

MALAYAN VEGETATION

FIRES

LIGHTNING

No Minutes should be written on this page. A separate half-sheet to
be used if required.

Malaya - Vegetation

544/33.

28th November

38.

Dear van Steenis,

Very many thanks for yours of November 24th. I am exceedingly grateful to you for taking so much trouble over this, especially when you are so busy with other matters.

I think the conclusions came to about fires caused by lightning in this part of the world are correct. I have often seen trees killed by lightning, without any more damage resulting than the death of that tree and possibly some of the adjacent vegetation.

Only some Gesneraceae are limestone guides. Epithema is as you say, a rock plant. Boea, Paraboea (Eu.Paraboea)^{only} and Chirita are perhaps better guides. Didymocarpus and Didissandra curiously enough are apparently lime aroids.

I will deal with your requests for missing parts of the Materials and No.85 of J.S.B.R.A.S., also with your paper on Dr.Pulle, as soon as I can. Many thanks for reprint of "Exploratie in du Gajb-Landen." I must try to learn to read Dutch!

Yours sincerely,

Dr.C.G.G.J. van Steenis,
The Herbarium,
Botanic Gardens,
Buitenzorg,
J A V A .

Dear Hendersen,

I have still not yet answered your letter of Oct. 20. I have not been lazy but there were several urgent duties and I am miles behind with my work.

The passage on the ~~influence~~ occurrence of lightning, Maleische Vegetatieschetsen in Tijdschr. ^{on} Ned. Aardr. Genootschap vol. 52, 1935, p. 48 (separate p. 24) reads as follows in English:

Fire through struck of lightning seems to occur locally more frequent than one might think. It was communicated to me that in teak forests some spots suffer often and regularly from lightning, possibly above underground water veins. I myself described (Tropische Natuur 23, 1934, p. 166) a burn-vegetation consisting of grasses on a steep conical andesite peak, Mt Aseupan in ~~Krawang~~ Krawang which probably suffers probably regularly from struck of lightning. F. H. Endert (Midden Borneo expeditie 1925, 1927, p. 226-227) mentioned struck of lightning on ^{Oost} steep limestone hills in Central East Borneo, where after fire firstly Epithema, ~~then~~ a small fleshy herb, later ferns (among others Nephrolepis and Pteridium aquilinum, the latter a typical fire-plant) and at last shrubs gained ground. H. N. Ridley ~~twrote~~ wrote me that he had found plenty traces of lightning struck on the sandstone plateaux of G. Tahan, Malay Peninsula.

I may add that later the forester Dr. D. Burger wrote an article entitled Bliksem als oorzaak van boschbrand (Tectona 29, 1936, p. 881-893)

I mention the following translated passages from this article of which the title is in English Lightning as a cause of forest fires.

p. 881. Ritsema van Eck, C. R. S., (in Tectona 13, 1920, p. 336-358) says :

Forest fire originates in the Javan mountainforests only by man's influence. Struck of lightning which can cause fire is here always accompanied by heavy rains. Lightning occurs only during the West monsoon (the wet season v. St.) and then there is no fear for forest fires.

^{confirms}
Burger ~~assumes~~ that he also has seen numerous traces of struck of lightning in teak forests but denies that this has caused forest f i r e s.

Burger also found that in the very inflammable ~~Ca~~ mountain casuarina forests of East Java numerous traces of lightning struck occur. The centre of Mt Andjasmoro - a ridge with inflammable grass-Casuarina savannah - is called poesoeng gelap, which means lightning-ridge. Traces of lightning are found along the Casuarina stems, but there has occurred no fire during the period 1929-1933.

p. 881-882. Burger went through reports of ~~fires~~ 2602 fires. In only 1 case fire was reported as being caused by lightning. This fire which burned down ca 1 sq. km of mountainforests was extinguished by rain. (The argument is not very convincing as 48% of the reports, that is nearly one half or 1300 fires did not mention any cause known, better said : cause unknown. Among these 1300 fires there must have been certainly more caused by lightning as this cause easily escapes observation at remote spots such as mountain tops and -ridges are! v. St.)

