

PROCEEDINGS
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XYRIDACEAE FROM BRAZIL—II¹

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Since our first paper in this series we have begun preparation of a comprehensive study of all the Xyridaceae of Brazil, but as completion is still distant it seems well to record certain novelties and discoveries now. Noting the strongly contrasting specific characters of the epidermis shown in a few cases by Malme in his monographic work,² we have made a concerted effort to examine and illustrate sections wherever possible. In assessing the value of cellular characters we have been greatly aided by Sherwin Carlquist, whose generic studies in the Xyridaceae³ are a model which we would sometime like to attain. Abbreviations for herbaria are those of the fourth edition of the "Index Herbariorum," of Lanjouw and Stafleu.

Xyris (Xyris) brevifolia Michx. Fl. Bor. Am. 1:23. 1803; Malme, Arkiv Bot. 22A, no. 15:3. 1929.

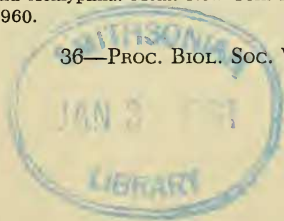
Rio de Janeiro: Without further locality, St-Hilaire Catal. B² no. 121 (P). Pontal Beach, Araial do Cabo, Município de Cabo Frio, 3 June 1953, F. Segadas Vianna et al, no. Restinga—I 440 (R, US).

Malme indicated that he was quite dubious that this native species of southeastern United States could also be native in Brazil, and with the information then available his was a logical conclusion. However, with the discovery of new material it appears more likely that the species is native in Brazil, because Cabo Frio is remote from the centers where introductions would be likely. Also such parallel cases as *Arenaria*

¹ The present study was based in part on material collected by the senior author under a grant from the National Science Foundation. Number one of this series was in the Jour. Washington Acad. Sci., 44(10): 311-313, 1 fig. October 1954.

² Malme, G. O. A.:N. *Xyris* L., Untergattung *Nematopus* (Seubert). Entwurf einer Gliederung. Arkiv Bot. 13(3): 1-103, Figs. 1-5. 19 August 1913.

³ Carlquist, Sherwin. Anatomy of Guayana Xyridaceae: *Abolboda*, *Orectanthe*, and *Achlyphila*. Mem. New York Bot. Gard. 10(2): 65-117, Figs. 1-129. 30 April 1960.



groenlandica (Retz) Spreng.,⁴ *Hypericum gentianoides* (L.) B.S.P.,⁵ and *Proserpinaca palustris* L.⁶ add strength to the belief that this is a natural pre-Columbian distribution. Saint-Hilaire gave no locality, but he was at Cabo Frio; thus the two collections, although separated by more than a century, may be from the same locality.

***Xyris (Nematopus) archeri* Smith and Downs, new species**

Fig. 1

Caespitosa, subcaulescens sed bulbosa; rhizomate brevi; radicibus tenuibus; foliis manifeste distichis, ad 10 cm longis, ensiformi-linearibus, glabris vel margine minutissime ciliatis; vaginis ca. 25 mm longis, minutissime rugosis, hyalino-marginatis, superne quam laminis paulo angustioribus, apice ligula acuta aucta, basi dilatatis et atro-castaneis, laevibus; laminis ad 1.5 mm latis, apice asymmetrice acutis, nervatis, nervis submarginalibus incrassatis; cuticula utrinque tenuissima, vix manifesta; cellulis epidermalibus in sectione transversa suborbicularibus, 20–25 μ diametro, parietibus exterioribus 3–10 μ crassis, alteris distincte tenuioribus, cellularum parte intima persistente; scapis terminalibus et lateralibus, vix distincte tortis, gracillimis, 16–31 cm altis, teretibus, laevibus vel obscure costatis; vagina scaporum distincte laminata, quam foliis paulo brevioribus; spica ovoidea vel ellipsoidea dein floribus patentibus subglobosa, 8–9 mm longa, ca. 10-flora; bracteis arcte imbricatis, infimis valde reductis, obovatis, uninerviis, florigeris late ellipticis, apice late rotundatis cuspidatisque, quam sepalis paulo brevioribus, integris, late convexis, glabris, opacis, minute rugosis, atro-brunneis, area dorsali carentibus; sepalis lateralibus ca. $\frac{1}{2}$ connatis, inaequaliter lateralibus, lanceolatis, acutis, 6 mm longis, carina basi glabra, alibi dense ferrugineo-pilosa; limbo petalorum obovato, 4.5 mm longo; antheris oblongis, 1.5–2 mm longis; staminodiis penicillatis; ovario ellipsoideo; placentis basalibus; seminibus obovoideis, apiculatis.

