

The landscape here is a most quiet and restful one. Trees are of equal height, uniform in color, not very close together, canopy about half closed together. Trees are topky, have no lower branches developed, or if they come out below behave as does the main stem. The stems are blotched with ash-colored lichens and appear greyish at a distance. The foliage is as rich and fresh as can be and the grass so well watered and growing so rapidly that it looks as fresh as grass can possibly look.

December 16, 1919. Walked south of Sekania a few miles and took a number of photographs.



D²-8. Shows a large termite hill through which a road has been cut. The hill is only about 15 feet high. Soil does not change appreciably in the surface layer. The vegetation on the hill is *Erythrina* and *Dichrostachys nutans*.

The anthills are very large. One of these is used as a base for the Belgian flag pole and occasionally they are used as the foundation for a house.



D²-9. Shows a grass cover. (see Herb.) Largely *Setaria arograstis* and *Allotropa*, with a tree cover largely of *Brachystegia* and other pinnate broad-podded plants. These are much like the specimens collected from the velvet-podded tree at Victoria Falls. Here the pod is smooth and not ribbed at the edges. Anthills and native village shown in the background. Village here is very pretty, clean and well built.

D²-10. Corn field showing native culture, with huts in the background. Peanuts and sweet potatoes are planted with corn.





D²-11. A roadway with *Brachystegia* at the sides and grasses everywhere under the trees. Beautiful tree growth. Tops covering a little over half of the surface. Grasses about 3 feet high and many of these should be important. There is a pretty bush-like clematis with almost white flower, *Gloriosa* lily and a blue trumpet-like flower. Grasses just coming into flower. These look especially good for our southern forests.

D²-12. Typical dry forest of good growth, largely *Brachystegia*. Grasses form a rather uniform cover. Apparently there are miles upon miles of this type of vegetation. This is somewhat different from the type at Kafue, the change coming, one might say, at about Broken Hill, where the shade becomes important and the coarse *Cymbopogon* grasses are shut out.





E²-1. Shows native boys preparing ground for planting. They are using the native hoe, singing while they work, all chopping together. They make a game of the work.



E²-2. Crop hilled up, hills about 3-4 feet across and 5-6 feet long, over 10 inches high, and planted only on top. Wash of last rain shows in the foreground. Kaffir corn is planted in the background and beans are coming up on the hills in the foreground which change at the left back with long ridges of plants to

The soil looks unusually fertile, is absolutely free of weeds at this time. This is an excellently kept garden. Probably 20-30 acres.



E²-3. Kaffir corn broadcasted on level land. The plants are just coming up. This is level culture and plants not in hills.

The natives here show care of gardens which reminds one of Belgian gardens, and it may possibly be the result of having seen the effect of more careful attention.

December 17, 1919. Collected the principal grasses of the grass floor. The most important one is Herb. 490. The principal grass is *Brachiara* or *Urochloa*, a grass which covers most of the ground. All the grasses from Herb. 486 to 490 are very prominent, although 485 is less prominent.

One is struck by the strongly developed base, bulbous at times, which characterizes all of these. They look like important forage plants. The best time to collect them this way would be about the last of January.

The trees are largely *Brachystegia* with pinnate leaves, very shiny and green. There are others, including the ones sent in from Kafue. *Zizyphus* is

prominent on the termite hills, but not elsewhere. Gloriosa lily and gladioli
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are the prominent bulb plants, while/light clematis is prominent among the
flowering plants at this time.

Had a heavy rain in the afternoon.



E²-4. Shows Raven and Shants on a collecting trip. Here I secured a number of native grains.

S. P. I. 49974, Zea mays, grown by the natives at Sekania, grown by the natives for the most part in small elevated beds about the village, and constitutes the chief food. It is pounded in a wooden mortar about 1-2 feet high and with a long pole. Both hands are used in this process.