p. 882. Burger also concludes from the fact that in well-preserved areas fire does not occur any more, that ~~fire~~ lightning can be neglected as a cause of forest f i r e s.

p. 883. Burger mentions, however, that contrarily in Finland and California a large percentage of forest fires is caused by lightning, in Oregon and Washington more than 50% of all fires! In Holland, Belgium, South Africa and Russia only a small percentage is due to lightning. Braak, the meteorologist has the impression that tropical lightning is less powerful than it is in temperate regions, and, moreover, is always accompanied of followed by heavy rain.

Dr C. G. G. J. VAN STEENIS,
HERBARIUM, BUITENZORG,
JAVA, N. E. I.

Burger gives a one page summary in English but perhaps my notes are sufficient. His main conclusion is that though lightning occurs - in some cases, especially on ridges and peaks - rather frequently in East Java it has no importance for forest fires, the latter being practically always caused by anthropogenous accidents, wilful or not.

On lime stone plants I have made a further short note in the recently received-printed report on my Atjhe expedition:

Steenis, C. G. G. J. van, Exploraties in de Gajo-landen. ~~Resu~~ Algemeene resultaten der Losir expeditie 1937 (Tijdschr. Kon. Ned. Aardr. Genootschap 55, 1938, p. 769), which I translate here:

..(description of a trip)...The geology of the country is so confused to my eye-inexperienced eye. The principal formation is shale, but I also met with gravel layers and limestone. The latter is the most interesting for me, on account of their flora, some Gesneriaceae being held as guides for limestone. Elsewhere I have doubted this and here I could prove along the course of the Aer Poetih that Epithema may occur on pure quartz-rocks (with the aid of chloric acid) this was proven on the spot; Epithema is not a guide for limestone, it is a rock plant.

For completeness' sake I mention further the article of By L. van der Pijl, in De Tropische Natuur, shortly appeared after my conclusions on limestone flora in Java on the occasion of a sketch of the flora of the G. Tjibodas near Tjiampea (not Tjibodas on Mt Gedeh). I have formerly sent you a reprint

The article of Van der Pijl deals with the lime stone flora of some hills near Bandoeng, Central West Java. It is published in De Tropische Natuur 22, 1933, p. 86-95. He distinguishes 5 different ecological plant groups in which this flora can be divided. This was not published when I wrote my Maleische Vegetatieschetsen; Van der Pijl is rather teleologically but strikes many interesting points, which you might need.

I will be very happy to see your interesting paper printed, as you must have a lot of information, more than any one in Malaysia.

There is another thing to be said and a favour asked by me. Some years ago you were so kind to furnish me with a copy of King & Gamble, Materials. I have used it often and thought it was complete. However, parts 1, 12 and 15 are absent. If you might have some odd numbers at Singapore I would be very anxious to complete my copy. Recently there was published another part Euphorbiaceae by Vage. How can one obtain that?

Occasionally you mentioned some time that there was an incomplete series of parts of the Journ. Str. Br. Roy. Asiat. Soc. Is among these "no. 85" in which Merrill published his first article on Bornean plants? I have nos. II-III/

kindly yours

C. G. G. J. van Steenis

B75/4

24-6-29
K.C.P. following
I am sending in the
reply for the 9th

K.C.P.

July 9th will suit me.
K.C.P.
28/7/29

(3) ...
K.C.P.

Enclosed
K.C.P.

Dear ...
K.C.P.

Dear ... Thank you. I regret
my absence from the meeting.
28/7/29
K.C.P.

24-10-29
(At) K. B. ...
I will call a meeting
for the 15th
K.C.P.

Nov: 15 would suit me.
K.C.P.

Dear ...
K.C.P.