On a new species of Furcraea Vent. from Nicaragua.

By

Johs. Boye Petersen.

(With Plate IV.)

In the year 1848 an Agave-like plant was introduced into the Botanical Garden of Copenhagen by A. S. Ørsted, who had collected it in Nicaragua. During the time the plant was cultivated in the hot-house as *Agave* sp., it did not flower until 1921 and therefore a determination was impossible. Prof. W. Trelease, paying a visit to Copenhagen in 1912, critically revised the collection of *Agave* in the Botanical Garden and also saw the specimen mentioned. He was, however, unable to name the sterile plant, but supposed that it belonged to an undescribed species.

In the year 1921 it was observed that the specimen was about to flower and the development of the inflorescence was, of course, followed with interest. In December a scape with a panicle in all about 3 m high shot up. When trying to determine the flowering specimen I quickly found that it did not belong to the genus *Agave* but to *Furcraea* Vent., and moreover I discovered that it could not rightly be referred to any described species af *Furcraea* judging from the material, to which I have had access, viz. literature, living specimens in our hot-houses, dried specimens and specimens in alcohol in the museum.

Unfortunately most descriptions of the species of *Furcraea* are more or less incomplete, and some species are not figured. It must be regretted that Drummond, who in 1907 wrote on the genus, has not given new descriptions of all species adopted by him, as he certainly has had an unusually good material at his disposal, although, as he says himself, it was deficient as to certain points.

Notwithstanding these insufficient descriptions I feel convinced that our plant represents an undescribed species. It is one of the smaller species of the genus, charcterised by its very compressed bulbils, small flowers and geminate spines in the margins of the leaves as in *F. geminispina.* I therefore propose to describe it as a new species and name it:

