

Femoro-fibularis (FMF) ("femerofibularis" of Wilder).

Origin: median ventral surface of femur near the insertion of the caudal-femoralis and ischio-femoralis. *Insertion*: by a tendon to the postero-lateral surface of the fibula at about the middle of its length. The muscle crosses the popliteal surface of the knee.

SUMMARY

A brief description of each of the muscles of the pelvis of *Necturus* is presented. The muscles are named in accordance with the terminology used by Francis (1934) in his descriptions of the muscles of *Salamandra*. Names used by Wilder (1912) in his descriptions of the muscles of *Necturus* are listed as synonyms of the names used by Francis. With but one exception (pubo-femoralis) the muscles listed for the pelvis of *Salamandra* are found in *Necturus*. Wilder's descriptions are found inadequate in respect of five muscles, namely, the pubo-ischio-femoralis externus, the pubo-ischio-femoralis internus, the ischio-flexorius, the ilio-femoralis, and the extensor ilio-tibialis. It is suggested that the pubo-extensorius muscle may furnish additional evidence of the specialized larval state of adult *Necturus*. A possible function of the ischio-caudalis muscle in compressing the cloacal glands is also suggested.

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Collecting Mosses in East-Central Africa

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On February 19, 1952, I left Dallas for Kenya and Tanganyika to collect mosses and to photograph and study flowers and animals of the region. My nephew went along to help with the photography. We spent about 38 hours in the air and covered a distance of some 9300 miles in reaching Nairobi, capital and largest city of Kenya, the center from which we expected to make our forays. On our way, we had to spend two days in New York and six days in London acquiring visas and hotel accommodations. We arrived in Nairobi after 8 p.m., too late to see much of the city.

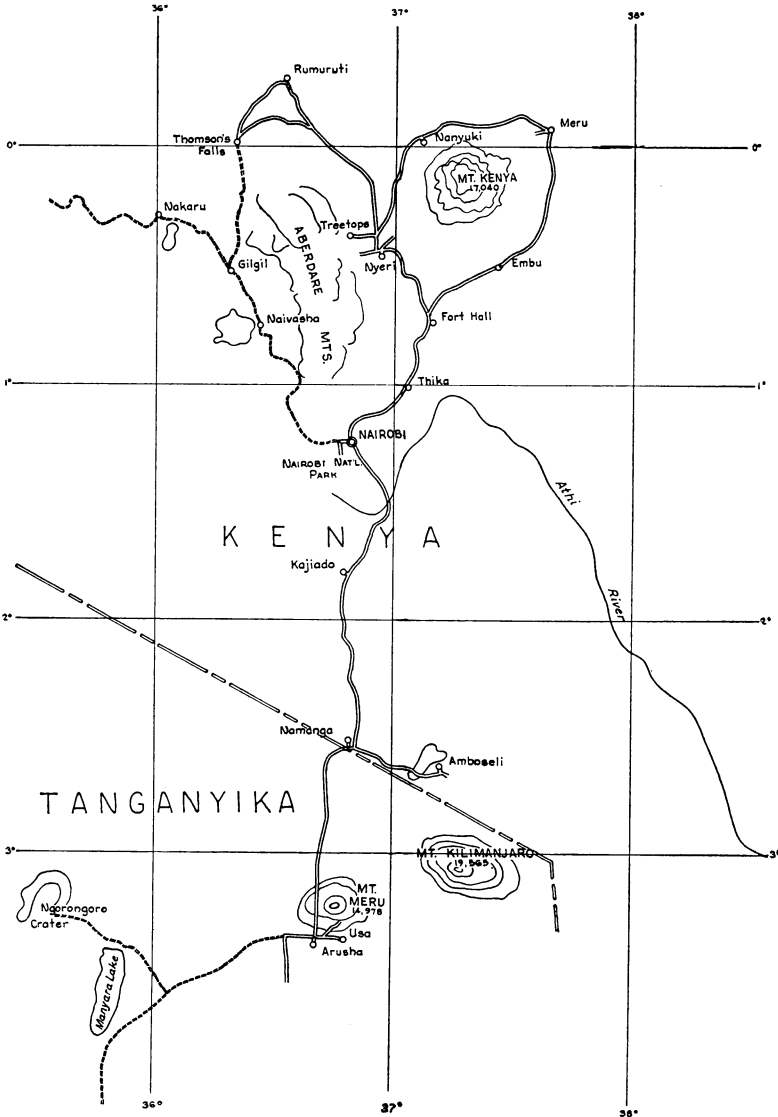
Our flight from London had carried us over the Alps at night so that we reached Cairo in the early morning hours. We had a view of north Africa as we flew to Nairobi via Khartoum, the course following the Nile River most of the way. It took nearly an hour to go through customs. A representative of Cook's Travel Agency drove us seven miles out of Nairobi to the "Spread Eagle Hotel", there to spend the