Type in the U. S. National Herbarium, No. 2,121,775, collected in campo, Serra do Cipó at kilometer 119, Município de Santa Luzia, State of Minas Gerais, Brazil, 6 August 1936, by W. A. Archer and Mello Barreto (No. 4977).

Paratype: BRAZIL: Minas Gerais: Município Conceição: Campo, Estrada de Conceição, 7 August 1933, Mello Barreto 4353 (US).

In its general habit, *Xyris archeri* appears to be a very slender variety of *X. obtusiuscula* Alb. Nilsson, and it also resembles it in its floral bracts and connate sepals. However, the essentially eciliate leaves and exerted sepals distinguish *X. archeri* sufficiently to warrant specific designation.

⁴ Smith, L. B., and Downs, R. J. Resumo preliminar das Cariofiláceas de Santa Catarina. Sellowia, No. 12: 123. 1960.

⁵ Smith, L. B. Notes on South American Phanerogams—II. Jour. Washington Acad. Sci. 48: 313. 1958.

⁶ Reitz, P. R. As Halorrhagaceae de Santa Catarina. Sellowia, No. 6: 239. 1954.

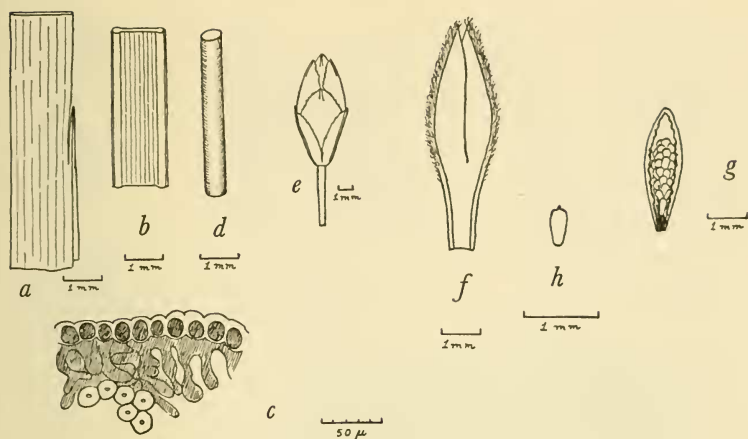


FIG. 1

Xyris (Nematopus?) egleri Smith and Downs, new species

Fig. 2

Caespitosa, acaulis; radicibus tenuibus; foliis spiraliter ordinatis, vix manifeste distichis, ensiformi-linearibus, ad 16 cm longis, omnino glabris; vaginis ca. tertiam partem folii occupantibus, superne quam laminis haud latioribus, eligulatis, basi paulo dilatatis et haud vel vix atrioribus; laminis ad 4 mm latis, apice asymmetrico lateque acutis, viridibus, ex sicco plus minusve nervatis, nervis submarginalibus incrassatis; cuticula utrinque tenuissima, vix manifesta; cellulis epidermalibus in sectione transversa fere aequalibus sed marginalibus paulo prominentibus, subquadratis, 50–60 μ altis, parietibus exterioribus 5–10 μ crassis, alteris multo tenuioribus, cellularum parte intima persistente; scapis terminalibus, spiraliter tortis, ad 56 cm altis, superne bialatis, 2–2.5 mm latis, minutissime punctulatis; vagina scaporum folias subaequante, in apiculum foliaceum excurrente, viridi; spica permultiflora, semiglobosa, 12–14 mm diametro; bracteis patentibus, basilaribus inflorescentiam involucrentibus, duabus infimis linearibus, reliquis aequantibus vel paulo superantibus, fertilibus anguste obovatis, acutis, apice carinatis et late tenuiterque brunneo-marginatis, sepala multo superantibus, area dorsali carentibus, glabris; sepalis lateralibus liberis, subaequilatis, ellipticis, obtusis, basi attenuatis, ala carinali angusta, ad apicem versus minute ciliata; limbo petalorum obovato, 3 mm longo; antheris oblongis, ca. 1 mm longis; staminodiis bibrachiatis, penicillatis; in ovaris perjuvenilibus placentis haud exacte visis.