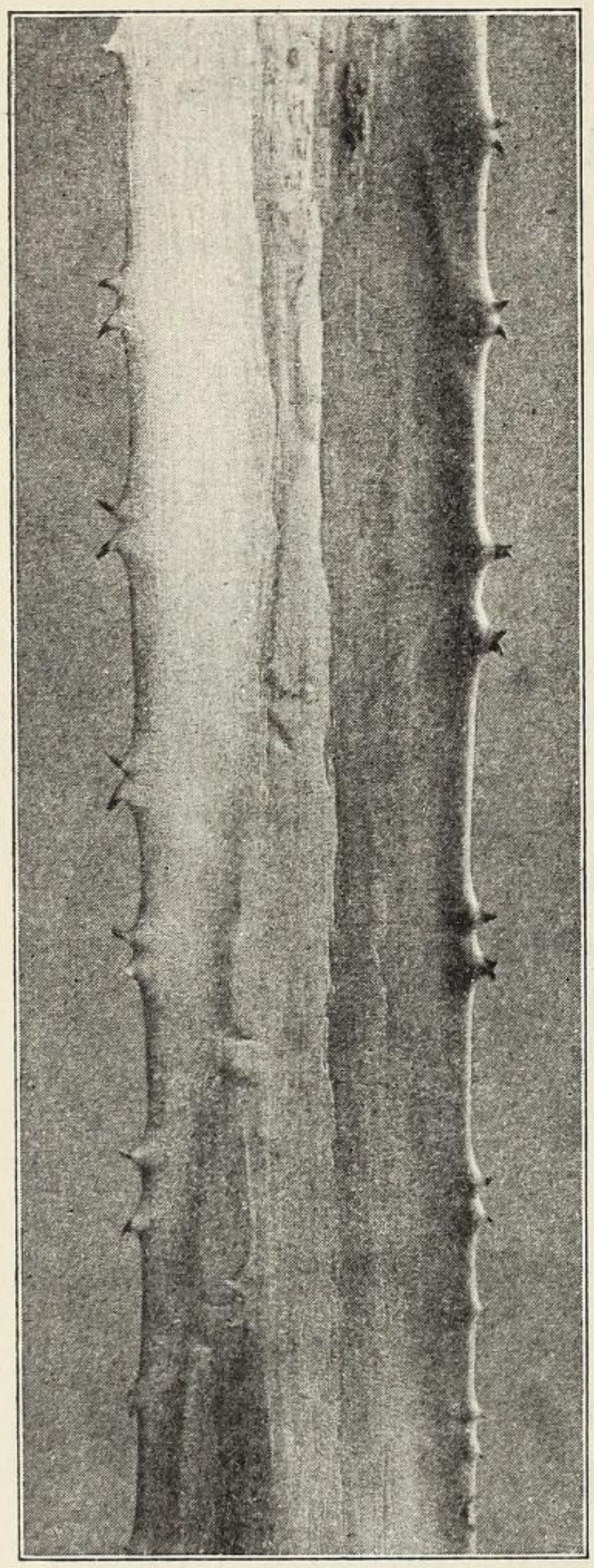


Fig. 1. Part of the lower portion of a leaf showing marginal characters. Nat. size.

Furcraea stratiotes Boye P. n. sp.

F. caule brevissimo, foliis circiter 50 dense rosulatis, 35—53 cm longis, 3,5—5 cm latis, utrinque glabris lævibusque, margine spinis rigidis geminis instructis; scapo cum panicula 2,8 m alto, floribus pendulis albidis pedicellatis parvis, 22 mm longis, bulbillis numerosis valde compressis; fructu ignoto.

Specimen in Nicaragua lectum 1848 (A. S. Ørsted) et in hortum botanicum Hauniense introductum et cultum. Fl. 1921.

Stem lacking or very short; leaves (about 50) in a rosette, with a base 5—6 cm broad, 3 cm thick; above the base contracted to 2,5—3 cm, linear-lanceolate, 35—53 cm long, 3,5—5 cm broad at the middle, long-acuminate, the apex with a small whitish mucro, not a pungent spine, both surfaces smooth and glabrous, margin with double brown horny spines, not more than 2—3 mm long, with a distance of 1—3 cm between two pairs (Fig. 1); simple spines are to be found near the tip of the leaf only.

Scape 2 m high, at the base 2,5 cm, at the middle 2 cm, and just below the panicle 1,3 cm broad, finely furrowed.

The lower bracts of the scape 2 cm broad, 6 cm long, obtuse, their margins minutely denticulate (Pl. IV, fig. 2), the upper ones smaller, acuminate, entire.

Panicle (Pl. IV, figs. 1, 3) about 80 cm long, thrice branched;