night. Accommodations in Africa are very limited, and it is well to make reservations before starting a tour.

Kenya has an area slightly less than that of Texas, but has more water and much higher mountains. Nairobi, with an altitude of 5453 feet, is situated just south of the Kenya Highlands and is surrounded on the other three sides by plains. In driving south and east I was reminded of regions in west Texas where scattered thorn trees, such as mesquite and acacias, dot the grasslands. In Kenya several acacias are found on the grasslands of the high plains. The rainfall at Nairobi averages 34 inches annually, with most of the rain falling in March, April, and May. In the Kenya Highlands the rainfall is 45 inches annually. Frost occurs at altitudes of 9000 feet, with mean temperatures usually between 50 and 80 degrees. The population of Kenya is between five and six millions (1948). Europeans are about 1 in 180 in the population—the African population being over five millions. Nairobi has a population of 136,000, of which 11,000 are Europeans.

March 1. Nairobi and vicinity.—We were awakened shortly after six by the early morning service of tea to our rooms, a common service in African hotels. From our balcony I had an opportunity of studying some of the African birds which were locally abundant—some of which we did not happen to see again on our trip. Among these were the pied crow (*Corvus albus*), a large black bird with white breast, neck, and mantle. This crow is a common scavenger about native villages. There were several shrikes and flycatchers feeding upon the insects in the fields in front of the hotel. Throughout our trip the many different and brilliantly colored shrikes and swallows were a source of amazement to us.

Later in the morning we went into Nairobi to complete our tour-plans. In the afternoon we spent some time at the Arboretum and the Museum. The latter was crowded with items of natural history and possessed a very fine collection of wild flower paintings by Mrs. Joy Adamson. The nearby herbarium was closed as it was a Saturday afternoon. After 4 p.m. we drove out to the Nairobi Royal National Park, four miles south from the center of Nairobi. The park area of 40 square miles, long a game reserve, has been in the national park system only since 1945. More than 4000 vis-



itors a week enjoy the park's abundant wildlife resources, seen to best advantage in the early morning and evening hours. Sixty mammals are to be found in the area; in the few hours of our drive through the park, we saw herds of zebras, giraffes, Thomson's gazelle, Grant's gazelle, eland, kongoni or hartebeeste, impala, and wildebeeste. We also saw hunting dogs, jackals, a hyaena, and a lion. The park

ranger pointed to a hippopotamus lying in the cool stream, but we did not see him come out. A number of ostriches, both male and female, were feeding on the grassy plains. The bird life was not abundant to casual observers, but we were delighted to see the large, ungainly secretary bird running until he was hidden in the tall grass. We also enjoyed the bustards, wagtails, hawks, and many large blue herons. Our driver helped much in pointing out the wild game to us.

March 2. Nairobi ("Spread Eagle Hotel") to Meru.—We had been advised to get an early start for the drive to Meru. The road was paved with asphalt as far as Thika, 28 miles from Nairobi; then came 170 miles of dirt road impassable in wet weather. Luckily, we did not pass many vehicles; when we did, the red dust rose in stifling clouds. We made the tour in a Chevrolet sedan. The touring companies preferred this make of car and truck for their tours and safaris. Our driver, an African who spoke fairly good English, told us tour-drivers are required to take a course of training in which they learn the names of the principal mammals, birds, and flowers. We found him very pleasant and helpful, and a very good driver, especially on dirt roads.

