

# « PITYROGRAMMA ORNITHOPTERIS » (KLOTZSCH) DOM. AND ITS VARIETIES

BY KAREL DOMIN

(CHECOSLOVAQUIA)

## RESUMEN

« *Pityrogramma ornithopteris* » (Klotzsch) Dom. y sus variedades. — El autor establece cuatro variedades nuevas para *Pityrogramma ornithopteris* (Klotzsch) Dom. que son : var. *typica* Dom., var. *decomposita* Dom., var. *Sanctae-Martae* Dom. y var. *guianensis* (Klotzsch) Dom., sobre material sur y centroamericano.

*Pityrogramma ornithopteris* (Klotzsch) Dom. forms with *P. subnivalis*, *P. flexilis* and *P. chrysoconia* a natural group of closely allied species in the sense of some authors. In many respects it resembles *P. tartarea* is, however, readily distinguished by its pale and non lustrous rhachis and stipe. The synonymy of this species is as follows :

*Gymnogramme ornithopteris* Klotzsch in *Linnaea* XX, 413 (1847) sensu ampl. *Allosorus farinosus* Kze. (nomen ex Klotzsch l. c.) *Farnkr.* II, 5, t. 103 (1848) (tab. color. optima!).

*Gymnogramme tartarea* var. *pallidipes* Hook. *Spec. Fil.* V, 149 (1864) p.p.

*Gymnogramme tartarea* γ *ornithopteris* Hook-Bak. *Syn. Fil.* 385 (1868) p.p. (exclusis formis aureo-furfuraceis).

*Ceropteris tartarea* var. *ornithopteris* C. Christ. *Ind.* 170 (1905).

*Pityrogramma ornithopteris* Dom. *Clavis*, 5 (1926).

*Pityrogramma guianensis* Dom. in sched. herb. nonn.

The following varieties seem to be worth describing :

1. var. **typica** m.

*Gymnogramme ornithopteris* Klotzsch, l. c., sensu str.

*Excellit pinnulis valde coriaceis, rigidis, marginibus valde recurvis vel revolutis itaque plerumque angustis et linearibus.*

Colombia : 1. Páramo de Mueuchies, Moritz, nº 288, type specimen of *G. ornithopteris* Klotzsch (H. Kew); 2. Bogotá, Bro. Ariste-Joseph, 1911, nº A 211 (Nat. H. Wash.); 3. forest between 9000-9500 feet, Kalbreyer, 1881, nº 1986 (H. Kew); 4. Bogotá, 2700 m. t., Lindig, nº 33 (H. Kew); 5-7 Herbarium Americae aequinocialis, Edouard Francois André, nº 709, 1875 : Boquerón del Río de Bogotá, 2750 met., nº K. 204 : Puerto Cabello and nº 707 (notes missing) (H. Kew), formae laminis valde coriaceis var. *typicam* revocantes, sed pinnulis pro parte majore planis ad var. *guianensem* vergentes.

Ecuador : in silvis montanis, P. L. Sodiro, 1871, nº 3<sup>52</sup> (H. Kew), f. *seminigripes*, valde typicā, sed stipitibus ad medium vel duas trientes fuscoviolaceis.

Perú : Tabina, in rupestribus, W. Lechler, 1854, pl. peruv. ed. R. F. Hohenacker, nº 2022 (H. Kew).

Venezuela : Mérida : Páramo de Timotes, alt. 3000 meters, Alfredo Jahn, 21, Jan. 1922, nº 864 (Nat. H. Wash.).

Bolivia : Umduavi, Nordyungas, 3300 met., O. Buchtien, XI-1910, nº 2676 (Nat. H. Wash.), minus typica, fronde una pinnulis subplanis instruncta aliquantum ad var. *guianensem* vergens.

Panamá : Summit of Chiriquí Volcano, alt. 3374 meters, cliff among rocks, W. R. Maxon, March 12-1911, nº 5356 (Nat. Herb. Wash.).

Jamaica : 1. near Blue Mountain Peak, W. Harris, 1898, nº 7488 (H. Kew).

Upper western ridge of Blue Mountain Peak, alt. 1950 to 2100 meters, dryish rock and earth bank, in open, at side of trail, W. R. Maxon July 9-1906, nº 10.017 (Nat. H. Wash.), according Maxon the only small locality on the island.

2. var. (Klotzsch) **guianensis** m.

*Gymnogramme guianensis* (Klotzsch) in *Linnaea* XX, 413 (1847).

*Ceropteris guianensis* Hieron. in *Hedwigia* XLVIII, 221 (1909).

*Pityrogramma ornithopteris* var. *expansa* Dom. in sched. herb. div.

*Differ a typo pinnulis plurimis vel omnibus planis latisque; pinnae inferiores saepe plus distantes.*

British Guiana : Rich. Schomburgh, n° 1154 (H. Kew), type of *G. guianensis* Klotzsch.