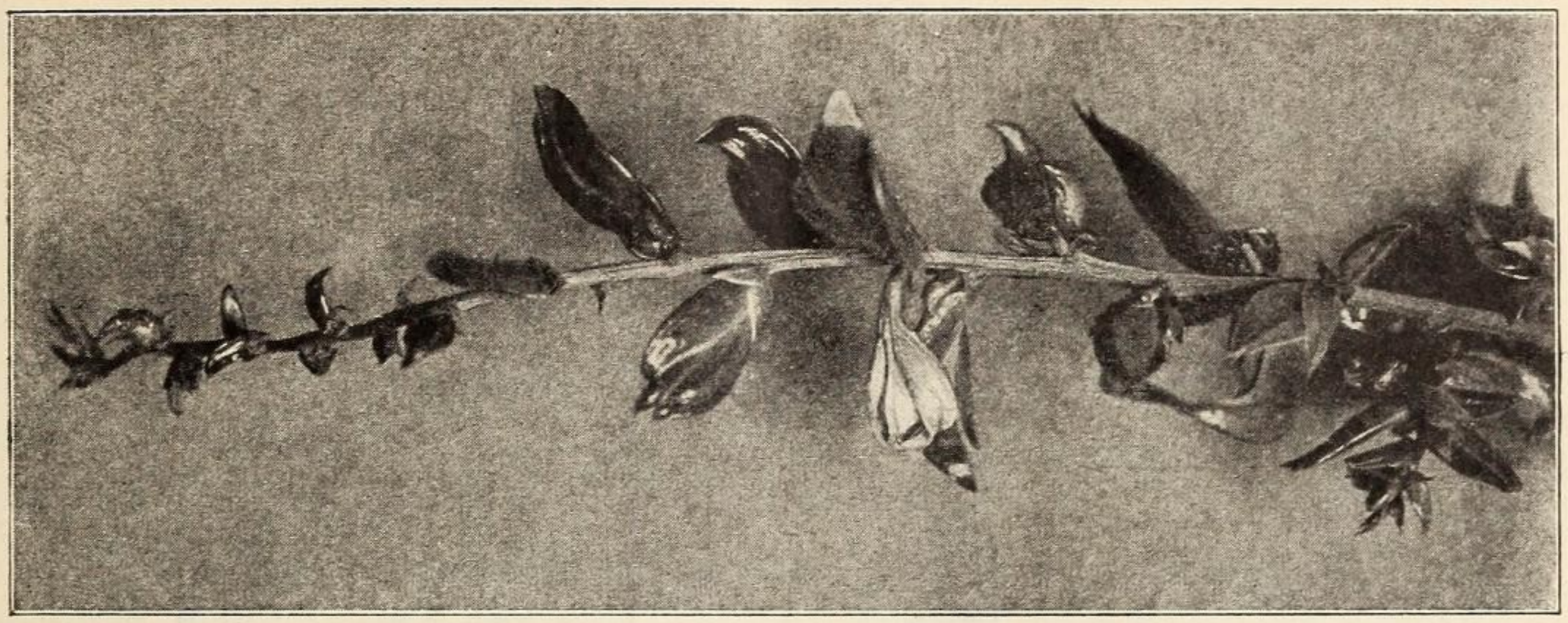
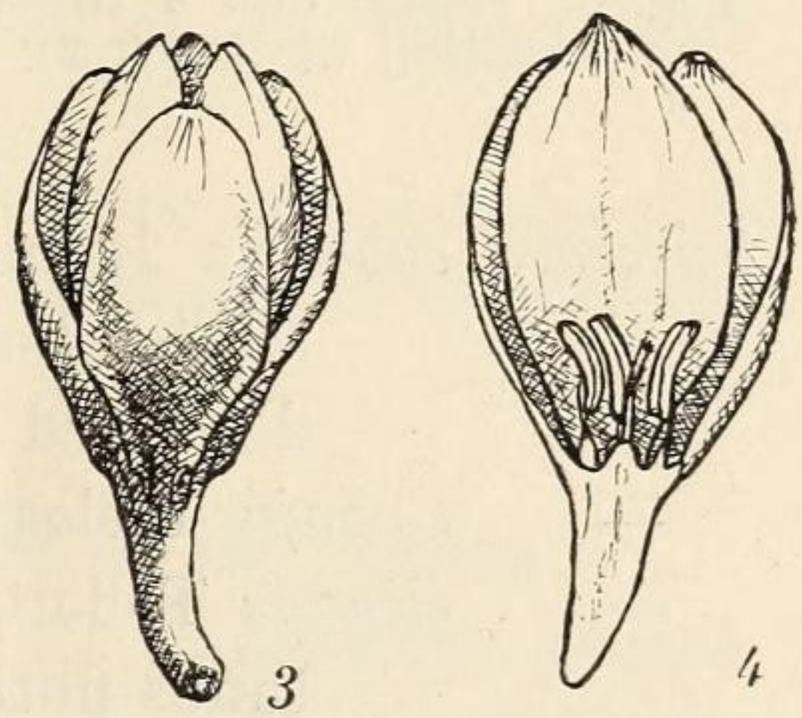


Fig. 2. Branch of the panicle with numerous bulbils and a flower ($\times$ $^2/_3$).

the single branches with small brown membranous bracts. Flowers solitary, with 1—2 bulbils (Fig. 2). These are of very varying sizes, the largest 3,5 cm long, 1,5 cm broad, very compressed, with 3—5 visible leaves, not densely united like a bulb (Fig. 6, 7). Bulbils also are developed in the axils of the upper bracts of the scape below the inflorescence. The flowers on pedicels $^1/_2$—1 cm long, cernuous, with 6 cream-coloured perianth-segments and of a faint scent. The outer segments 1,4 cm long, 0,6 cm broad, the inner a little broader (Fig. 3, 4). Stamens much shorter than the perianth-segments. Filaments 2,5 mm long, at the base 1 mm thick, upwards subulate. Anthers 4 mm long, 1,5 mm thick, versatile (Fig. 5). Ovary 8 mm long, 2 mm thick, its transverse section obtuse triangular. Style 5 mm long, thickened at the base. The flowers all barren; the fruit therefore unknown.



