

Three Reconnaissance Flights over the Interior of Suriname with the KLM aeroplane ‘The Snipe’ in 1939
and
A brief Survey of the Vegetation on Inselbergs in the Tumuc Humac mountain region of South West French Guyana

By Oldenburger, F.H.F. & Norde,R.*

Online publication 2009

*Correspondence author. Email: r.norde@kpnplanet.nl

As argued in the former chapter we consider the rock pavement vegetation of granite plates and inselbergs as an edaphic desert rather than an ecotone between rainforest and savanna.

To understand its presence within the Sipaliwini Savanna area we have to study it in a much wider perspective, both in space and time. A bird’s-eye view of the blue mountains to the North, across the ‘Grensgebergte’ and the Tumuc Humac range to the ‘Eilerts de Haan’, the ‘Orange’ and ‘Wilhelmina’ mountains way up North and the ‘Tafelberg’ (Table Mountain), a sandstone relict of the Roraima Formation, in the centre of the country, will reveal more granite plates and Inselbergs.

Here altitudes are ranging from 600 – 700 m. up to 800 – 900 m. or even to over 1200 m. in the ‘Wilhelmina’ mountains, where the ‘Juliana’ top, the highest mountain of Suriname, reaches 1230m

This means that these mountains do all have peaks, many of them inselbergs, exceeding the height of the ‘4 gebroeders’ mts (554 m), the ‘Morro Grande’ (596m) and even the isolated Kantani in Brazil, rising above The Paru Savanna peneplain.



Kantani on the horizon

In 1963, during the combined Surinam–American (LBB–NY Bot.Garden) Lucie River expedition of Schulz and Maguire (see Hoogmoed, 1973), John Tawjoeran and Joop Schulz accompanied by two others, Nunez of the GMD (Geology and Mining Department) and an American botanist, climbed the ‘Juliana’ top and reached the summit. To convince the rest of the world that they had made it to the highest point of Suriname for the first time, John Tawjoeran climbed an isolated tree growing at the summit to raise and plant the ‘Surinam Flag’.

This heroic moment was apparently immortalized on a photograph by Schulz which has since gone missing.

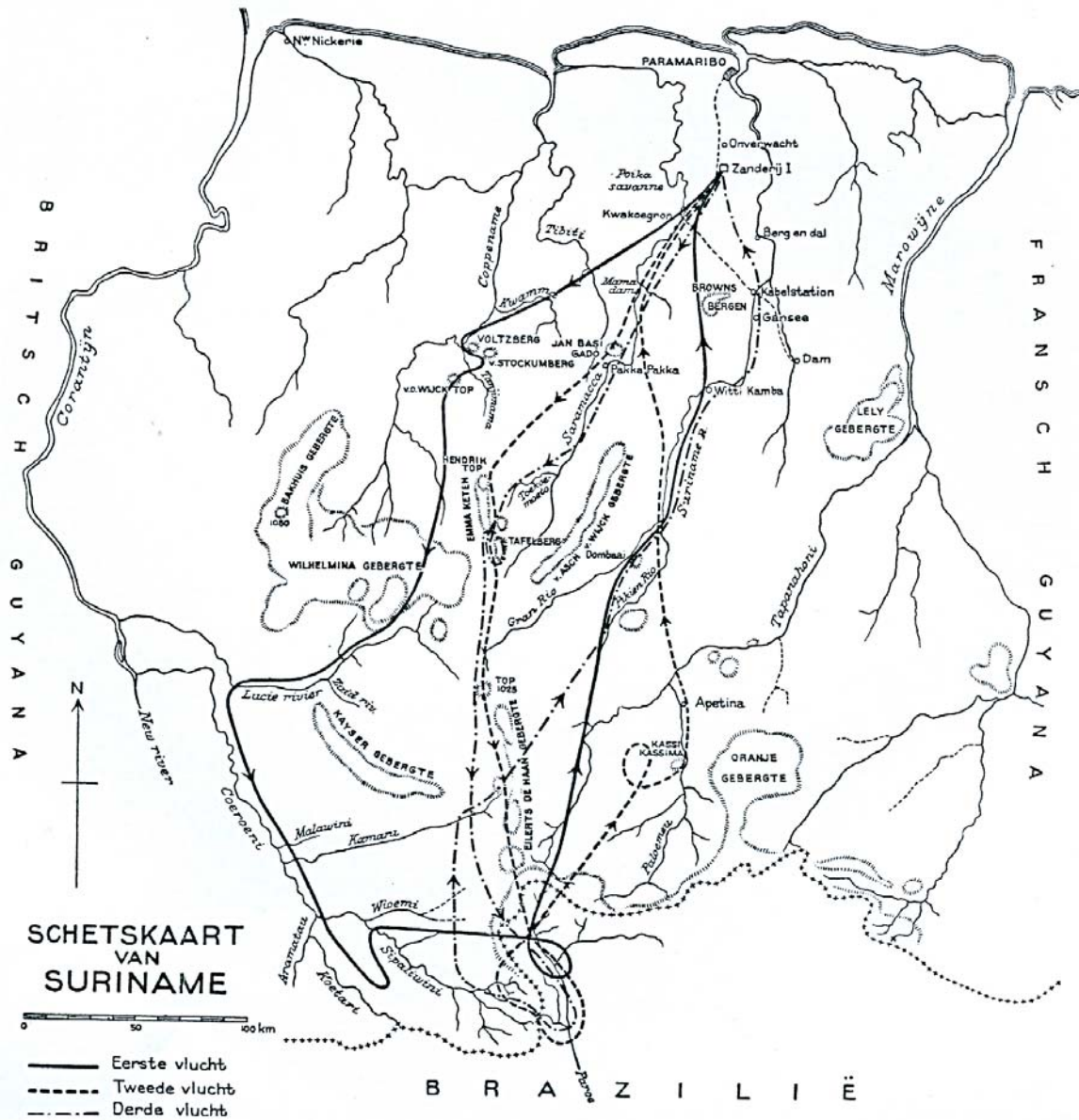
Another mystery of mountaineering history that we are still trying to resolve.

