see p. 66) and you will see the River Nile running south/north as a narrow, twisting, blue line running through a desert of brown. It was everything we imagined: a broad river lined to a width of 50 m on either side with dense vegetation, mainly Date and a few Doum palms. Beyond this where there is irrigation, there are fields of vegetables and other crops. But farther out there is an arid savannah or thorn scrub and northward, where the climate becomes dryer, only desert. We followed the Nile for many kilometres and many hours, passing through the river towns of Atbara and Berber, hot and dusty places, and at the latter, crossed to the western side on a ferry boat with camels and donkeys as fellow passengers. Several more hours of driving brought us to an area of flat ground away from the river where we stopped for the night, simply spreading out our bed rolls on the desert floor, and sleeping under a canopy of a million stars—no pollution here! During the day the temperature had risen to well over 100°F (38°C) and cooled down only slowly after sunset. In the mornings it felt deliciously "cool" at only 70°F (21°C), but the moment the sun rose over the horizon at 5:30 a.m. the temperature began its rapid and dramatic climb.

By 5:30 a.m. we were on our way again after the briefest of breakfasts, some fruit and some hot, sweet tea. We crossed the Nile again and by midday we arrived at Abu Hamed, a bigger town where we stopped for lunch and to stretch our legs, while Ramadan asked around for anyone who might know Murrat Wells or Wadi Delah. Disappointingly no one did, until a local camel drover was summoned. Yes, he knew them both. We took photocopies of the *Medemia* photographs in Langlois' book and showed them to him. Yes, he knew the palms too, calling them "Dom-el-Delah." Through Ramadan we asked him a hundred questions: how far, how many, how tall. He agreed to take us there for 20 000 Sudanese pounds (≈$30) and within half an hour we were on our way, with our new friend, whose name was Hessen-Ali.

Once out of the town, we left the Nile, which then loops away 320 km (200 miles) to the west, and headed into the desert proper, following a single-track railway that runs all the way to Wadi Halfa, where it again meets up with the river. Sections of the line were so straight they could have been drawn with a ruler on the planner's map, and probably were. The desert itself was not one of soft sandy dunes but rather had a much harder surface, totally dry, very flat, but with distant hills, which we approached and passed from time to time, and outcrops of black basaltic rocks, the very same substance used by the ancient Egyptians for carving their deities, Horus and Hator, which can be seen in many a museum. There was hardly any vegetation and every so often we came across the desiccated skeleton of a camel, the "ship of the desert," a reminder of the uncompromising nature of the climate (Fig. 2). The road, scarcely worthy of the name, was more a collection of tracks in the sand, each driver seeming to make a new set. We were making good time and were just congratulating ourselves on how easy this was all going to be when we began to have problems with the jeep. The daytime temperature was rising to 113°F (45°C) now and the radiator was overheating, caused, we discovered after a look under the steaming bonnet, by a split radiator hose. Roadside repairs were carried out and we limped up the railway line until we came to the next station—just a collection of huts, where we were offered tea, scalding, black and very, very sweet. It turned out to be the hose to the heater that was split so our on-board mechanic, Mohammed, simply isolated the heater radiator, and we carried on without further problems.

We passed other stations, three or four in all, and called in at the last one we would pass. After more tea we left the railway line and drove off into the desert, guided by the camel drover, who seemed to be navigating by the stars and the moon—it was now well after dark—there seemingly being little else to steer by. We spent a second blissful night sleeping in the open and rose at daybreak, racing the sun to be up and away before it cleared the distant horizon and turned the desert into an oven.

There was now no sign of any road or even of other tracks but our guide seemed to know exactly where he was going and after 2 or 3 h we reached the town of Murrat Wells. The reason it is not on any modern maps immediately became clear: it is a ghost town, once apparently a thriving community based on gold mining, but long since deserted when the gold ran out. Buildings, machinery, great iron pumps, and piles of brand new bricks, much of which was marked "Made In England," lay abandoned as though the population



1. *Hyphaene thebaica* above. The seated figure at its base gives scale to this large palm. 2. Bones in the sun, an indication of the harshness of the climate.

had left yesterday, preserved forever by the dry desert air.

The landscape turned into a broad, flat valley, the floodplain of Wadi Delah, and soon in the far distance, through the shimmering heat, we saw our first *Medemia argun* palm, rapidly followed by a second, apart from some dry grass and a few scanty shrubs, the only vegetation to be seen. About 9 m (30 ft) tall, they had an ancient look about them, as though they had been there for centuries, though, according to Hessen-Ali, they are actually quite fast growing. With great excitement we examined them, noting other, smaller specimens farther down the valley, toward which we then drove.