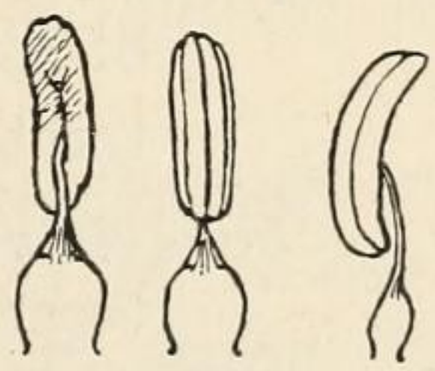


Fig. 3. Flower. ($\times 1^1/_2$).
Fig. 4. Longitudinal section of a flower ($\times$ $1^1/_2$).
Fig. 5. Stamens; back-view, front-view, and side-view ($\times$ 3). K. Wiinstedt del.

One of the most striking peculiarities of the plant in question, I should think, is the very compressed bulbils, similar to the flower-buds with the two green bracts of *Stratiotes aloides* (hence the name of the species). I tried therefore, to compare these bulbils with those of other species of *Furcraea* allied to our species, but I found that in most descriptions given the bulbils were not mentioned at all. Only

in the descriptions and illustrations of the following species I find some information as to the shape of the bulbils.

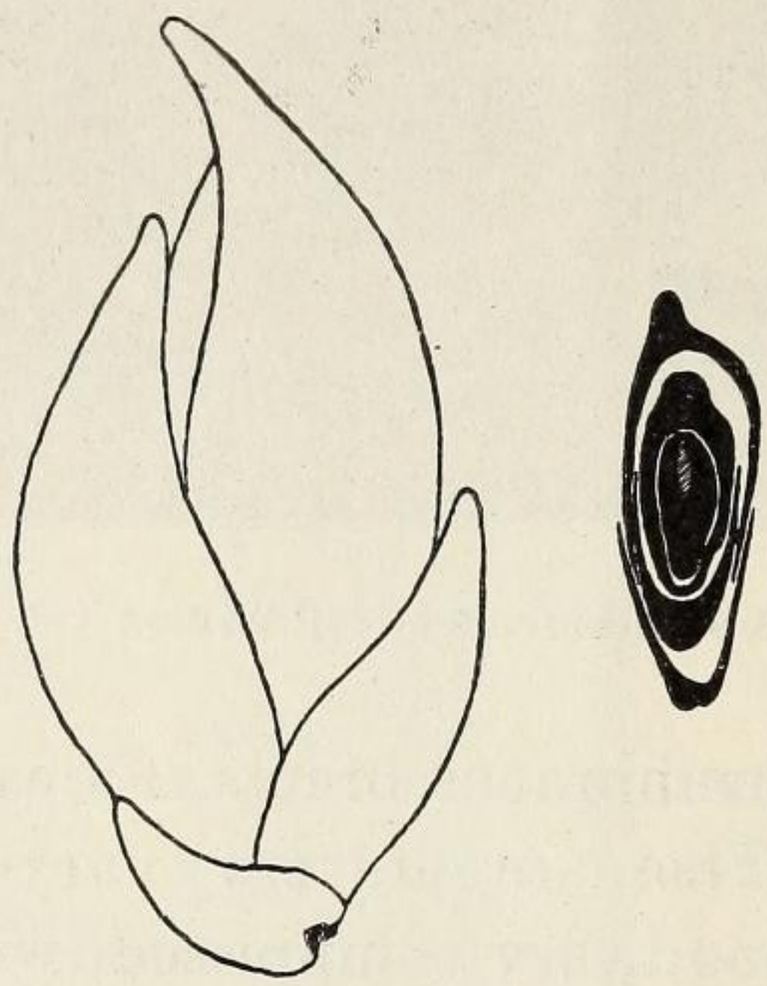


Fig. 6. Bulbil and a transverse section of it. (× 2).

