

## PSEUDOHYDROSME GABUNENSIS ENGL.

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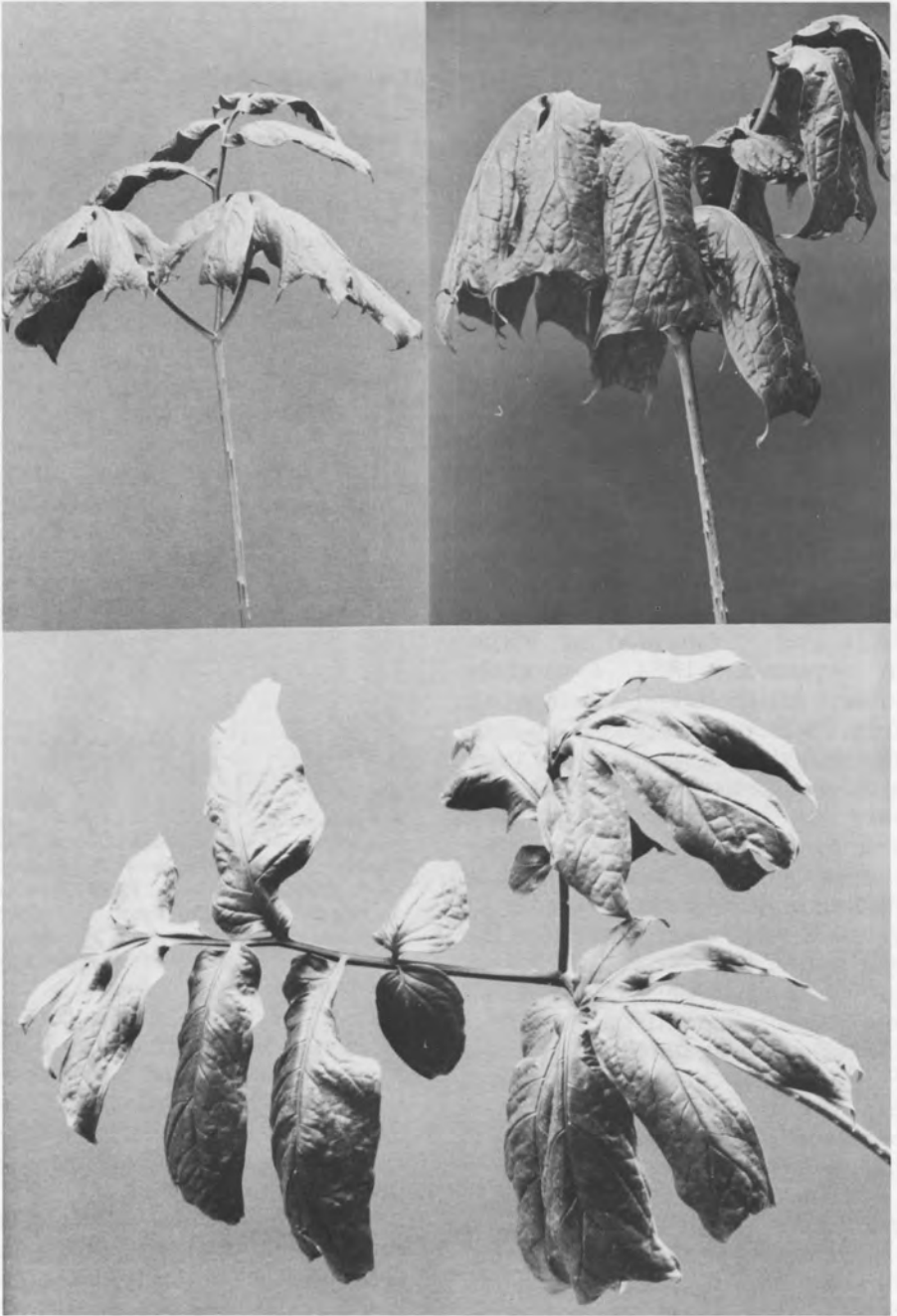
The genus *Pseudohydrosme* was described by Engler (1892) from incomplete material with two species native in Gabon: *P. gabunensis* Engl. and *P. buettneri* Engl. During my collecting trip to Gabon in the year 1973, I especially looked for these species and I scheduled my visit to coincide with the flowering time of the two aroids, but they are so rare that I only found two specimens of *P. gabunensis*. Although there is still much undisturbed forest in Gabon; these species have not been collected since the original types: *P. gabunensis* by H. Soyaux on 13 October 1881 and *P. buettneri* by Bütnner in September 1884. I carefully looked for them and asked people from the Forest School at Cap Esté-riar, but they never have seen these aroids, a remarkable fact because they are big and very attractive and cannot be overlooked. Nevertheless, all my efforts resulted in finding only *P. gabunensis*, after 92 years. It was flowering without the leaf during my visit and the tubers brought back to Germany produced leaves later in cultivation. Now I can give nearly full description of *P. gabunensis*, but unfortunately I can say nothing more about *P. buettneri* than Engler (1891, 1911) has already published.