As the Kenya Highlands seemed to offer more promising territory for moss collections, the first part of our tour was planned for a circle around Mount Kenya, a nipple-like peak rising to a height of 17,040 feet. Melting snow from the upper slopes gave rise to many rushing mountain streams and picturesque falls around the mountain. This area has long supported a heavy population of native Africans. In recent years (the area was first visited by a European in 1883) it has become the favorite resort of the white settlers. It is also a prosperous agricultural area, with large crops of coffee, sisal, bananas, maize, pyrethrum, and tea. In the western part the Aberdare Mountains rise to heights of twelve to thirteen thousand feet; the highest peak, Mt. Elgon, rising to 14,000 feet.

The road mainly traversed woodland savana areas, but in places had been cut through dense jungle growth, mostly of species unfamiliar to me. Along some streams were broad expanses of *Cyperus* (the Egyptian papyrus), the umbrella-like heads of which were just beginning to form. Natives were bathing or getting water at most of these streams. On the banks of dry arroyos were many scattered trees

covered with red flowers; these were the flame tree (*Erythrina abyssinica*), also called corky-bark or Kaffir boom. It had flowers similar to those of our coral bean (*Erythrina herbacea*); the flowers, however, appeared after the leaves had fallen rather than before the leaves were produced, as in our species. We passed several areas thickly covered with tall, succulent Euphorbias which resembled some species of American cactus.

My first moss collection was a *Weisia* growing in a canyon north of Embu; there palms and ferns were dominant. This was our only area where palms were in profusion. A native family came bounding out of the brush, and we turned from moss collecting to picture-taking. We stopped at a waterfall 28 miles south of Meru and collected a number of mosses. The waterfall was the source of water for natives living nearby; and we had the help of several boys who had stopped for a drink. Among mosses collected on the wet stones were species of *Fissidens*, *Hyophila*, *Philonotis*, *Brachymenium*, *Scleropogon* (?), and *Homalodendron* (?).

We reached our night's destination (the charming "Pig and Whistle Inn" at Meru) at 5 p.m.—just in time for a spot of tea. Meru lies on the northeastern slope of Mount Kenya at an altitude of 5500 feet and a few miles north of the equatorial line. It is at the edge of the jungle growth of the mountain with five mountain streams nearby. The slopes above this area are said to have a rainfall of 90 inches annually. Our tour of the hotel grounds turned quickly into a moss-collecting expedition. Mosses and liverworts abounded along the irrigating ditch of the garden. I noticed abundant growth of *Marchantia*. The houseboys were building fires under the large oil drums, which are used for heating water. The logs they used were covered with mosses and liverworts, some of which I rescued from the flames. They conducted me to the woodpile where others were found. On the logs I found *Frullania*, *Tortula*, *Fabronia*, *Orthotrichum* (?), *Plagiochila*, *Erpodium*, *Pilotrichella*, and others.

March 3. Meru and Nanyuki.—The next morning I started out alone to collect on the Kazita River back of the hotel at Meru. I followed a well-worn footpath and met many natives on their way to or returning from the markets of Meru. They were quite curious about my collecting and very friendly, stopping when I stopped and chatting con-

tinuously in their own tongue. They seemed to understand English or my sign language enough to direct me to the place where many mosses grew. I climbed the hill across the river, found myself in a native village, and there got one of the native women to go with me, for a small coin, to the moss locality. Soon a half-dozen youngsters attached themselves to our party.

We crossed the village and another stream beyond, at length coming to the posha mill. Corn or maize, when ground, is called posha; it forms the chief article of the African native's diet. Along the rocks and concrete walls of the diversion-channel of the stream to the mill, I found abundant growth of mosses and liverworts. Among them were some Texas mosses, *Timmiella anomala* and *Bryum argenteum*, and other mosses and liverworts whose genus was easily recognized. These included *Mnium*, *Philonotis*, *Pohlia*, *Ditrichum*, *Bryum*, *Funaria*, *Fissidens*, *Hypnum*, *Brachythecium*, *Marchantia*, *Anthoceros*, *Metzgeria*, *Riccia*, and others. Genera new to me included *Cyclodictyon*, *Rhacopilum*, *Hyophila*, and several others. Many of these were in good fruiting condition.