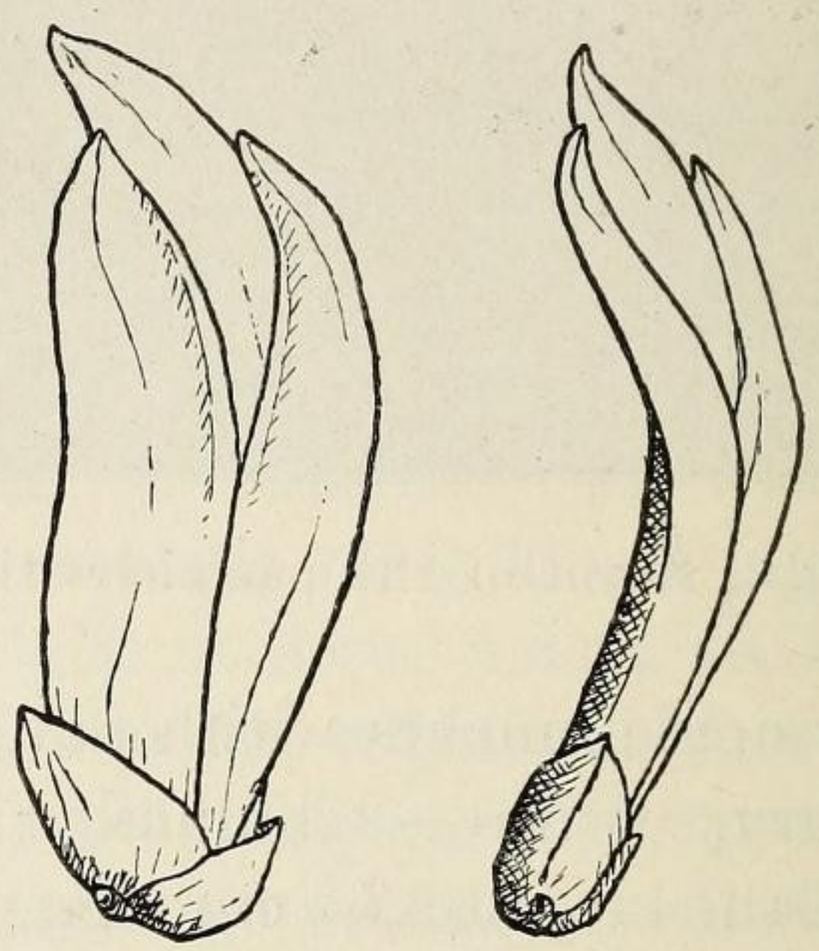


Fig. 7. Front and side-view of bulbil. (× 1½). K. Wiinstedt del.

Furcraea cubensis Jacquin 1763 p. 100, tab. 175, fig. 28 shows a terete, bulb-like bulbil, and in the text it is also described in this manner.

— *Cabuja* Trelease 1910 Taf. 37. Terete, bulb-like bulbils.

— *elegans* Todaro. In the description in Hortus Panormitanus nothing is said about the shape of the bulbils.

— *gigantea* Vent. Some material in the Botanical Museum of Copenhagen, determined by W. Trelease, shows terete, bulb-like bulbils.

— *macrophylla* Hook. Trelease 1910 Taf. 37. The bulbils terete, bulb-like.

— *Selloa* K. Koch. Bot. Mag. tab. 6148 distinct terete bulbils.

— *tuberosa* Ait. Some material in the Botanical Museum of Copenhagen (det. W. Trelease) shows terete, bulb-like bulbils. Concerning *F. lipsiensis* (fide Drummond = *F. tuberosa* Ait.) Jacobi 1869 p. 169 says, that the bulbils resembles "Gartenzwiebeln".

— *undulata* Jacobi. To judge from Bot. Mag. 6160 and 7250, these both represent the same species (fide Drummond), the bulbils are terete also in this species.

Only in *F. stricta* Jacobi 1869 p. 171—74 the bulbils are mentioned in the following words: . . . "sehr zahlreiche ogivale, theils seitlich etwas plattgedrückte, theils unscheinbar stumpflich dreikantige Bulben".

