

A SMALL WHITE-SAND SAVANNA IN SOUTHERN SURINAM and the RORAIMA FORMATION

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...We may say that white-sand savanna's are found in Suriname, British Guiana and the northern part of Brazil, but that their distribution is still imperfectly known, and that analytical vegetation descriptions are almost entirely lacking.
P.C.Heyligers, 1963

Heyligers' research on the *Vegetation and soil of a white-sand savanna in Suriname (1963)* was the start of a series of similar, detailed studies on the vegetation of the Savanna Belt in **northern Surinam** by Van Donselaar, Van Donselaar-Ten Bokkel Huinink, Teunissen & Wildschut and others.

Later on (1966-1970) small pockets of white-sand savanna were discovered in **southern Surinam** and **northern Brazil**, surrounded by savanna bush and savanna woodland, islands in the vast rainforest.

Were these different in any way?

The following notes/observations are aimed to give a tentative answer to that.

THE VAN DONSELAAR STORY

After having completed a reconnaissance trip to the great savanna of the upper Sipaliwini (Aug./Sept 1966), botanist Jan van Donselaar payed a visit to one of three stretches of white-sand savanna just South of the Sipaliwini river, opposite the airstrip. Accompanied by his assistant John Tawjoeran, he recorded the species composition and structure of the vegetation.

This small white-sand savanna (250 ha.) consisted of a flat area of open vegetation with, at first sight, some different plant species, compared to the savannas of the large Sipaliwini/Paroe complex which Van Donselaar had visited earlier.

Unique type of savanna in the upper Sipaliwini area, as far as he knew !

He noted that the vegetation showed a mosaic of savanna and savanna scrub, blending into savanna woodland, bordering the rainforest.

The soil was light-coloured, consisting of pure loamy sand.

It was quite obvious that the water level would be high during rainy seasons, inundating the vegetation for some time, though traces of recent fires were proof of alternating dry periods.

The small white-sand savanna South of the Sipaliwini river



Photo Jan van Donselaar

The open savanna elements were for large part covered by one single vegetation unit: the *Rhynchosporium curvulae*, belonging to the *Bulbostylidion lanatae* alliance.

Jan van Donselaar analysed the vegetation according to the French-Swiss school, using the Braun-Blanquet scale (+,1-5) for classification.

In addition to photographs he noted down the following vegetation sample:

* *Rhynchospora curvula* (3), *Bulbostylis lanata* (2), *Mesosetum tenuifolia* (1), *Abolboda pulchella* (1), *Sauvagesia sprengelii* (2), *Rhynchospora graminea* (1), *Comolia lythrioides* (1), *Perama hirsuta* (+), *Rhynchospora barbata* var. *barbata* (1), *Rhynchospora globosa* (+), *Panicum nervosum* (1), *Polygala adenophora* (+), *Cassytha filiformis* (+).

Occurring nearby: *Mesosetum loliiforme* (+), *Syng.-Xyr.*, *Panicum succisum* (1 specimen), *Utricularia adpressa* (2 specimens), *Xyris* spec. (1 specimen), *Syngonanthus* spec (+).

Shrubs he found: Marliera montana, the dominant species, accompanied by Clusia nemorosa, Cordia schomburgkii, Coccoloba mollis R?, Tetracera asperula, Miconia ciliata, Licanea micrantha R?, Hirtella paniculata R? and Humiria balsamifera var. balsamifera.

* underlined species are considered to be Roraima elements.

Lichens (Cladonia) covered part of the soil.

This type of vegetation might be characterised as a Muri-bush, called muri-muri in the Surinam language.

In a lecture, presented to the Latin-American Botanical Conference in Brasilia (1975) Anthony Anderson of INPA (Manaus) stated : Scattered across the Amazonian higher grounds (terra firma) we encounter 'pockets' of white-sand with a reduced bio-mass, showing less diversity. The vegetation is explicitly xeromorphic with a relative high frequency of endemic species.

In Brazil this type of vegetation is called 'campina' or 'caatinga'. It is found on Pleistocene, alluvial deposits, consisting of material eroded from the 'Guiana Shield'.

It should be noted that white sand savannas can be distinguished from one another on the basis of the **shape** of the sand-grains: rounded or angular. See Guppy (1958).

There may be geomorphological as well. See Wensink, thesis 1968.

