

NOTES ON GUIANA FERNS

by

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1. The oldest known collection of Surinam Plants is that of Des Marets, which forms part of the large collections of Sloane in the British Museum (Natural History). As it has never been mentioned before, it seems to me desirable to give a short description of it. ¹⁾

The collection of Des Marets in the Sloane Herbarium consists of two volumes. The first, vol. 261, contains plants, gathered for Des Marets at the Cape of Good Hope; the second, vol. 291, contains the plants from Surinam. It is a collection, mostly of leaves, with a few good specimens, without labels. Often the state of preservation is very good. They were gathered for Des Marets, at whose auction they were bought.

In the collections of the British Museum are letters from Des Marets to Sloane, asking him to obtain various plants from Jamaica, for which Sloane was then starting (1686); the other thanking him for seeds, send through Charleton. Moreover Des Marets seems to have carried on a correspondence with George London (d. 1715), who was gardener to Bishop Counton and to King

¹⁾ I am much indebted to Dr. Rendle, keeper of the Botanical Department, British Museum (Natural History) who kindly permitted me to study the collection.

William and Queen Mary. I possess no further data about Des Marets, who lived at the Hague.

These plants were not studied by Des Marets, but afterwards, the exact date of the auction is unknown, they were quoted by Sloane in his copy of Raii *Historia Plantarum* and on the leaves of the Herbarium volumes their place in this system is indicated.

The Ferns, present in this interesting collection (Herbarium Sloane, vol. 291), are: *Hemitelia multiflora* R. Brown (p. 46), *Alsophila microdonta* Desvaux (p. 47), *Alsophila pungens* Kaulfuss (p. 48); these three specimens are referred to on p. 84 of Raii *Historia plantarum*; p. 92 contains three leaves, the left hand one is *Polypodium Phyllitides* Linn., the two other ones are *Polypodium crassifolium* Linn. They are referred to on p. 52 of Raii *Historia Plantarum* as *Polypodium foliis Lingua Cervina majus* Plumier. Moreover p. 91 contains an additional leaf of *Polypodium crassifolium*.

2. *Lindsaya sagittata* (Aublet) Dryander.

Of this species specimens have been gathered by Messrs Gronggrijp and Stahel on the Brownsberg (No. 587) and on the Hendriktop at about 1000 M. above sea level (No. 5724). It was previously collected in French and in British Guiana ¹⁾. A closely allied form is *Lindsaya reniformis* Dryander, the type specimen of which was gathered by Andersson in Surinam (now in the British Museum, Natural History). It has also been found in French and in British Guiana.

The specimens gathered by Messrs Gronggrijp and Stahel preserved in the Herbarium of the University of Utrecht, are very important for the study of the interrelation of these two forms, the only species of *Lindsaya*

¹⁾ Baker in Flor. Bras I. 2, 1870, p. 357.

with simple leaves. From the Brownsberg two plants are present. One of them has two leaves, both of which are sagittate, the top and the basal lobes are acuminate with a rather strong vein, giving off lateral veinlets; the sorus is interrupted at the top and at the tops of the basal lobes. Of the other plant the lowest leaf has a short sorus only, the top is subacuminate, the basal lobes rounded, with all veins equally strong. The next leaf has the basal lobes spreading at right angles; the sorus is at one side slightly interrupted, continuous on the other side. In these lobes the veins are also nearly equal.

The specimen gathered on the Hendriktop consists of one plant with 5 leaves. The lowest leaf but one has an acuminate apex with rounded basal lobes; the sori are continuous on both sides. The next leaf is similar, but with subacute basal lobes, with continuous sori; the fourth leaf has the top acuminate, one of the basal lobes subacute with continuous sorus, the other lobe is acuminate with the sorus interrupted; here a distinct main vein is present. The youngest leaf is not yet fully developed. These leaves occurring on the same plant clearly show the variability in shape of the basal lobes; in all of them the top is acuminate. The same feature is shown in the type specimen of Aublet which I had the opportunity of seeing in the British Museum (Natural History). Only one of the leaves of this has the basal lobes acuminate, they are rounded in the other ones. In a specimen, gathered in British Guiana by Appun (preserved in the Kew herbarium) the leaf is irregularly lobed on both sides between the top and the basal lobes; the sori are not interrupted. Another intermediate form is seen in a specimen gathered by Appun at the Essequibo river in British Guiana (No. 42, preserved in the herbarium at Berlin-Dahlem). Here one of the lobes is rounded, the other one is acute. The top of the leaf shows a small sinus, probably due to an arrest in

development, similar to that in the leaf mentioned before.