I think it probable that the bulbils of all species of *Furcraea* hitherto known, *F. stricta* only excepted, are terete, bulb-like, as possible deviations from that shape would certainly have been noticed by the authors.

F. stricta resembles in many points *F. stratiotes*, though distinct differences are present. *F. stricta* is mentioned by Drummond (1907 p. 57) as being closely related to or even identical with *F. elegans* Todaro or *F. macrophylla* Hook. I am of opinion that Drummond is wrong here. I contend that *F. stricta* ought doubtlessly to be referred to Drummond's group A. Minores together with *F. undulata.* Unfortunately it will certainly be impossible ever completely to elucidate *F. stricta* (cfr. Drummond 1907 p. 57).

I think that the species allied to *F. stratiotes* may be grouped thus when employing Drummond's system as shown in the following key: Sect. II. Spinosae.

A. Minores.

a. Bulbils terete, 15—30 leaves in the rosette *F. undulata* Jacobi (*F. albispina* Baker?)

b. Bulbils more or less compressed, 30—50 leaves in the rosette.

1. Bulbils slightly compressed, leaves rough below. Flowers large, about 30 leaves in the rosette (fide Baker 1888 p. 201) ..... *F. stricta* Jacobi
2. Bulbils very compressed, leaves smooth on both surfaces, flowers minute, about 50 leaves in the rosette ..... *F. stratiotes* n. sp.

The terete, bulb-like bulbils is certainly a characteristic common to all the species of the group B. Giganteae. Of the species of this group *F. cubensis* probably approaches nearest to *F. stratiotes.* *F. cubensis* however distinctly differs mainly by 1) the terete, bulb-like bulbils, 2) the flowers being twice as large, 3) the broader leaves and 4) the simple spines in the margin of the leaves.

The Botanical Museum of the University. Copenhagen. Febr. 1921.

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Explanation of the plate IV.

Fig. 1. *Furcraea stratiotes* n. sp. showing the habit of the entire plant.
— 2. — — — , the rosette with double-spined leaves, and the base of the scape with the lowest denticulate bract.
— 3. — — — , the panicle with numerous compressed bulbils and some flowers.

En ny Art af Furcraea fra Nicaragua.

Af

Johs. Boye Petersen.

I Aaret 1848 rejste daværende Mag. A. S. Ørsted i Mellemamerika for at gøre botaniske Indsamlinger. Han hjemsendte store Mængder af tørrede Planter, der nu er noget af det værdifuldeste, vort botaniske Museum rummer. Tillige samlede han Frø og levende Planter til den botaniske Have, der den Gang laa ved Charlottenborg. De fleste af disse Planter er selvfølgelig forlængst forsvundne igen; men enkelte af dem er bevaret op til Nutiden og flyttedes til den nuværende botaniske Have i 1874. For nogle Aar siden blomstrede her for første Gang *Agave guatemalensis*, og i Slutningen af 1921 kom endnu en Plante i Blomst, som stod under Navnet *Agave* sp. og stammede fra Nicaragua. Det viste sig, at denne snart 74 Aar gamle Plante i Virkeligheden ikke hørte til Slægten Agave, men til