THE GUPPY TALE

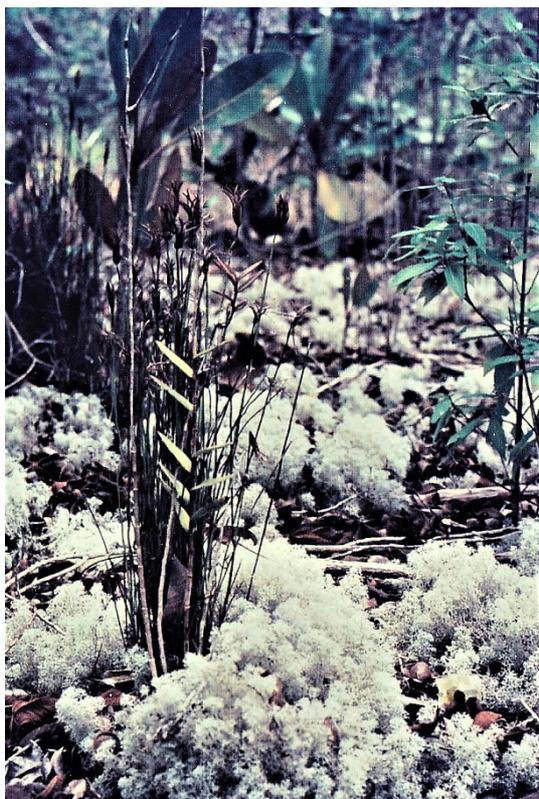
In 1958 the Englishman Nicholas Guppy travelled, during a botanical expedition, on foot from the Rapanui Savanna in British Guiana along the sources of the Essequibo, over the Acara Mountains. Arriving at the watershed, he crossed the Brazilian border, more to the south compared to his predecessor Robert Schomburgk in 1843, who arrived at the upper Trombetas or Cafuini to travel Northwards along the Koetari and the Coeroeni to Surinam territory.

Nicholas Guppy marched on to penetrate deeper into Amazonia, South of the Cafuini, hoping to find "a large savanna area, surrounded by shrubs with yellow and purple flowers", that should be somewhere there according to his guide/interpreter.

When they finally set foot on this open area, it turned out to be, disappointingly, a very small savanna on top of a sandy hill with shiuru palms and a ground layer of sedges, grasses, Xyridaceae, Polygala timoutou, Utricularia spec., Melastomataceae with long leaves and yellow petals. Mauritia palms were also present.

Other species he encountered were small Humiria balsamifera trees, carrying epiphytic orchids and bromeliad's. The soil was covered in lichens (Cladonia spec.).

A glasslike fern drew their attention, covered in dead buds and leaves.



Cladonia covering the soil

Photo Joop Schulz

Similar sandy areas were, as far as he knew, present in the Guiana's only in 'White Sand Sea' area's .

According to Guppy these 'White Sand Sea' sands are washed off remnants of a former sandstone plateau, the Roraima formation, which once covered all of the Basic Granite Complex before it was lifted up and washed away subsequently.

In Surinam only the spectacular Tafelberg (Table Mountain, 1080 m.) remains from that period, situated and being a landmark in the vast rainforest area of southern Surinam. Here we find some scattered small white-sand savannas. The white-sand soils contain sand-grains that are small and **rounded**, unlike those of the Zanderij formation in northern Surinam, where sand grains are sharp- edged and **cube-shaped**.

After a botanical survey, mapping the vegetation of the southern part of the large Sipaliwini Savanna, Schulz, Oldenburger and Tawjoeran visited, on their last day before leaving the Sipaliwini area, a small white-sand savanna to the south of the Sip. Airstrip (same location as Van Donselaar visited earlier). During a relaxed stroll they found plenty traces of recent fires including parched shrubs and savanna bushes. A ground layer of dried up lichens (*Cladonia spec.*) may have intensified such fires, they thought. Find of the day was a small cluster of slender white-trunked palms with a distinctive thorny bark, a new species for Surinam, in the Guianas only known for the Kaieteur waterfall region.



Feddo Oldenburger collecting a Mauritiella seedling. Photo Joop Schulz

Go to **“Best of the Rest”** on this site to learn more.

A leaf-fragment of this palm had been collected in 1963 by the assistant of Palm expert Wessels Boer, who stayed - injured and in a bad shape - at Sipaliwini airstrip. He never had a chance to visit the small white-sand savanna himself.

Jan van Donselaar during his 1966 visit apparently overlooked *Mauritiella armata*.

THE GUPPY TALE (continued)

Apart from being a distinguished botanist, Nicholas Guppy was a self-styled anthropologist with a keen interest in the culture of indigenous peoples. So after having located a **white-sand savanna** in the Acarai region, he returned to British Guiana along the same route he took when entering northern Amazonia earlier, taking the opportunity to meet the Wai Wai and -hopefully- the last of the Taroema (= Saloema) Indians.

The Taroema Indians are a mythical Amerindian tribe, known since the 16th century when they were living along the Amazon river. Building the fort Portalezza at Manaus the Portuguese employed Taroema labourers. When unknown diseases like the flue took their toll, the non-infected Indians fled north.