Let's return now to the xerophytic rock pavement vegetation on inselberg tops and granite plates.

Its presence on the Sipaliwini Savanna may be surprising, to encounter it – widespread – within the humid tropical rainforest formation is an outright miracle.

In the climatologically conditioned series of vegetation zones on a world scale the desert formation is at the extreme dry end of it. Our rock pavement vegetation on the contrary occurs all over Surinam amidst the per humid rainforest.

This phenomenon had already been noticed by Prof.Dr.G. Stahel and the biologist Dr. D.C. Geyskes during a reconnaissance flight across the Surinam interior with the KLM aeroplane 'The Snipe' in July 1939.



On the lookout for possible airstrip locations in the Sipaliwini-Paroe savanna complex, they set out from the air-field 'Zorg en Hoop' on the 16th of July. No sooner had they left the coastal zone with the white-sand Zanderij Formation than they saw widely scattered granite plates, sometimes covered with clear green clusters of *Clusia* shrubs. And before they reached the Kwamma Creek they noticed the first inselberg, an isolated and completely bare granite mountain.

Having passed the 'Voltzberg' they saw the barren granite slopes of the 'Van Stockum' mts. and to the West of the Sipaliwini Savanna they discovered, in between the Sipaliwini- and Koetari rivers, a lot of open granite plates bordered by muri-muri bushes.

Next day, during their second flight, they managed to fly over the 'Tafelberg'. From the air the horizontal plateau seemed covered by small savanna treelets and a low scrub vegetation. Geyskes made an illustrative drawing of this location, making it clear that one can only ascend the steep mountain sides in those two places where the sandstone has succumbed and deteriorated into a talus.



Table Mountain in Surinam

INSELBERGS IN FRENCH GUYANA.