The valley was shaped like a giant amphitheater, entirely surrounded by small, rocky mountains, which displayed a great multitude of colors, from brown, grey, and black, to yellow and red (Fig. 8). Over the ages, the wadi, a seasonal river supplied from these mountains, has formed a vast, nearly flat floodplain of coarse, slightly alkaline sand (pH 7.5). In the short rainy season in summer, vast areas of the valley can be flooded for a short time while for most of the year there is no visible water. Besides the palms, the scarce vegetation consisted of a few small trees (*Acacia* sp.), shrubs, and small patches of grass.

The very next tree we came to (Fig. 5) was heavy with fruit, thousands of plum-sized dark violet to black fruits both on and under the tree (Fig. 3). The thin fruit layer on these is actually edible but only when dry and has a malty, sweet taste and smell, much enjoyed, we were told, by small rodents of the desert, which may thereby assist in their distribution. Cutting the fruit in half revealed a number of thin, red, radiating lines, as though it had been pierced many times with a rusty needle (Fig. 7). *Medemia* fruits do not fall to the ground until they are completely dry, at which time they are capable of floating and may be carried to other areas by the next flood. Leaving the three men to rest in its shade, we continued down the valley on foot to examine the other trees, about 12 in all, together with quite a few seedlings and young plants.

Medemia argun is most closely related to *Hyphaene* and *Bismarckia*. It was first described by Prince von Württemberg in Martius' *Historia Naturalis Palmarum* in 1838 in the genus *Hyphaene*, which in fact we thought it resembles in many respects. We could see for ourselves, however, the number of unique characteristics, such as the absence of a hastula and the distinctive morphology of the seeds that clearly support its being in a genus of its own.

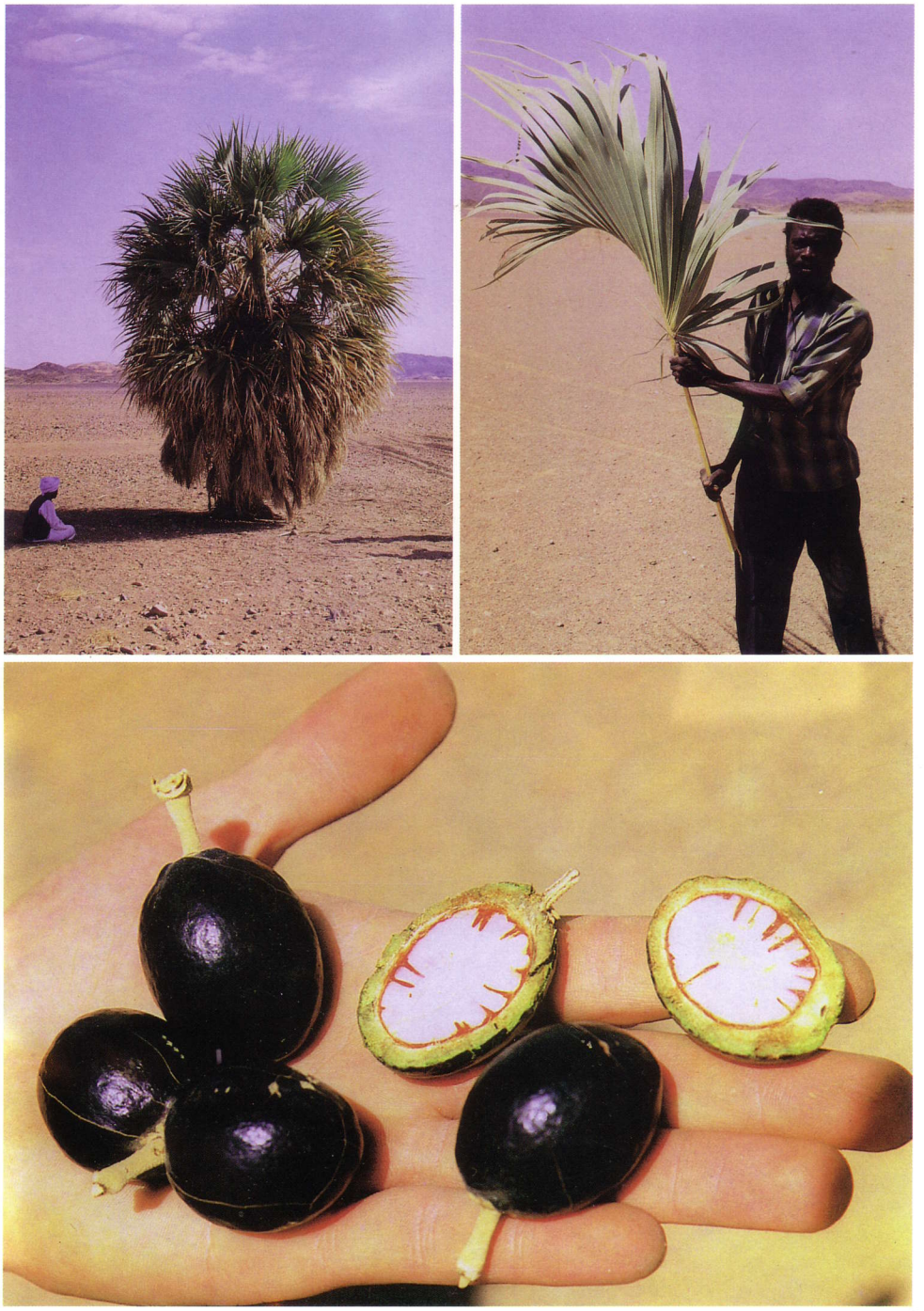
Medemia is a beautiful palm up to 10 m (33 ft) tall, with an erect, solitary trunk and a dense, rounded crown. In young plants, the trunk is covered in split leaf bases; trunks of older plants are bare and ringed. The petioles are a fabulous and distinctive bright yellow (Fig. 4) with black margins that, in younger plants, carry vicious black thorns. This is contrary to the published descriptions of *Medemia*, which describe them as "unarmed." In common with some other genera (*Livistona*, for example) these thorns appear not to be required once the tree gets past a certain stage, and they are missing entirely from the petioles of taller, older specimens. The strongly costapalmate leaf blade is very coarse and leathery (Fig. 6), and the leaves can be heard rattling even in a slight breeze. They are an attractive light green and slightly glaucous on both surfaces and have long, finely drawn out segments, which give the tree a finer and more lax appearance than *Hyphaene*.