After lunch we drove the 54 miles to Nanyuki over rolling hills or grassy plateaus. The upper road (which reaches an altitude of 9000 feet at one point) was closed. Interesting features of the landscape were frequent views of the distant peak of Mount Kenya and the numerous native villages which were surrounded by a circle of green, which later proved to be of a broad-leaved shrub with yellow flowers. We stayed at the delightful and luxurious "Hotel Mawingo" a few miles out of Nanyuki on the Liki River, on the north-west slope of Mount Kenka. Here on the equator, at an altitude of 7000 feet, the climate was cool and pleasant. Fires were required in the late afternoon and evening. Our hotel had a wonderful outlook on the peak of Mount Kenya. There was a vast array of native and introduced flowers, grown in the beds and pools. Fruits were grown under wire netting in their orchards to protect them from the depredation of many birds. Seven gardeners (under the supervision of a woman) were needed to keep the grounds in condition. The standard rate of pay for the gardeners is the equivalent of seven dollars a month, with board. It was hard to stay indoors and package the many mosses collected at Meru that morning.

March 4. Nanyuki and Vicinity.—We drove into Nanyuki in the morning. I tried to get some newspapers in which to package my mosses, but I found that the papers all came to customers of longstanding. The best I could do was to purchase a tablet of airmail stationery which turned out to be quite suitable for some small dry mosses. Later at the hotel I was able to pick up some discarded newspapers. With cameras and binoculars we drove northwest of Nanyuki through grasslands closely dotted with acacia trees, where game was once abundant. We saw no large animals but we did see a few large birds, including ostriches, secretary bird, red-tailed hawk, and marabou storks. When we returned to the hotel, I walked down to the Liki River at the foot of the slope below the hotel. The slopes of Mount Kenya in the vicinity were heavily forested. Along the river on the trees and rocks I found many bryophytes new and strange to me. I collected a few before darkness fell and promised myself to return for more the next morning.

March 5. Nanyuki to Nyeri and Vicinity.—A last round of picture-taking and moss-collecting provided me with more specimens than I could package in the interval before we continued our tour to Nyeri, in mid-afternoon. It was the first time I had been in a region where mosses hung from trees in long streamers (if I except the redwood belt of California, where a few species have that habit), and I saw some to match Brotherus's illustrations in Engler & Prantl's *Natürliche Pflanzenfamilien*. From the moist banks of the river and the granite rocks in midstream, I collected *Brachy-menium*, *Aerobryopsis*, *Pottia* (?), *Bryum*, *Funaria*, *Grimmia*, *Fissidens*, *Anomobryum*, *Brachythecium*, *Thuidium*, *Plagiochila*; and also *Marchantia* growing on rocks and soil. From tree-bark I obtained *Macromitrium*, *Plagiochila*, *Brachythecium*, *Leucodontopsis*, *Pilotrichella*, *Fabronia*, *Zygodon*, *Porothamnion*, *Frullania*, *Prionodon*, *Cryphaea*, *Neckera*, *Leptodon*, *Renauldia*, *Weisia*, *Porella*, and *Tortula*.

A short ride of 30 miles over good roads brought us to the "Outspan Hotel" at Nyeri, southwest of Mount Kenya and 97 miles northwest of Nairobi. It is in the foothills of the Aberdare Mountains. Here again we found several rivers, but had time to explore only one of them for mosses. The "Outspan Hotel" is the largest and oldest resort-hotel in the area. In the lobby were a series of excellent paintings

on the wildlife of the area done by Sir Robert Baden-Powell, founder of the Boy Scouts. Once more we delighted in beautiful landscaping and the wealth of bloom of many cultivated plants. The buildings were covered with masses of the red, purple, and brown *Bougainvillea*, the red Cape honeysuckle, and the lavender-flowered potato vine. Shrubs of frangipani filled the air with fragrance from waxy-white flowers with deep yellow throats. A huge-leaved plant growing by the pool was surely *Gunnera insignis* (a plant of the mountains of Central and South America) or at least a closely-related species.