When I saw the flowering *P. gabunensis*, it was clear to me that the genus *Pseudohydrosme* is very closely related to *Anchomanes* Schott, which has a long peduncled inflorescence and an unilocular ovary. *P. gabunensis* has a bilocular ovary and a very short peduncle



Figure 1: *Pseudohydrosme gabunensis* Engl. Holotype Soyaux 299 (B). The name on the left and right label is in Engler's handwriting. Courtesy of Botanischer Garten und Botanischer Museum Berlin-Dahlem.

with a very short spadix too; also its spathe is of different structure. *P. gabunensis* and *Anchomanes* have a spadix without any sterile flowers (only *P. buettneri* has an appendix with staminodes), a spiny peduncle and petiole as well as nearly identical leaves; in addition, their pollen grains are of the same type. Both have the typical divided leaf blades of the *Dracontium* type, but the apices of the lobes or leaflets are truncate and end in two side tips.



Figures 2 , 3 and 4: *Pseudohydrosme gabunensis*, Leaf.



Figure 5: *Pseudohydrosme gabunensis* Engl. Inflorescence before anthesis in its natural habitat near Libreville, Station forêstier Sibang (Bogner 665).

Figure 6: *Pseudohydrosme gabunensis* Engl. Flowering specimen during anthesis (Bogner 664).

The type specimen of *P. gabunensis* lacks the upper part of the spathe and is therefore incomplete. It is clear to me now why the type specimen has an incomplete spathe. The spathe is fornicate, but the lower involute funnel-shaped part of the spathe is of a very thick structure, whereas the upper part is very thin. It can be expected that the upper part dries up after anthesis and that the lower thick part is persistent during fructification, but the latter I have not observed. The leaf was hitherto unknown and now I can give a more complete description, although the fruits have not been observed yet.

*Pseudohydrosme gabunensis* Engl., Bot. Jahrb. 15: 455, t. 15/16 (1892); in Engler and Prantl, Natürl.

Pflanzenfam. Nachtr. zu II-IV, 59 (1897); N. E. Brown, in Dyer, Flora trop. Africa 7: 161 (1901); Engler in Das Pflanzenreich IV. 23 C (Heft 48): 48, f. 19 A-G (1911); illustr. in Aroideana 2 (4): cover photo (1979). - *P. gabonensis* Dur. et Schinz, Consp. Flora Afr. 5: 475 (1895).

Tuber 9-12 cm in diameter, light brown and somewhat ringletted, partly with buds; roots 5-8 mm thick, brownish yellow. Cataphylls 5-6, the first ones the shortest, more or less triangular, membranaceous, soon drying, 1.5-2.9 cm long, at the base (1) 2-2.5 cm wide, slightly reddish and a little spotted, the veins stronger colored. Petiole 1-1.3 m long, below 1-1.4 cm in diameter, spiny, spotted (more or less



Figure 7: *Pseudohydrosme gabunensis* Engl. Inflorescence during anthesis in its natural habitat near Libreville, Station for stier Sibang (Bogner 664).



Figure 8: *Pseudohydrosme gabunensis* Engl. Flowering specimen after anthesis (Bogner 664.)

dark green olive and spotted with small yellowish white points); spines 1-2 mm long. Leaf blade divided in three main parts, each segment 30-35 cm long; rachis more or less reddish, round below and flattened on upper side, its margins prominent; venation reticulate, veins underneath reddish, otherwise dark green; leaflets (4) 8-23 cm long and (2) 3-7 (11) cm wide, upper surface dark green with a blue grey touch, more or less shiny, apex truncate ending in two (0.5) 1-3 cm long acuminate to caudate side tips; the lowest leaflets ovate and cuspidate, 4.5-8 cm long and 2-5.5 cm wide. Peduncle short, yellowish, (3) 5-9 cm long and 1-1.5 cm in diameter, spiny, green or light purplish with greenish white roundish to elongate spots, spines 1-2 mm long and greenish white; cataphylls together with the inflorescence of the same size and color as those with the leaf. Spathe (30) 40-55 cm long, below for a length of 20-25 cm involute to a tube, fleshy and to 5 mm thick, above arched over and thin, more or less membranaceous, broad-pointed, margin slightly undulate; spathe outside greenish yellow, above getting a slight purplish touch; veins very prominent; inside below in the center deep purple, in the middle going over in a purple especially the veins, above greenish yellow (mostly the margin parts). Spadix more or less sessile, cylindrical, blunt, fertile to its apex, (6) 9-12.5 cm long and (1.5) 2-2.5 cm in diameter; female part 2-3.5 (4) cm long; male part (3.5) 6-8.5 cm long. Pistil ca. 5 mm high; ovary globular to ellipsoid, somewhat squeezed, 2-3 mm in diameter, yellowish-whitish, bilocular, seldom trilocular, with one ovule in each locule, fixed at the base of the