Colombia : 1. Dept. Santander : Vicinity of California, alt. 2600 meters, E. P. Killip & Albert C. Smith, Jan. 1927, n° 16,878 ; 2. Dept. Santander : Vicinity of Vetas, alt. 3.100 3.250 meters, open rocky hillsides, in crevices of rock wall, the same collectors, n° 17.912, forma *elatior* (lámina 3 dm longa, stipes circiter aequilongus); 3. near Facatativa, under rock, Bro. Ariste Joseph, May 1919, n° A 400; all specimens in Nat. H. Wash.; 4. leg. Purdie (H. Kew) : forma *denudata*, very typical, the white indument, however, is mostly gone; one frond very large with an abnormally long stipe (more than half a meter!), with flat pinnules and distant pinnae; another small lamina with more crowded pinnules, mostly with very much incurved margins so that they appear linear, and with not so distant pinnae; both fronds may be from the same rootstock (both are denudate and precisely in the same fruiting stadium) but if they were apart one hardly would hesitate to identify the large frond with *G. guianensis* and the small with *G. ornithopteris*; 5. ex montibus juxta Bogotam, L. F. Holton 1852, n° 23 (H. Kew), a very typical form with very broad and very obtuse flat pinnules, white-powdered beneath; not only the rhachises but also the long stipe is nearly to the basis straw-coloured; 6. Santa Marta, G. C., Joad 1863 (H. Kew), a very tall form with quite flat, hardly coriaceous leaves; 7. Ocana to Pomplona, forest border, 7000 feet, W. Kalbreyer 1877, n° 1186 (H. Kew) : f. *densipinnula*, forma maxima ex parte denudata, pinnulis densissimis et partim immo imbricatis ineignis; rhachis uti stipes fere tota pallida, sed subnitida.

Venezuela : Mérida : La Venta, alt. 2800 meters, Alfred Jahn 21-Jan-1922, n° 852 (Nat. H. Wash.).

Peru : 1. Mito : densely shrubby southwestern slope in small tufts, about 9000 feet, Macbride & Featherstone, July 1922, n° 1393 (Nat. H. Wash.); 2. Huanea, leg. Pearce, n° 504 (H. Kew).

3. var. **decomposita** m.

*Maxima, fronde valde dilatata, pinnis valde distantibus, infimis usque fere 20 cm longis, pinnulis distantibus, permagnis, latis, explanatis, inferioribus et mediis ad medium pinnatilobis vel pinnatisectis.*

Colombia : near Facatativa, Bro. Ariste-Joseph, May 1919, n° 4 A 400 bis (Nat. H. Wash.).

4. var. **Sanctae-Martae** m.

*Valde elata, longipes, perelegans; lamina bipinnata, ovato-lanceolata, circa 35-40 cm longa et basi 13-15 cm diametriens; rhachis gracilis stricta (nec flexuosa, tantum immo apice curvata); pinnae divaricatae, sed curvato arcuatae, distincte acuminatae, sessiles; pinnulae perdensae, fere contiguae, ovato-oblongae, inferiores pinnarum infimarum basi pinnatilobae.*

Colombia : Santa Marta, Herbert H. Smith, 1898-99, n° 1061 (Nat. H. Wash.).

Forma elegantissima, pinnis arenatis et pinnulis densis nec non laminae forma praestans.

*Note.* — After a careful revision of many specimens I cannot agree with the view of Hooker and Baker that *P. ornithopteris* belongs as a variety to *P. tartarea*. It is constantly separated by the colour of the stipe (or its upper part) and the rhachis of that species. The type specimens of *G. ornithopteris* and *G. guianensis* do not differ in any way in this respect. The light-coloured stipes and rhachises are here opaque. Klotzsch describes *l. c. G. guianensis* as «rhachi universali stipiteque obtuse quadrangulari, e gilvo-fuscescente», and *G. ornithopteris* «rhachibus pallide-gilvis, stipite basi fusco, superne pallide-gilvo», but there is no difference in the colour of the type spe-

cimens, only the stipes of *G. ornithopteris* are more angular than the more slender stipe of *G. guianensis*. The «pinnae remotae, paucae», emphasised by Klotzsch, are of a problematic value. Both species of Klotzsch differ according to the type specimens as well as their description only in their pinnales, but are not even by this feature sharply separated as transitional forms occur. Klotzsch calls the fronds of *G. guianensis* «subcoriaceae» and those of *G. ornithopteris* «coriaceae» but the difference is often only slight. The extremes, it is true, have the appearance of quite distinct species but the numerous forms of this wide-spread, until now mostly overlooked or wrongly named species make it quite impossible to draw a line of demarcation between the two supposed species. If we should follow Klotzsch it would be necessary to split this species into four or five of very doubtful value. Baker (*l. c.*, p. 385) regards *G. ornithopteris* as a variety of *G. tartarea* and *G. guianensis* as an intermediate between this variety and the true *tartarea* but he overlooked the difference in the colour of the rhachis and the stipes. C. Christensen puts *G. guianensis* as a synonym under *Ceropteris tartarea*. G. Hieronymus restitutes in *Plantae Stübeliana* in *Hedwigia*, XLVIII, p. 221-223 (1909) *G. guianensis* as a distinct species under the name *Ceropteris guianensis* Hieron. and writes as follows : «Species a *C. tartarea* (Cav.) Link optime differt pinnis primi ordinis inferioribus saepe oppositis vel suboppositis, paribus pro conditione remotis, rhachibus et petioli tenuioribus, rhachibus ochraceis vel subferrugineo-ochraceis, petioli solum basi fuscescentibus». I may mention that the «pinnae saepe oppositae vel suboppositae» are absolutely no reliable distinguishing feature from *P. tartarea*. Also the «rhaches et petioli tenuiores» are of problematic significance. This character belongs to Schomburgh's type specimen but some other specimens from Colombia, otherwise very typical, have not so slender stipes and the form from Perú (Pearce 504) has a subrobust rhachis. Generally speaking, the rhachises and stipes of *Pityrogramma guianensis* are more slender than those of *P. tartarea* but this character is not constant. Hieronymus is quite right in supposing that *G. ornithopteris* does not specifically differ from *G. guianensis* which

opinion he expresses in the following words : « *G. ornithopteris* Klotzsch fortasse nihil nisi varietas *G. guianensis* est quae statuta minore, pinnarum paribus magis approximatis pinnulis et segmentis pinnarum secundi ordinis margine valde revolutis differt, fortasse forma locis aridis enata ».

Charles University, Praha-Czechoslovakia.