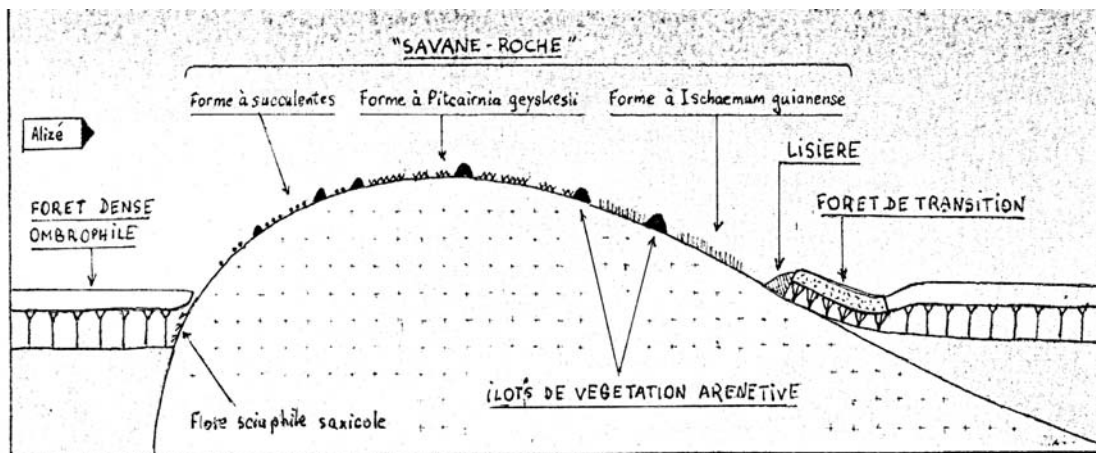
Like Schulz and Van Donselaar (1973, unpublished) J.J. de Granville, a French botanist, did a study on the vegetation of inselberg tops and slopes within the tropical rainforest environment of the Tumuc Humac mountain range in the extreme South-West of French Guyana.

We are lucky to have at our disposal an undated 'typo manuscript' (pp.15) dealing with the results of that study. That may be the same text as published in *Willdenowia* 21: 201-213 (1991) entitled "Remarks on the montane flora and vegetation types of the Guianas" (reference: Gröger and Huber, 2007).

Interestingly it contains a profile diagram of an inselberg situated within a rainforest environment (see p. 4).

In his short survey he distinguishes 4 types of ‘savannes roches’ or rock savannas occurring in Guyana:

1. Simple bare rock plates, slightly sloping, within the forest. Examples are the Temomaiem in French Guyana and the Great Granite Plate (Sipaliwini) in Surinam.
 2. Great granite domes like the ‘Sommet-de-cloche’ in French Guyana and the ‘Morro Grande’ in Brazil.
 3. Real ‘Sugar Loafs’, for instance the Kantani in Brazil and the ‘Tonkouchipann’ in French Guyana.
 4. Complex massifs like the ‘Mitaraka’ and ‘Paloulouiméenpeu’ in French Guyana
- The Granville diagram (see p.4) differs from that of Van Donselaar & Schulz in that the transition zone from rock outcrop vegetation to forest – on the ‘lee-side’ is characterised by *Ischaemum guyanense*. On the Sipaliwini Savanna this grass is part of the ‘Hygromorphic (sic!) High grass and Shrub Formation with Palms in Depressions’ (see section ‘Vegetation’ elsewhere on this site).



Répartition schématique des principales formations végétales à un inselberg

Another deviation is De Granville’s temperature measurement. For air temperature just above the granitic substrate with the sun in zenith he states an average of 40°C. This is far below the 55 - 70°C, postulated by the expert micro-climatologist Ph. Stoutjesdijk (personal communication, 2009).

Data gathered by our colleague H.Th. Riezebos may solve this problem. His study on the Great Granite Plate (1972) will be discussed later.

REFERENCES

C.B.L., 1975: Kaart van de Republiek Suriname (Map of the Republic of Suriname). Ed. STINASU, 5e druk.

De Granville, J.J.: Aperçu sur la végétation des Inselbergs du Sud-Ouest de la Guyane Française. O.R.S.T.O.M de Cayenne p. 1 – 13, + prof.diagramme (see above).

De Granville, J.J., 1991: Remarks on the montane flora and vegetation types of the Guianas. *Willdenowia* 21: 201 – 213.

Gröger, A. & O. Huber, 2007: Rock outcrop habitats in the Venezuelan Guyana lowlands: their main vegetation types and floristic components. *Rev.Brasil.Bot.*, V.30, n.4, p. 599 – 609.

Hoogmoed, M.S., 1973: Notes on the Herpeto fauna of Surinam IV. Thesis, W. Junk, Den Haag.

Stahel, G. & D.C. Geyskes, 1940: Drie verkenningsvluchten boven Suriname's Binnenlanden met het K.L.M. vliegtuig "De Snip". *Tijdschrift K.N.A.G.*, N.VIII, p. 441 – 455. (5 foto's + 2 krt.)

Stoutjesdijk, P. & J. Barkman, 1992: *Microclimate, Vegetation and Fauna*, pp 216. Opulus press, Kniusta, Sweden.