S. P. I. 49967. Kaffir corn, Holcus sorghum, grown as is corn, but occasionally broadcasted as well.

S. P. I. 49966. Eleusine coricana, called millet by the whites. Prized for making Kaffir beer.

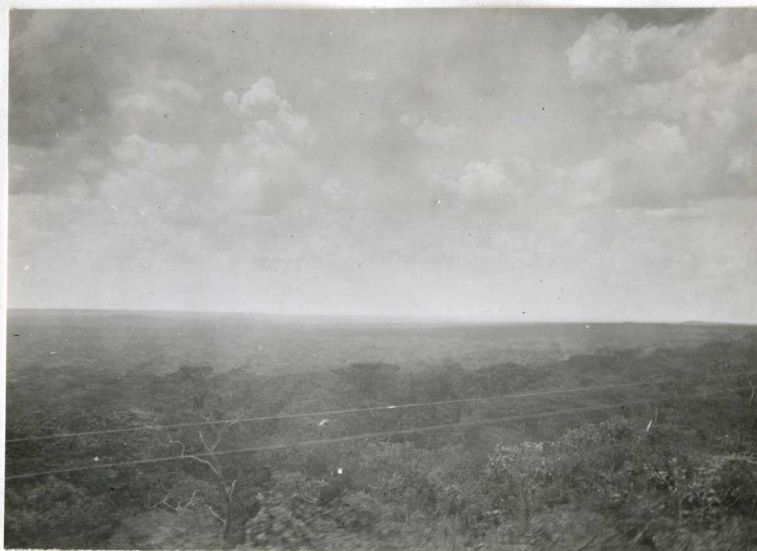
December 18, 1919. Sekania to Elizabethville. There is no change in the vegetation as we passed north from Sekania. Timber along the track has been cut for fire wood, since the engines burn wood, and the natives in this whole section seem to be engaged in gathering wood for the railway.



s-10. Shows typical native village at the side of road, with trees still standing. In the foreground they have been cut. Typical of the whole section. Anthill is shown at the left on which are growing large trees. The anthill on the opposite side is covered with the same type of trees. Along much of the road the rocks outcrop rather prominently.



s-11. Is a general view out over the great forest from point where the railway follows the ridge.



s-12. Also taken from the ridge or watershed which separates the Congo drainage from the Zambezi. The forest is perfectly uniform. The ridge on which the railway runs is 50-75 feet above the surrounding country. This gives unusually beautiful effect.

The soil here is red all the way down and plants begin to root deep, 6 feet or more. The anthills, which are about 15 feet high, quite commonly show bamboo and begonia. The small begonia which growss in our greenhouses seems to be the same as the one growing here. Occurs on anthills, soil banks, and even on old trees.

Note.-- We had no end of engine trouble on this trip and have chased a dining car all day and all night. Finally at 3:30 a.m. the station agent took us into his home, where his wife, who could speak a little English, gave us a meal of sardines and bread. We had had nothing since the evening of the 17th.

December 19, 1919. Still on the track and on the move a part of the time. We have made 180 kilometers in 24 hours. That is, 120 miles in 24 hours. Average rate 6 miles an hour.

There is no change of vegetation except that the trees are short in places, ranging in height from only 10-15 feet to about 30 and 35 feet. In most places the average height is 30-50 feet. There is little change in species. Sweet potatoes is one of the best crops in this section. They bring about 0.25 francs per kilo. Is no trouble in planting and can be left in the ground until used.

Note.-- There is no change of vegetation between Sekania and Elizabethville. During part of the trip the track follows the high ridge, the watershed between the Congo and the Zambezi. Occasionally trees are reduced in size to 12-15 feet high, but as a rule they are from 30-40 feet high. Anthills are prominent everywhere, and are usually well wooded. Contain in addition bamboo, begonia, Burkea.

Arrived at Elizabethville, Congo Belge, at 11 a.m.

Meteorvological notes taken from time to time at Elizabethville. It

was rather cool most of the time and rained almost every day. Not when the sun shone. The rains were followed by clear sky with cumulus clouds, and in fact it was surprising to see how sharp was the alternation between full sunshine and heavy clouds.

December 26, 8 a.m., rain, 67-65.5° F.

" 27, 9 " clear 69.5 - 66.5° F.

" 30 2:15 p.m. clear, 80.5-72° F.

Elizabethvill is a town made by the Etiole de Congo, or Union Meiron. It is a young town, perfectly laid out with wide streets. Many new buildings are of cement and ant-proof. There are a number of English and American residents, most of these men being managers or engineers, and a large number of Belgians, who appear to be very cultured and polite fellows. M. Deneuter, chef de Service de l'Agriculture of the District of Katanga, has charge of all the agriculture of the district. Apparently the whole country is controlled by the mines. There is very little produced and almost all food materials and the like are shipped in from Rhodesia.

I spent most of my time the first few days trying to pull the expedition together and to bluff some one into cashing a Treasury check. I sometimes wish that those in charge of the management of the finances of our government be condemned in the next world to travel in foreign lands with Treasury checks. I have absolutely no certification that there is money in the Treasury to pay these warrants. Even the letter from the chief is only stamped or printed. There are no signatures anywhere. It would be much easier to cash a personal check. And under these circumstances the amount of time wasted is decidedly annoying. To accompany an expedition is also annoying in the extreme, since a great deal of time must be wasted. Records and negatives take much time. Never had a moment when I could not find plenty to keep me going, even during these