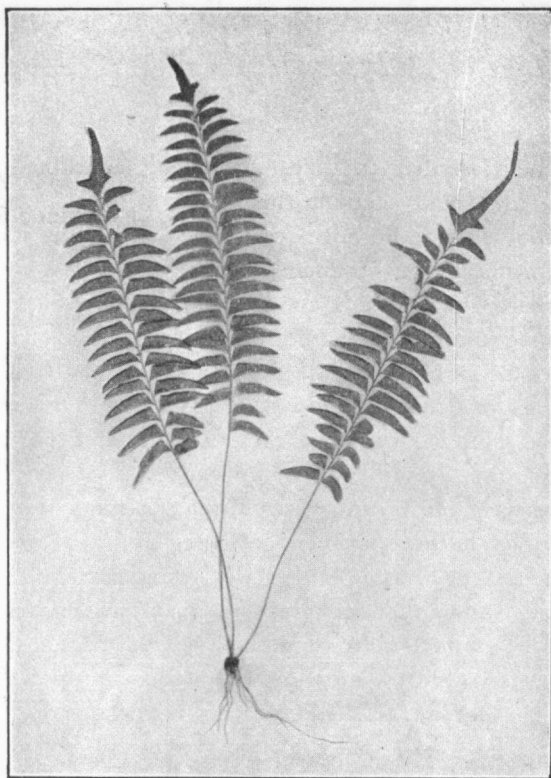
If we take into account the leaves with rounded basal lobes, the only difference of these with the leaves of *L. reniformis* is the absence of the acuminate apex in the latter; there the sorus is continuous all round and a main vein giving off lateral veinlets is wanting.

It may be noted that the acuminate top in *L. sagittata* also varies in size; in the lowest leaf but one of the specimen from the Hendriktop it is relatively small. Kunze ¹⁾ suggested the possibility of the existence of intermediate forms between *L. reniformis* and *L. sagittata*. The lowest leaf of the latter specimen may perhaps be regarded as such. Here the basal lobes are rounded, the sorus is continuous and a main vein is also wanting. In these characteristics it is quite similar to *L. reniformis*; the sorus however is slightly interrupted by the presence of an incision in the top of the leaf; this is perhaps due to some injury during development. The youngest leaf, which is not yet quite grown out, seems to have also a rounded top.

Consequently the different forms of the two species are gradually passing into each others, as demonstrated by leaves of the same plant. Therefore it seems to me reasonable to unite both, regarding *L. reniformis* as a form of *L. sagittata*, which name must be chosen on grounds of priority. By Diels and C. Cristensen (in the index Filicum) this species has been placed in the genus *Schizoloma*, which was founded upon the Asiatic *S. cordatum* with anastomosing veins. Baker in the Synopsis Filicum placed it into the group *Isoloma* of the genus *Lindsaya*, which was created for some Malayan Ferns with equalsided pinnae.

It seems to me however, that its nearest allies must be sought in the subgenus *Eulindsaya*, forming a separate group in it.

¹⁾ Kunze. Die Farrnkräuter, I, 1843, p. 32.



Lindsaya surinamensis Posth. n. sp. 0.3 natural size.



Polypodium Stahelianum Posth. n. sp. 0.6 natural size.

The anatomical structure is a *Lindsaya*-stele which is characteristic for the genus ¹⁾).

3. *Lindsaya surinamensis* nov. spec.

Rhizoma repens, internodiis brevissimis, folia petiolata, pinnata, usque ad 25 cm longa, usque ad 5 cm lata. Petiolus usque ad 8 cm longus, firmus, erectus, basi brunnea paleis fuscis paucis instructa, superiore parte stramineus quadrangularis. Rhachis petiolo similis. Lamina herbacea, glabra. Pinnae alternantes, inferiores suboppositae; usque ad $2\frac{1}{2}$ cm longae, $\frac{1}{2}$ cm latae, apice acuminata, margine superiore recto vel breviter curvato, margine inferiore recto, basi cuneata. Pinna terminalis acuminata, usque ad 5 cm longa, duobus lobis lateralibus instructa; lobis omnibus vena principali destitutae; venis radiantibus. Sori singuli ad marginem superiorem pinnae continui.

This species is allied to *L. falcata*, but it differs by its narrower pinnae, which have a narrow apex; moreover the base is here cuneate, and nearly rectangular in *L. falcata*. In the form of the pinnae it shows some resemblance to the forms described as *L. arcuata* Kunze, or *L. horizontalis* Hooker, which however differ in other respects.

Surinam: Suriname river, near Brown-mountains, gathered by Messrs Gronggrijp and Stahel, No. 641; type specimen in the Utrecht herbarium.

4. *Polypodium Stahelianum* nov. spec.

Rhizoma erectum, internodis brevibus; folia petiolata, pinnata, herbacea, usque ad 15 cm longa, usque ad 2 cm lata; petiolus tenuis, circa 2 cm longus, pilis patentibus mollibus ferrugineis vestitus; pinnae utrinque circa 15, alternantes, aproximatae, oblique patentees integerrimae, apice rotundatae; pinnae medianae usque ad 12 mm longae,

¹⁾ Bower, the Ferns, 1923, p. 74, fig. 68, IV.

usque ad 4 mm latae, inferiores basi dilatatae; superiores breviores, laminae pars superior lobata, apex plerumque integer, elongatus; pagina superior sparse, pagina inferior margine, rhachique magis dense pilosa, pilis albis; costulae flexuosae; venae simplices marginem haud attingentes: sori in pinnis singuli, usque ad 10, costulae approximati, superficiales, rotundi.

Surinam; Emmaketen, top II, 700 M above sealevel, Gronggrijp-Stahel 5765; type specimen in the Utrecht herbarium.

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