We came across a good number of seedlings, perhaps 15 or so, of various sizes, growing quite happily sometimes some distance from the parent tree, indicating that *Medemia* does indeed have a definite, though narrow, grip on survival. We found dozens of stumps and felled trunks. Hessen-Ali, who told us that the leaves are collected for rope-making, etc., added that trees are only felled when they are near the end of their lives, so the remaining leaves can be reached, but it certainly looked as though there had been a major cutting operation within recent years. The trunks themselves seem to have no use whatever, not even as fuel, and were simply left where they fell (Fig. 9).

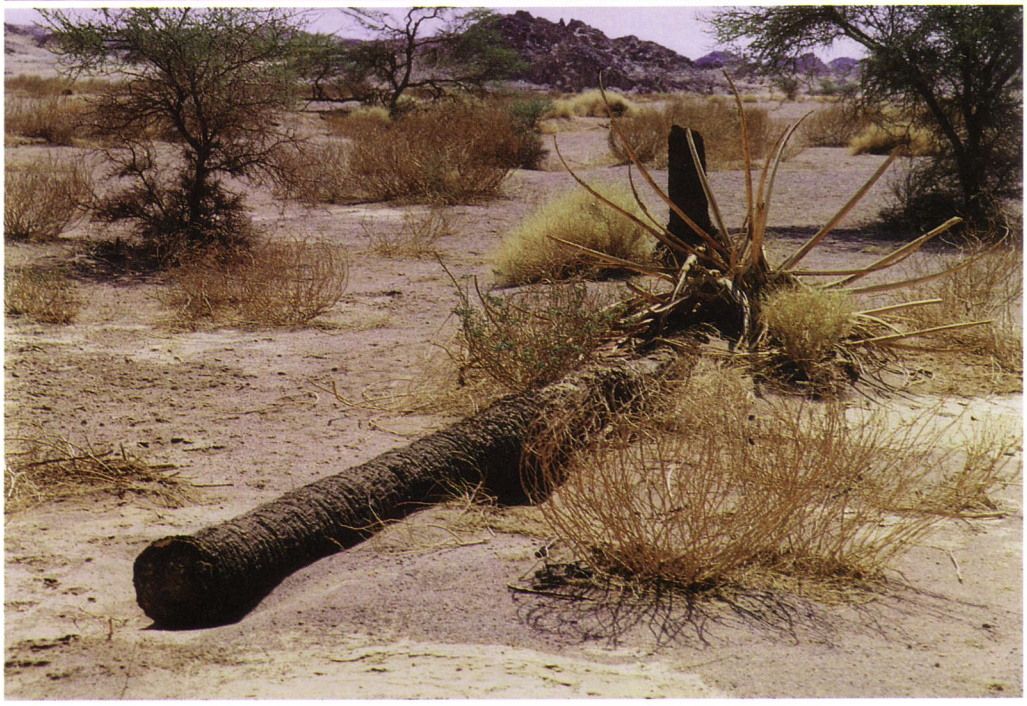
Out in the open, away from the shelter that the jeep afforded, we became even more aware of the intense heat, with the burning sun high overhead, baking the ground and drying the air. The slightest breeze was like a blast from a furnace. It was almost scary, and we were glad to get back to the others after our little excursion. During those desert days we were drinking copious amounts of water, perhaps 8 or 9 L (15 pints) per day, most of which was lost in sweat in the bone-dry air.