Type in the U. S. National Herbarium, No. 2,283,916, collected in swampy campo, Missão Velha, Rio Cururú, Alto Tapajós, State of Pará, Brazil, 19 July 1959, by W. A. Egler (No. 953) and Raimundo. Isotype in the Museu Paraense "Emílio Goeldi" (No. 23.766).

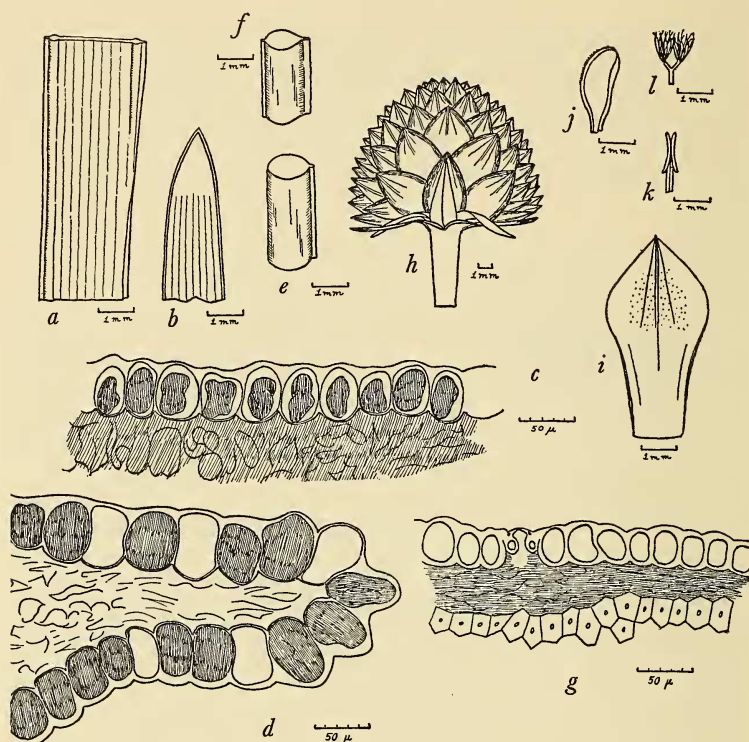


FIG. 2

At first glance this plant appears to be a variety of *Xyris involucrata* Nees, with a short involucre and undoubtedly it is a close relative. However, the glabrous leaves and scape and the markedly different floral bracts (cf Idrobo, *Caldasia*, 6(29): 212, Fig. 12e, 1954) indicate that *Xyris egleri* is a distinct species.

***Xyris (Nematopus) hatschbachii* Smith and Downs, new species**

Fig. 3

Subbulbosa; radicibus tenuibus; foliis spiraliter ordinatis, vix manifeste distichis, ensiformi-linearibus, ad 20 cm longis, glabris; vaginis 4–8 cm longis, superne quam laminis haud latioribus, eligulatis, basi valde dilatatis et aterrimo-castaneis; laminis spiraliter tortis, haud 1.5 mm latis, acuminatis, viridibus, transverse rugulosis, ex sicco plus minusve nervatis, nervis submarginalibus haud incrassatis; cuticula utrinque tenuissima, vix manifesta; cellulis epidermalibus lateralibus in sectione transversa subaequalibus, suborbicularibus, 35–40 μ altis, parietibus exterioribus 10–15 μ crassis, alteris multo tenuioribus, cellularum parte