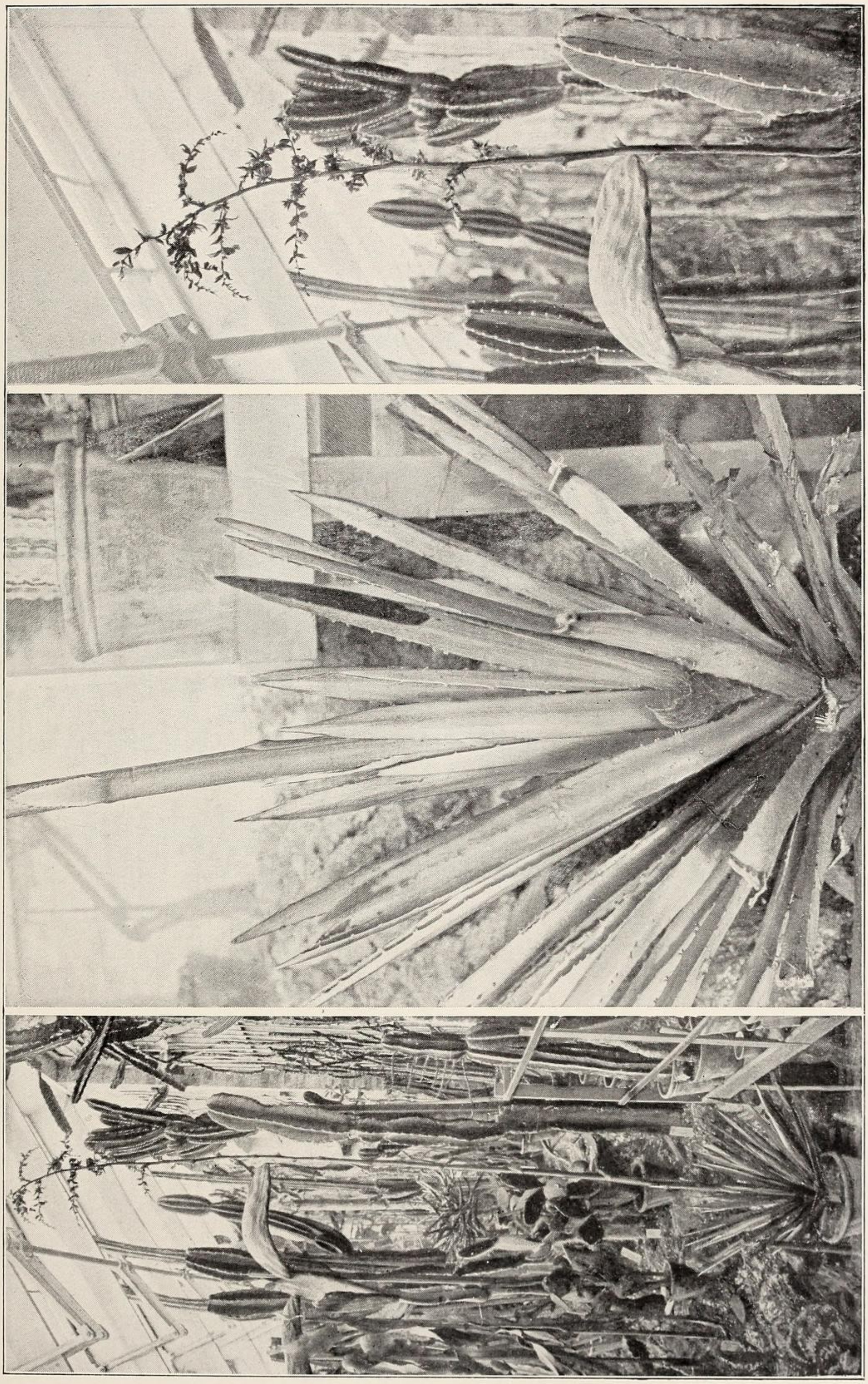

Fig. 3.

Fig. 2.

Fig. 1.

Naboslægten Furcraea; men den kunde ikke henføres til nogen af de kendte Arter af denne Slægt og beskrives derfor som en ny Art under Navnet *Furcraea stratiotes* n. sp. Den har en Roset af stive Blade, der paa Randen, er besatte med ejendommelige dobbelte Torne, en 2 m høj Blomsterstængel der bærer en stærkt grenet Blomsterstand. Blomsterne, der er duftende og med nærmest flødefarvet Bloster, visnede alle, saa at den ikke satte Frugt; men i Blomsterstanden og langt ned ad Stængelen fremkom i Bladhjørnerne en Mængde stærkt sammentrykte Yngleknopper. Disse minder noget om Blomsterknoppen hos Krebseklo (*Stratiotes aloides*), og herfra stammer Plantens Navn. Ved Hjælp af disse Yngleknopper kan det nu lykkes at bevare Arten og faa den udbredt i de botaniske Haver. Selve den gamle Plante derimod gaar ud efter Blomstringen. Nær beslægtet med *F. stratiotes* er *F. cubensis* (Jacq.), der hører hjemme paa Cuba, men dyrkes flere Steder i Vestindien, idet man bruger dens sejge Bladtaver som Tekstilmateriale.