After our arrival we drove out about fifteen miles, past plantations of coffee and sisal, to see the estate given to Elizabeth, now ruling queen of Britain. Situated in a heavily-wooded area near a government reforestation and wildlife station, it was a smaller place than I had expected. Its chief interest to me lay in the low, whitish, broad-leaved shrub which formed a border to the driveways. We could see this only from a distance; it reminded me of pictures I had seen of the Proteas of South Africa. Nearby were numerous plantings of gum trees (*Eucalyptus* spp.). Other trees used in their reforestation program are *Cupressus lusitanica*, *Pinus insignis*, and *Pinus patula*. As we passed a small stream at the foot of a hill, we heard the terrific clatter and chatter of a flock of birds, larger than our crows, which flew into the taller trees. These were the ivory-billed hornbills, black and white birds with tremendous bills and small necks, which are a nuisance in that area in the rainy season.

March 6. Nyeri, Thomson's Falls, Rumuruti, Nyeri.—Today we drove north of the Aberdare Mountains to Thomson's Falls on Uaso Nyiro River. With a gradual ascent, scarcely noted as we crossed rich grasslands and some woodland, we rose from an altitude of 5747 feet at Nyeri to 7743 feet at Thomson's Falls, 74 miles from Nyeri. We saw some game on the way—ostriches, giraffes, Thomson's gazelle, and a steinbuck. The latter is a small gazelle about two feet high, easily lost to view in the high grasses. Joseph Thomson, leader of the Royal Geographic Society Expedition to this region in 1883 and 1884, and the discoverer of Thomson Falls, took back to England many animals of the region, some of which were named in his honor. The falls

had a sheer drop of several hundred feet. The canyon was too steep to reach the stream-bed below the falls, in the time at my disposal, so a few mosses were collected from the wooded rocky rim. Among these was our common *Hedwigia ciliata*, growing on rocks. We returned by Rumuruti to visit a big-game farm in that vicinity. On the return to Nyeri we saw in the grasses five large black, white, and red birds, the ground hornbills. According to Roberts (1951), these have habits similar to those of the secretary bird.

March 7. Nyeri and Vicinity.—We drove in the morning to the Gura River. Most of the land along the way had been set aside for a native reserve, and the area was densely populated. There was some terraced farming of bananas, sisal, and sugar cane. Friday was market day in Nyeri. After lunch we drove down an avenue shadeby large gum trees and up a slope to the hillside where the huge market was held. Natives from miles away, mostly afoot, some on bicycles, had come to the market place. There we saw bananas, beads and other ornaments, various vessels made from gourds, and many wares made of sisal, such as crates and ropes.

From the market we went on to the Kiandangoro Forest Station about eight miles from Nyeri. Here we got into a dense growth of very tall trees and collected a number of mosses, liverworts, and lichens from bark and soil. There I found the moss *Schwetschkea*, the first representative of the genus I had ever found. Later in the afternoon I walked down to the falls back of the hotel. I found a few mosses, but the area was too disturbed by the building of an irrigation ditch to yield much of value.

March 8. Nyeri to "Treetops Hotel."—On Saturday at 1:30 p.m. we left for the Treetops Hotel in the Aberdare National Forest ten miles from Nyeri. At the end of the road, accompanied by the white hunter with a heavy rifle and three Africans with spears, we had a gentle climb for a quarter of a mile along a trail cut through the jungle. Every twenty-five feet ladders had been placed against tree trunks so that a safe refuge was easily obtainable if dangerous animals approached. We passed without alarm, but we found interest in the broad trail left by an elephant

within the past twenty-four hours. The hotel was built forty feet from the ground in a strangler-fig tree, whose diameter at the base was about ten feet. Our time in the hotel was spent viewing the game which came to drink at the small lake below us. We saw waterbucks, steinbuck, giant forest hogs, baboons, monkeys, bushbucks, water buffaloes, and rhinoceroses (several with babies). The birds that flew in were numerous and interesting: hammerhead stork, swallows, mourning doves, marsh sandpiper, hawks, and others. Dabchicks, close kin to our pied-bill grebe, played and fed in the water all during our stay; while on the land, numerous brown birds with long soft tail feathers (*Colius* sp.) stayed in the trees or flew down for a dust bath.

March 9. "Treetops Hotel," Nyeri, and Nairobi.—In the pale light of early morning we left our comfortable beds when some one called that there was game on the saltpan—a rhinoceros and five buffaloes. After breakfast the baboons returned. A long-crested eagle stopped on the opposite shore for some time and displayed large white windows in his wings when he soared aloft. After tea and breakfast the porters arrived to carry our baggage down the hill.