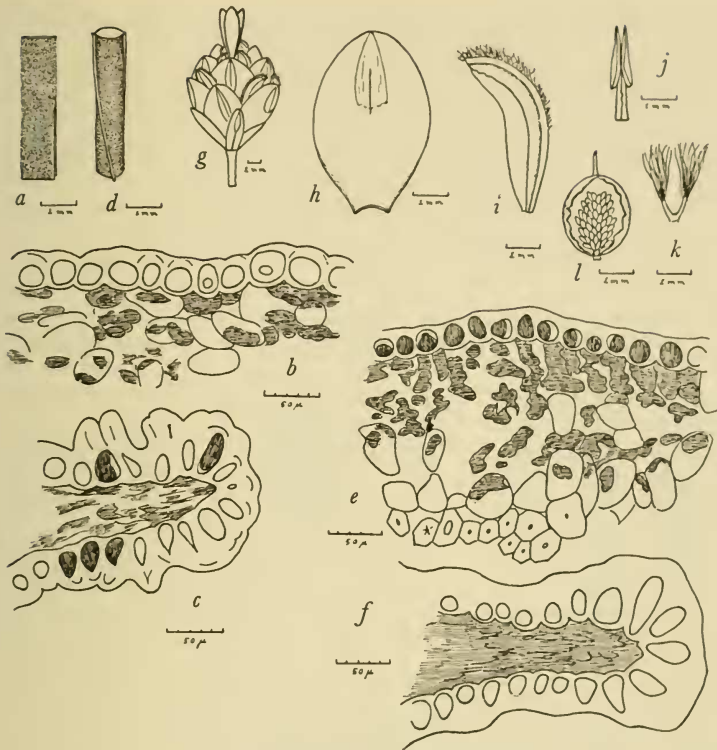


FIG. 3

intima non persistente, cellulis marginalibus irregulariter prominentibus incrassatisque; scapis terminalibus, spiraliter tortis, ad 33 cm altis, 1 mm diametro, minute rugulosis, bicostatis; cellulis epidermalibus in sectione transversa earum foliorum valde similibus sed parte intima persistente, eis costarum prominentibus et cum parte intima non persistente; vagina scaporum quam foliis subduplo brevioribus, breviter laminatis; spica submultiflora, subglobosa, 8–9 mm longa; bracteis imbricatis, infimis valde reductis, fligeris late ellipticis rotundatisque, sepala subaequantibus, integris, fragilibus sed vix scarioso-marginatis, ex sicco aureo-brunneis, sublucidis, late convexis, area dorsali lanceolata cinereo-viridi 2.3 mm longa praeditis, plus minusve uninervatis, glabris; sepalis lateralibus liberis, valde inaequilateralis, falcato-oblongis, acutis, 4.7 mm longis, ala carinali angusta, supra medium dense rufo-fimbriata; limbo petalorum obovato-elliptico, 4 mm longo; antheris oblongis, valde retusis, ca. 2 mm longis; staminodiis bibrachiatis, penicillatis; placentis basalibus.

Type in the Herbário Anchieta, No. 36.939, collected in sandy campo, Serra São Luis de Purunã, Município de Campo Largo, State of Paraná,

Brazil, altitude 1150 m, 6 January 1948, by G. Hatschbach (No. 828). Negative No. 5457 in the U. S. National Herbarium.

The lateral sepals of *Xyris hatschbachii* are densely rufous-fimbriate on the upper half of the keel but not tufted at the apex. This character and others would relate it to *X. organensis* Malme, from which it differs in its rugulose leaves and scape and in its much smaller sepals. Its leaves are like those of *X. graminosa* Pohl ex Mart. only narrower, but its lateral sepals are no longer than the bracts and not white-tufted at apex.

***Xyris (Nematopus) mima* Smith and Downs, new species**

Fig. 4

Caespitosa, acaulis; radicibus gracillimis; foliis manifeste distichis, ad 7 cm longis, ensiformi-linearibus, transverse rugulosis, subconcoloribus,