Figure 9: *Pseudohydrosme gabunensis* Engl. Spadix, spathe partly opened (Bogner 664).

middle septum and ascending; ovule anatropous, ellipsoid, ca. 0.7 mm long and ca. 0.4 mm in diameter, funiculus ca. 0.5 mm long; style short, 1-1.5 mm long and ca. 1.5 mm in diameter, of the same color as the ovary; stigma bilobed, seldom trilobed, papillose, depressed in the center, ca. 2 mm in diameter, reddish brown to purple. Stamens free, ca. 4 mm high and rectangular in cross section, ca. 1.8 (2) x 1.2 mm, slightly angled, yellowish and at its top purple; thecae oblong, ca. 3 mm long and opening by an apical pore; connective capitate and rising above the thecae; pollen yellow and exuded in strings, pollen grain ellipsoid, inaperturate, 100-120 $\mu$  x 70-100 $\mu$ , exine slightly scabrous. Fruits unknown.



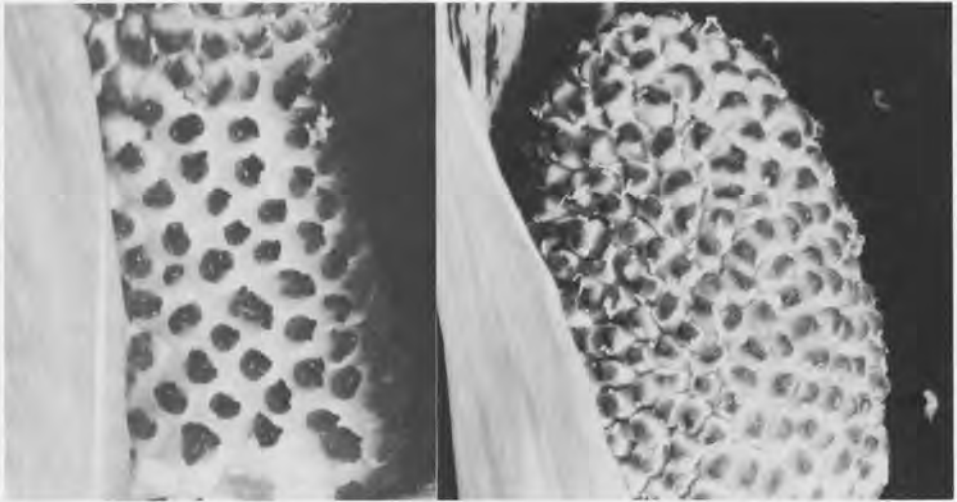


Figure 10: *Pseudohydrosme gabunensis* Engl. Lower part of the spadix with female flowers (Bogner 664).

Figure 11: *Pseudohydrosme gabunensis* Engl. Upper part of the spadix with male flowers, pollen grains exuded in strings (Bogner 664).

Distribution: Gabon, Mundagebiet, Sibange-Farm, Wald am Maveilufer; unmittelbar aus Knolle in der Erde; am Maveli, 13. Okt. 1881, *Soyaux 299* (B). Sibang, hinter der Station forêstier; wächst im sandigen Lehmboden im Regenwald, sehr schattig, ca. 20 m, 29. Oktober 1973, *Bogner 664* (K, M, US).

Ecology: *Pseudohydrosme gabunensis* was found growing in the humus layer of a sandy loam in deep shade. Other plants found together are *Anchomanes nigritianus* Rendle, a very rare species first found in South Nigeria, of which I collected one specimen only at a distance of less than 100 m from the locality of *P. gabunensis*. Also very common were *Anchomanes difformis* (Bl.) Engl. and *Amorphophallus maculatus* N. E. Br., which grew nearby. *Pseudohydrosme gabunensis* flowers before the single leaf appears and I found it in flow-

er in October, whereas *Anchomanes* normally flowers together with the leaf, but sometimes it can also flower just before the leaf appears or together with the young leaf.

Pollination: I collected as pollinators two different flies and two different beetles of the following families:

Diptera: Choridae, Sphaeroceridae and Coleoptera: Scaphidiidae, Staphylinidae. They are normally found on rotten organic matter.

#### Literature Cited

- Engler A. 1892. Botanische Jahrbücher 15: 447-466.
- Engler, A. 1911. Araceae-Lasioideae in A. Engler, Das Pflanzenreich IV, 23C (Heft 48) 1-130. Leipzig: W. Engelmann.



Figure 12: *Anchomanes difformis* (Bl.) Engl. Gabon, near Cap Estérias (Bogner 604).

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Figure 13: *Anchomanes nigritianus* Rendle. Flower specimen (Bogner 662).