The ladders made bryophyte collecting easy, but my only opportunity for that came in the few moments before our departure. While others were taking pictures, I managed to get a few specimens. *Riccias* grew along the margin of the little lake where I was not allowed to go. A thick bryophyte cover, consisting predominantly of one or more species of *Plagiochila*, was on many of the tree trunks. Our familiar American *Frullania squarrosa* was also there, along with mosses new to me, such as *Leptodon Smithii*, *Neckera* sp., and possibly a *Leucodontopsis*. Our return to Nyeri and then to Nairobi was uneventful.

March 10. Nairobi, Namanga, and Lake Amboseli.—We left Nairobi in the late morning for the Amboseli National Reserve and the Arusha area in Tanganyika on a 10-day safari for photographing and hunting game and collecting mosses. We traveled in a Chevrolet hunting truck and were accompanied by a white hunter and two Africans. We felt the cooling winds from the snows of Kilimanjaro as we crossed the plains south of Nairobi. Most of the grasslands had been burned by the Masais in order to improve the grazing for their large herds of cattle. This practice also

attracts herds of wild animals, and we saw numerous zebras, Grant and Thomson's gazelles, and wildebeests.

Our excellent lunch at the "Namanga River Hotel" was delayed for an hour by motor trouble. The fifty mile drive from Namanga to Amboseli was rough and very dusty, but hot baths awaited us in the park. We were comfortably housed in huts with thatched roofs, cement floors, and lavatories with hot and cold water. Our food was not entirely pleasing, for we were dependent upon the culinary efforts of a native cook provided by the safari company. The huts were located in a grove of *Acacia* trees and had a superb outlook on the snowclad crater summit of Mount Kilimanjaro (altitude 19,455 feet) some 40 air-miles away. The park area adjoined a large salt lake, now dry most of the time, and therefore not presently a good locality for byrophytes.

March 11. Lake Aboseli and Vicinity.—As I had arrived at the camp with a well-developed case of influenza, I had to spend most of my first day in bed. Thus I was at hand and looking out toward the *Acacia* trees when a troupe of black-faced monkeys appeared on the scene. They seemed to know that food was available from the natives, chiefly in the form of bananas. The banana commonly grown and served in Kenya was a small variety quite ripe and sweet while the skin was still dark green. The monkeys stayed around camp for an hour or two and then disappeared into the brush as quickly and silently as they had emerged.

Arrangements were made by our attending white hunter for us to view and photograph a native dance in the Masai village of Ol Tukai, about five miles from the park headquarters. These people lived in low dome-shaped clay huts surrounded by a brush stockade as a protection against lions. They were without any agricultural resources, and had to drive their cattle seven miles to water every other day. Milk, mixed with blood from one of the cows, was said to be their principal food. The dance, in which nearly all the females of the tribe (children and old women included) took part, was accompanied by their singing and seemed to be enjoyed by all.

Our trip to the village was made between 4:30 and 5 p.m. Thus we were fortunate in seeing many birds on the way over. Among these were plovers, grouse, wheatears, fran-

colins, vultures, Kori and the lesser bustards, pipits, and a red, white and blue bird which the white hunter called an imperial starling but which resembled an illustration of the crimson-breasted shrike (Roberts, 1951).

March 12. Lake Amboseli and Namanga Vicinity.—We saw our first elephants in the wild by going out in the early morning hours to a nearby swamp where the elephants took refuge during the day for sleeping and resting. The shrubs or herbs in the middle of the swamp were tall enough to cover them. A lower shrub, dominant around the swamp margin, was a *Solanum* in full bloom. As we drove through the woods around the swamp, the tick birds (a white bird, presumably *Bubulcus ibis*, also called cattle egret) showed us our first elephants. We could barely see their backs above the tall plants of the swamp. Finally we approached one huge male elephant before he entered the swamp, but the light was bad for picture-taking. My nephew had, however, gotten some good pictures the morning previous when 30 elephants had been encountered on the saltpan. On the trip back to camp we saw two crowned cranes give their dancing display and heard their cries in flight.