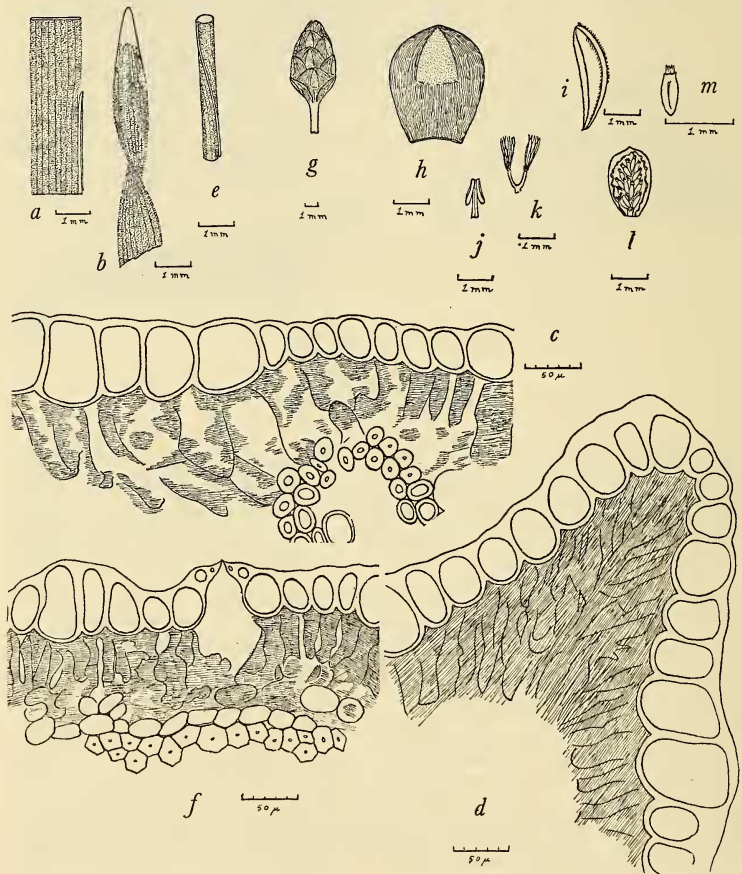


FIG. 4

eciliatis sed margine tuberculatis; vaginis obscuris, ca. tertiam partem folii occupantibus, superne quam laminis haud latioribus, apice ligula parva acuta auctis, basi rubescentibus et vix dilatatis; laminis spiraliter tortis, ad 2 mm latis, acuminatis et apice asymmetricè acutis vel subobtusis, leviter nervatis, nervis submarginalibus haud vel vix incrassatis; cuticula utrinque tenuissima, vix manifesta; cellulis epidermalibus lateralibus in sectione transversa valde inaequalibus, 35–85 μ altis, oblongis vel suborbicularibus, parietibus subaequalibus, ca. 5 μ crassis, cellulis marginalibus extus haud vel valde incrassatis; scapis terminalibus, plus minusve tortis, gracilibus, ad 17 cm altis, subteretibus, rugosis, bicostatis; cellulis epidermalibus in sectione transversa valde inaequalibus; vagina scaporum brevissime laminata, quam foliis subduplo brevior; spica ellipsoidea, 9 mm longa, 15–20 flora; bracteis arcte imbricatis, infimis valde reductis, florigeris late ellipticis, apice late rotundatis, sepala superantibus, integris, late convexis, glabris, ex sicco aureis, area dorsali lanceolata cinereo-viridi 1.5 mm longa praeditis; sepalis lateralibus liberis, subaequalibus, navicularibus, obtusis, 3 mm longis, carina brevissime setoso-ciliata; limbo petalorum late elliptico, 2 mm longo; antheris oblongis, 0.8 mm longis; staminodiis bibrachiatis, penicillatis; ovario crasse ellipsoideo; placentis basalibus; seminibus ellipsoideis, 0.5–0.7 mm longis, apice coma paleacea pallida coronatis.

Type in the U. S. National Herbarium, No. 2,283,911, collected on artificial sandy field, Missão Nova, Rio Cururú, region of the upper Rio Tapajós, State of Pará, Brazil, 12 July 1959, by W. A. Egler (No. 791) and Raimundo. Isotype in Museu Paraense "Emílio Goeldi" (No. 23.767).

In general habit, *Xyris mima* is practically indistinguishable from *X. paraensis* Poepp. ex Kunth and its staminodes are penicillate also, but its leaves are finely rugose like those of typical *X. savanensis* Miq. The seeds of *X. mima*, however, have an apical coma of scales, while the seeds of the other two species are biapiculate and without any scales. Thus *X. mima* can scarcely be considered an intermediate as it would seem at first glance.

Xyris (Nematopus) moraesii Smith and Downs, new species

Fig. 5

Caespitosa, acaulis; radicibus tenuissimis; foliis spiraliter ordinatis, vix manifeste distichis, ensiformi-linearibus, ad 30 cm longis, concoloribus; vaginis inconspicuis, angustis, superne quam laminis haud latioribus, eligulatis, basi vix dilatatis, juvenilibus molliter albidociliatis; laminis 1.5 mm latis, acuminatis, glabris, nervatis, nervis submarginalibus haud incrassatis; cuticula utrinque tenuissima, vix manifesta; cellulis epidermalibus in sectione transversa oblongis, ca. 70 μ altis, 30–40 μ latis, parietibus subaequalibus vel exterioribus paulo incrassatis, marginalibus extus valde incrassatis; scapis spiraliter tortis, ad 50 cm altis, subteretibus, pluricos-tatis, costis majoribus dense minuteque ciliatis, alibi laevibus; cellulis epidermalibus in sectione transversa oblongis cum luminibus globosis, 35–45 μ altis, parietibus exterioribus ca. 15 μ crassis, alteris multo tenu-

ioribus, eis costarum et subcostarum majoribus, extus valde incrassatis; vagina scaporum sine lamina, ad 10 cm longa; spica subglobosa, 7-8 mm diametro, pluriflora; bracteis laceratis, infimis valde reductis, florigeris suborbicularibus, sepala superantibus, opacis, ex sicco aureo-brunneis, minute granulosis, area dorsali parva angusta viridi praeditis; sepalis lateralibus liberis, subaequaliter, lanceolatis, acutis, 5 mm longis, carina lata, obscure sparseque denticulata; placentis basalibus; seminibus ellipsoideis, biapiculatis, 0.3 mm longis.