After feasting ourselves, metaphorically speaking, on these beautiful palms we set off back the way we had come, pausing every so often to take more photographs. Eventually we again passed

3. *Medemia argun.* Mature trees produce thousands of plum-sized fruits. 4. *Medemia argun.* The bright yellow petioles are stunning against the blue desert sky.



5. Left, *Medemia argun*, a young tree, heavy with fruit. 6. *Medemia argun*. The leathery leaves are strongly costapalmate. 7. Lower, *Medemia argun*. The attractive fruits show radiating lines when cut.



8. The beautiful, colorful valley of Wadi Delah, with a tall, old specimen of *Medemia argun*. 9. *Medemia argun*. Trunks cut down by nomads are left where they fall, having no use.

the first, and biggest one that we had seen, and set off on the long journey back to Khartoum and the real world.

It had been not only one of the most exciting trips we had made, but the landscape, stunningly and starkly beautiful, in combination with the exotic and ancient appearance of the palms, made us feel privileged to have had the opportunity to visit this wonderful country, with its friendly people. Rediscovering *Medemia argun*, which was thought by many to be extinct, and having the opportunity to introduce it to cultivation and safety around the world, was a significant bonus.

Update on Description, Distribution, and Conservation Status of Medemia argun

Medemia argun (Martius) Württemberg ex H. A. Wendland.

A robust, solitary, dioecious tree palm up to 10 m tall. **Trunk** bare, 30–40 cm in diameter, rough and conspicuously ringed, in younger plants covered with the deeply split leaf bases, forming a criss-cross pattern. Crown rounded, of 25–50 leaves. **Leaves:** Petioles are 80–90 cm long and ≈4.5 cm wide at the middle, flattish above, channelled towards the base, rounded below, bright yellow with black margins, armed (in young plants) with widely spaced, coarse, forward-pointing thorns, 1 cm long, also black, mainly toward the base of the petiole; in tall, old plants, the petiole is not armed. The leaf base is flattened, black, deeply split, with a narrow leaf sheath, and an appendage on either side. Hastulae are absent. The leaf blade is very coarse and leathery, light green, slightly glaucous above and below, particularly in seedlings and young plants, ≈110–130 cm long and ±150 cm wide, strongly costapalmate with the costa extending far into the blade, filiferous, divided (around its central portion for two-thirds of its length), into 60–65 singlefold acuminate segments ±5 cm wide, gradually narrower, shorter, and more deeply split toward the center and margins, finely drawn out into a nearly thread-like apex, bifid for ≈20 cm, somewhat lax. Midribs of the folds very conspicuous. **Inflorescences** are interfoliar and arching. Female inflorescences 6–20 on a tree, ≈120 cm long, branched to one order. Peduncular and rachis bracts short, tubular, woolly, apex very finely pointed. First-order branches with sharp margins, carrying a single, catkin-like rachilla, bearing a tight spiral of densely hairy bracts. Male inflorescences 200–250 cm long, similar to female but first-order branches bearing at their tip 1–4 digitately displayed rachillae. **Fruits** on 1–1.5 cm long pedicels, ovoid, 4–5 cm long by 2.7–3 cm in diameter, smooth, shiny, dark violet to black. Mesocarp spongy, swelling significantly when wet. Endocarp thin. Endosperm deeply ruminate with red, later brown, radiating, needle-like ruminations, having a narrow central cavity only when dry. Embryo apical. Plants reach maturity when only 3–4 m tall. Flowers were not found at this time of the year.