The road to Namanga had to be retraced, and we arrived there in time for an early lunch. Since much of the road was paved to Arusha (our next stop) we hoped to arrive there in time to go through customs and obtain hunting licenses before the offices closed. It was not to be. Serious engine trouble developed soon after we hit the black top, and we returned to Namanga to wait twenty-four hours for a replacement truck from Nairobi. Still feeling too ill to do much active work, I spent part of the time photographing flowers around the hotel. A great many species had been crowded into a small area, and there was a profusion of bloom. Perhaps the most startling and exciting was the flaming (*Spathodea campanulata* or *S. nilotica*). This is beautifully illustrated by Johnston (1902). It is a large tree (in the trumpet creeper family) with red flowers which have the petals edged with gold. Johnston describes them as having the size and shape of a Roman lamp. Later I saw them bordering the highway on each side for miles as we neared the outskirts of Arusha. I was told that the blooms at this season were not as profuse as they would be in September.

With such an abundance of tubular flowers at hand it was not surprising that I saw so many sunbirds around the hotel. The sunbird is close kin to our hummingbirds. The ones I saw were considerably larger and had long curved bills. One was nesting within hand's reach near the entrance step in a cottony enclosed nest with a small side opening. It was suspended from a slender palm leaf.

March 13. Namanga to Arusha.—Again our journey to Arusha met with difficulties. Arusha is about 75 miles from Namanga, and the greater part of the road is covered with asphalt paving. Short scattered stretches are still unpaved because the road men have been unable to get the asphalt. We had slowed down to twenty miles for one of these unpaved sections when the axle suddenly broke. Fortunately no one was injured. My nephew and I were offered a ride into Arusha with the road commissioner, who had driven out shortly after our accident. Another day was wasted while the axle was welded in Arusha!

March 14. Arusha.—We were comfortably quartered in a good hotel called "Safari House." It was in the heart of the business district, however, and the surroundings were not attractive. Feeling decidedly ill again, with a recurrence of my influenza symptoms, I was unable to work for several days. My nephew secured his general hunting license which allowed him three each of the common plains species of mammals. On his first trip he saw from the car a cobra reared up with spreading hood, the only snake we saw on our excursion.

March 15. Arusha and vicinity.—I was able to drive out about 10 miles, in the late afternoon, to a small artificial lake. This area was part of the great Serengeti Plains so renowned for its game. We were told that the increase in game here had been quite noteworthy since the dam was built about ten years ago. There were a few flowers in bloom on the plain—one was a white-flowered *Thumbergia*, and another a heliotrope. On the lake I saw pelicans, egrets, ibis, European storks, plovers, and several I could not recognize quickly. It started to rain and we had to hurry back to the highway. On the way we saw many vultures and marabout storks attracted by a carcass discarded by the hunters. Zebra meat, except the liver and heart, was seldom eaten. A bus-

tard, larger than a turkey, crossed the road and disappeared in the tall grass. Some of the francolin, a yellow-necked partridge larger than our quail, was served for dinner.

March 16. Arusha and Vicinity.—The white hunter's wife and young daughter had met us at Arusha in their English jeep. With them I spent the morning looking for mosses. We drove out on the Usa River Road, as was suggested to us at the hotel. It was an area thickly settled with natives, and we met many of them on the road to a nearby market. Some of them were carrying loads of bananas considerably larger and with more pointed ends than the ones we had seen in Kenya. We were told that this variety was not so sweet and was used by natives for flour. I did not find many mosses—a few on trees at the home of a Mrs. Fitzgerald who conducted a small tearoom. Among these were *Zygodon*, *Fabronia*, *Tortula*, and *Erpodium*. On brick walls and drains in Arusha on our first day there I had collected *Bryum argenteum* (?) and *Fissidens*.

In the afternoon we again drove out to the game area south of Arusha. When we got to the region of larger *Acacia* trees, we saw a large herd of magnificent giraffes. It was a marvel to me that such a large animal could feed upon the small leaves of the *Acacia* and find enough nourishment—leaves that were protected by thorns nearly two inches long. We also saw a large herd of wildebeests in addition to the usual zebras and gazelles.