Type in the U. S. National Herbarium, No. 2,325,427, collected on flat sandy shores, State of Paraíba, Brazil, 30 August 1959, by Jayme Coêlho de Moraes (No. 2224).

In most of its diagnostic characters, *Xyris moraesii* appears related to *X. nilssonii* Malme, but differs in its eciliate evenly nerved leaf-blades, subglobose spikes, and dark-margined bracts. No locality within Paraíba is given, although probably the collection was made in the vicinity of the Escola de Agronomia do Nordeste, Areia, where the late Professor Moraes taught.

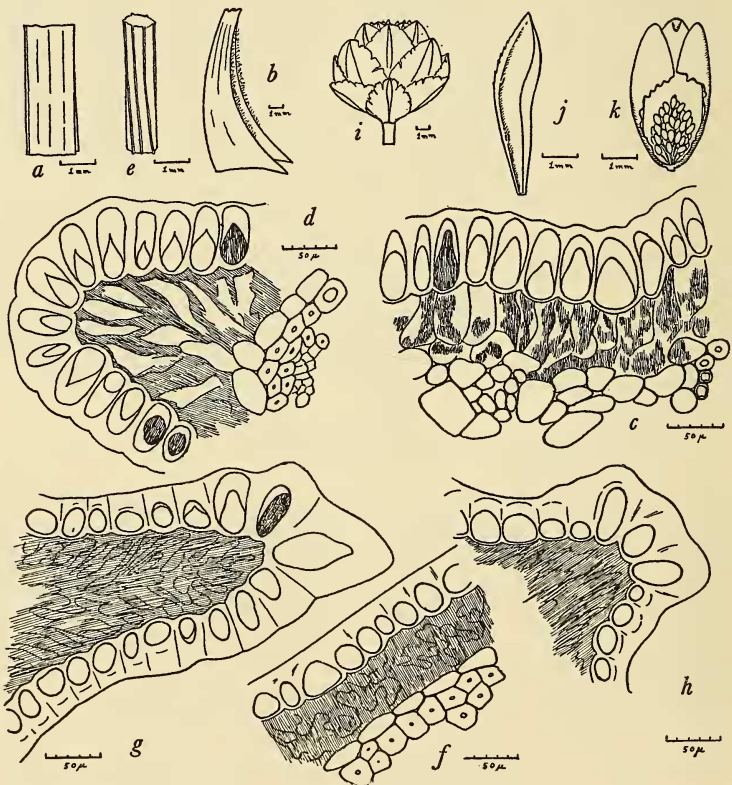


FIG. 5

***Xyris (Nematopus?) piresiana* Smith and Downs, new species**

Fig. 6

Caespitosa, acaulis; radicibus tenuibus; foliis manifeste distichis, ensiformi-linearibus, ad 25 cm longis sed nonnullis sine laminis; vaginis angustissime triangularibus, ad 35 mm longis, superne quam laminis latioribus, atro-castaneis, anguste pallido-marginatis, glabris, lucidis, basi levissime auriculatis, apice ligula acuta 3 mm longa praeditis; laminis ad 2.5 mm latis, margine pallidis valde incrassatisque, latere plus minusve granulosis, margine interiore basi minute pubescente, alibi glabris, per aetate rubescentibus; cuticula utrinque tenuissima, vix manifesta; cellulis epidermalibus lateralibus in sectione transversa uniseriatis, oblongis, 60–100 μ altis, luminibus sat magnis, parietibus exterioribus ca. 20 μ crassis, alteris multo tenuioribus, cellulis marginalibus multiseriatis, ab eis lateralibus abrupte distinctis, polygonatis cum luminibus minimis, 20–60 μ diametro; scapis spiraliter tortis, ad 34 cm altis, superne complanatis sed haud costatis, minute granulosis; cellulis epidermalibus in sectione trans-