Some time later the explorer Schomburgk (1804-1865) encountered them during his Orinoco-Llanos travels. Later on he discovered they had settled along the upper reaches of the Essequibo river.

The Taroema were highly valued by neighbouring tribes for their beautiful products like woven loincloths, cassava graters and other artefacts, which were artistically and technically of a very high standard.

Instead of the mythical 'frog Indians', who were supposed to sleep under water, Schomburgk found (1837) descendants of the Taroema that had taken shelter at the sources of the Essequibo. They had not given up on their independence and had travelled North 400 miles, away from their Portuguese masters. At that time there were only 500 individuals left.

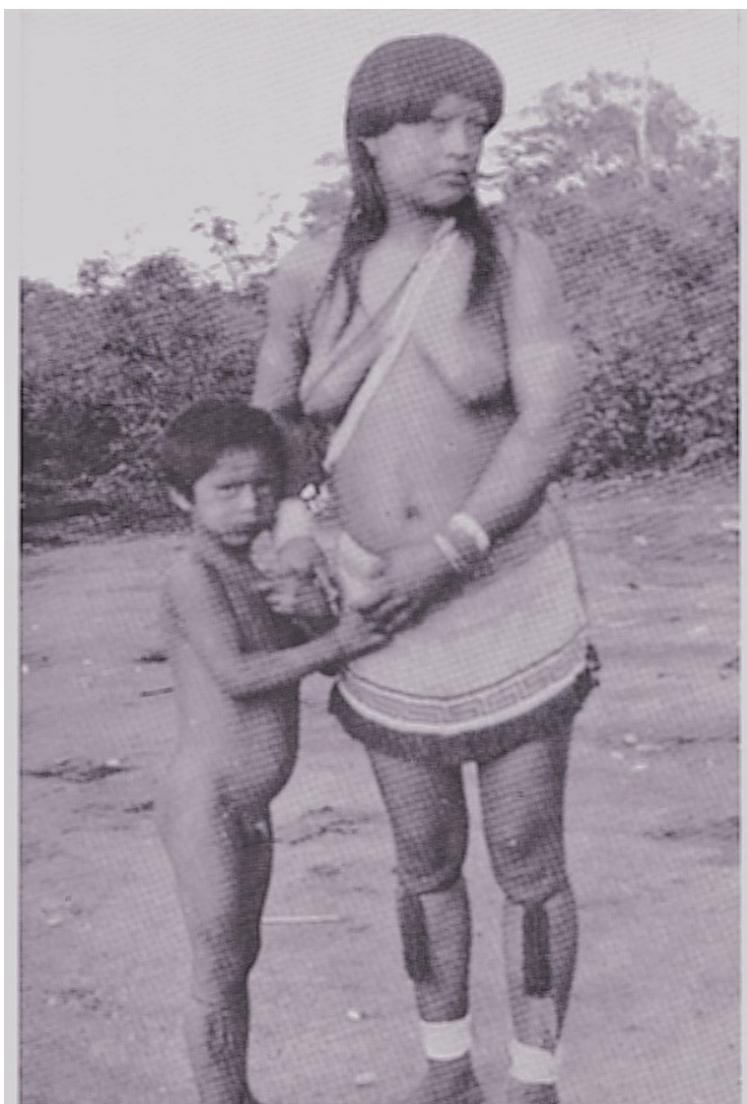
Six years on he visited them again and found only 150 individuals, struggling to cope with these diseases 'civilization' had brought to them. They simply didn't have the power of resistance against the common cold ('coughing disease' as they called it), pneumonia, measles, mumps, chicken-pox, scarlet fever, dysentery, smallpox etc. Often 90% of the population died. A disaster..

Geologist Barrington-Brown, who explored this area 30 years later, encountered only four men, one woman and a girl, all of them very much confused. None of these Indians had ever seen a white person or people wearing clothes.

The Taroema had by that time lost most of their tribal land to the Wai-Wai, who were moving Northwards.

In his account of “Three travels to the Indians of the interior (Surinam)” Lodewijk Schmidt writes (1941), that according to the Trio Sipoti (in the village of the same name on the Malapi) the Taroema once were peaceful neighbours to the South. After some disagreement a row developed. As a result the Trio kidnapped a Taroema woman and her daughter. A photograph of this daughter (Makoebela) and her son is included in his report.

See “Reisverhalen: Verslag van de tweede reis naar de Paroe Savanne door Lodewijk Schmidt (1941): pg7”, to be found on this site.



Makoebela and her son at Sipoti Photo Lodewijk Schmidt

Is this the last image of the legendary Taroema ??

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