March 17. Arusha and Lower Slopes of Mount Meru.—Recent rains and my indisposition caused me to give up my trip to Ngorongoro Crater, 110 miles west of Arusha. I regretted missing the flamingoes on Lake Manyara and the moss collecting in a rain forest about 70 miles out. Instead we decided to go up Mount Meru with a picnic lunch.

We followed the road past Safari House, through well-kept and well-farmed native mountain reserves, and finally arrived at a sawmill near the Laikinoi Farm. In the same vicinity we drove along a slope which was being cleared by natives for farming. We climbed from Arusha at an altitude of 4515 feet up the southeast slope of Mount Meru to a river at an estimated 7000-foot level—perhaps even higher. We got into a densely wooded area of tall trees where lichens three feet long hung from the trees. From a distance they looked like our Southern trees hung with Spanish moss

(*Tillandsia usneoides*). We ate our lunch in the shade of tall pencil cedars (*Juniperus procera*).

On the banks of a small stream nearby we found an abundance of bryophytes, both in number and species. A roadside bank was covered with a moss which seemed to be none other than *Trematodon longicollis*, a species that occurs frequently in east-Texas woodlands. *Bryum argenteum* and *Weisia controversa* (*W. viridula*) were other familiar plants. We found here a number of species previously collected in Kenya, but others were new to us. Among these were species of *Pilotrichella*, *Prionodon*, and *Floribundaria*.

After a short rest and tea, we again ventured up the mountain. This time we went to the vicinity of the water works station on the Arusha River. It was too late to do much collecting, but we had the help of the children from a nearby village in getting a few specimens. Among the mosses collected here were *Weisia*, *Fissidens*, *Pottia*, *Furnaria*, *Philonotis*, *Brachymenium*, and *Timmia anomala*.

March 18. Arusha.—My nephew received his orders to report to a U.S. Air Force base in April, and he decided to return at once. I called the tourist agency at Nairobi and found they could get us accommodations on March 20, the last available for a month. As the agency was having trouble getting my accommodations in South Africa, I decided to return with him. The mosses I had collected the previous day still had to be dried and packaged, but we promised to be on hand to get the plane.

March 19. Arusha to Nairobi.—Our tea was brought at six a.m., and we planned to drive on and have breakfast at our pleasant "Namanga River Hotel." We were ready on time, but someone had failed to waken our porters. It was very cool the first part of our trip while we were in the shadow of Mount Meru (altitude 14,979 feet). Soon we were far enough north of Meru to see the outline of Mt. Kilimanjaro. The birds were abundant—stonechats, wheatears, plovers, yellow wagtail, imperial starling, greater bustard, guinea fowl, grey lourie, hawks, eagles, kites, lilac-breasted roller, and barbet.

Shortly after leaving Namanga we caught a glimpse of the dik-dik, a small antelope about 15 inches high. Later on we saw four gerenuks or Waller's gazelles. On the Athi

Plains nearer Nairobi we did not see as much game as we did going out. We checked in at the "Avenue Hotel" for our last night. That evening I found the dining tables decorated with our Texas plume or standing cypress (*Gilia rubra*), one of their cultivated flowers. [Jex-Blake (1950) lists it as *Gilia coronopifolia*.] During the day I had noted in their parkways a hedge of the Crown of Thorns (*Euphorbia splendens*) which we in Texas often nurse along as a pot plant. We saw *Euphorbia pulcherrima*, the Christmas poinsettia, growing and blooming in great luxuriance wherever we went. In Arusha one plant had formed a tree about twenty feet high and had a trunk eight inches in diameter. There were many varieties grown, some yellow, some white, all blooming the year round.

March 20-23. Nairobi, London, New York, and Dallas.—We were quite rushed at the last minute dispatching our mosses and souvenirs by air freight. The plane left the Eastleigh Airport at 11 a.m. on its 5200-mile flight to London. We were delayed at Khartoum an hour or so because of a dust storm at Cairo, but it had quieted down before we reached there about midnight. Soon we were bidding farewell to Africa and winging our way over the Mediterranean to reach London before noon. The night plane from London was delayed until the next day because of strong head winds over the Atlantic, but we enjoyed the day crossing more than our first flight by night. We landed in New York about 8 p.m., spent the night there, and got a plane the next morning which brought us back to Dallas and the close of our first African adventure. We hope it will not be the last one.

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