Medemia argun has been reported from various places in the Sudan, most of which could only be located with difficulty on present-day maps, others not at all. The essence of our researches is presented below.

—**Wadi Gabgaba** at 21°45′N and 33°E, which is close to the border with Egypt. We have reason to believe that *Medemia* also grows southward on the Wadi Gabgaba to **Wadi Gamaikwan** 20°50′N, 34°E, **Wadi Shagrib** (Shagarib), 20°40′N, 34°E and **Wadi Rabaida**.

—**Wadi Soofur**, 21°30′N, could not be located but is likely to refer to one of the tributaries of Wadi Gabgaba at this latitude.

—**Khor Abu Dueim** (Wadi Dueim or Doum in Etbai) 20°40′N, 34°40′E, in various valleys there, particularly at **Wadi Abu Araga** 20°40′N, 35°E. Atdarfani Oum Dom (Attarfani um Dom, Wadi Terfour, Wadi Terfani) is presumably at or near Wadi Oum Dom, north of Jebel Chigr, which was found in the same area as Wadi Dueim.

—**Wadi Delah**, 21°10′N, 32°45′E near Murrat (Murrat Wells, El Murrat, Mourad, Jebel Murrat).

—Umm Gereifat could not be located but almost certainly refers to a locality in the Nubian desert.

—Ababda Valleys could not be located but also probably refer to a locality in the Nubian desert.

—**Sennar**, a town SE of Khartoum on the Blue Nile at 13°35′N.

—On the **White Nile, An Nil Al Abyad**.

These last two locations refer to *Medemia abiadensis* H. Wendl., which was sunk into synonymy with *M. argun* by O. Beccari, but we believe

this decision may need reconsideration for two reasons: (1) *M. abiadensis* is recorded as growing "on the Nile" as opposed to deep in the desert near seasonal rivers, which are dry for most of the year. The locations for it are also much farther south than *M. argun*, where desert gives way to savannah, thus a very different habitat. (2) The seeds of *M. abiadensis* are much smaller than those of *M. argun*.

L. Boulos (1968) reports on the discovery of two isolated plants of *Medemia* in **Dungul Oasis** and **Nakhila Oasis** in the Nubian Desert of Egypt. It seems likely that these two plants originate from cultivation as their localities are on a trading route, known since the most ancient times, when *Medemia* fruits were imported from Sudan and trees were cultivated in Egypt. *Medemia* fruits were frequently found in Egyptian tombs, dating back as far as the Fifth Dynasty. For an account of *Medemia* in ancient Egypt see Täckholm and Drar (1950).

Although the small reproducing population at Wadi Delah proves that *Medemia argun* is not, after all, on the verge of extinction, it is nonetheless a highly endangered palm. The tough leaves of *Medemia* are still a desirable material for making rope, mats, etc., and harvesting of the leaves of young plants continues. Tall, old trees nearing the end of their lives have been felled for the same reason, the trunk apparently not being of any use. In the few tall old plants remaining, the upper portion of the trunk especially is heavily damaged by the tough desert conditions and it seems as though their days are numbered too. Only the healthy, middle-aged plants are actually left alone. Nevertheless, it is somewhat surprising that the grove at Wadi Delah, which had already been recorded as being in danger of extinction at the turn of the century (Beccari 1924) has survived for such a long time. Judging by the dozens of felled tall trunks we have seen littering the plain, there were many more tall trees around in the recent past. Apparently the grove had a chance to recover over the last few decades when nearby human settlements were abandoned after the gold-rush at Murrat. The closest settlement today is a long distance away, but new pressure may be caused by a popular truck-operated smuggling route to Egypt that passes through Wadi Delah. Drought might also play a role. According to our guide Hessen-Ali, the area has not always been as dry as it is today. However, it is likely that *Medemia argun* still exists at some of the other locations given and *Medemia* will not have to rely solely on cultivation for its continued survival.

Medemia would be a fabulous ornamental for drier subtropical and tropical regions, its requirements and cultivation techniques being probably similar to those of *Hyphaene* and *Bismarckia*.

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