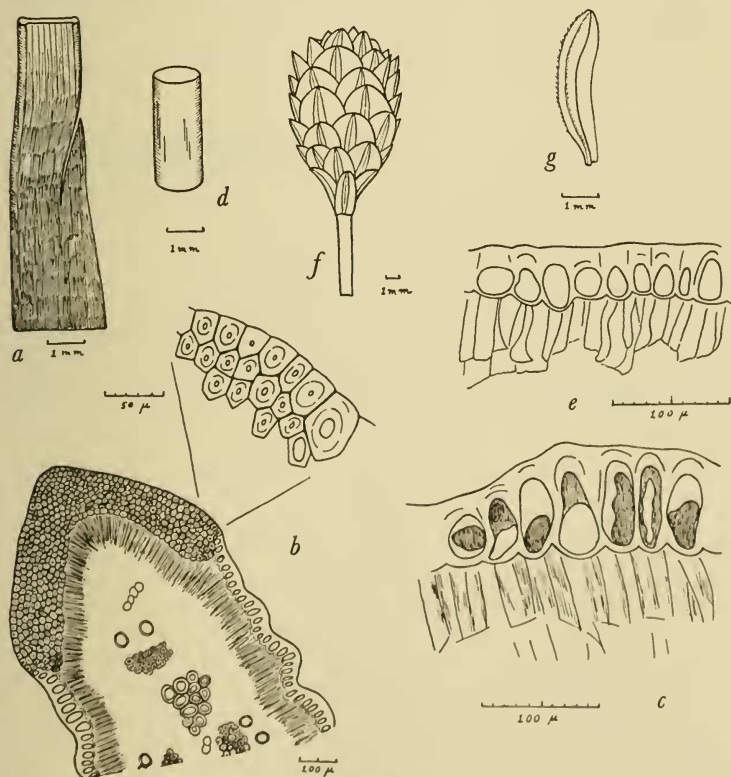


FIG. 6

versa oblongis, 40–50 μ altis, parietibus exterioribus 15–20 μ crassis, alteris tenuibus; vagina scaporum breviter laminata, eas foliorum duplo vel triplo superante; spica ellipsoidea, 10–12 mm longa, multiflora; bracteis arcte imbricatis, infimis valde reductis, ellipticis, area dorsali longa praeditis, florigeris late ellipticis, apice late rotundatis et macula rubra praeditis, sepala superantibus, integris, area dorsali oblonga 2–3 mm longa praeditis, haud carinatis, brunneis, glabris; sepalis lateralibus liberis, inaequilateris, suboblongis, apice late rotundatis, ala carinali angusta, minute ciliata; limbo petalorum elliptico, 2 mm longo; antheris oblongis.

Type in the New York Botanical Garden, collected at the airport, Serra do Cachimbo, State of Pará, Brazil, altitude 425 m, 18 December 1956, by J. M. Pires, G. A. Black, J. J. Wurdack, and N. T. Silva (No. 6457).

Paratypes: BRAZIL: Pará: Rio Cururú, upper Rio Tapajós Basin: Wet sand, Creputiá, Egler and Raimundo 1226 (MG, US); 1250 (MG, US). Missão Velha, Egler and Raimundo 1284 (MG, US).

The broad leaf-sheaths of *Xyris piresiana* place it with south Brazilian species like *X. lucida* Malme, but the rounded short-ciliate sepals distinguish it from this group. The paratypes are more slender plants with narrower leaves but do not differ in any essential character.

***Xyris (Nematopus) ramboi* Smith and Downs, new species**

Fig. 7

Caespitosa, subbulbosa sed subcaulescens; rhizomate crasso, brevi, verticali; radicibus tenuibus; foliis manifeste distichis, ensiformi-linearibus, valde applanatis, ad 11 cm longis; vaginis ca. dimidiam partem folii occupantibus, opacis, superne quam laminis haud latioribus, eligulatis, basi valde dilatatis et atris, valde tuberculatis; laminis 4–6 mm latis, sursum angustatis, apice asymmetrice rotundatis vel late acutis, in sicco paulo striatis, utroque latere basi valde tuberculatis sed sursum gradatim decescentibus, aciebus minute denseque ciliatis, nervis submarginalibus haud vel vix incrassatis; cuticula utrinque tenuissima, vix manifesta; cellulis epidermalibus lateralibus in sectione transversa subaequalibus, 70–90 μ altis, parietibus exterioribus ca. 10 μ crassis, alteris etiam tenuioribus, cellulis marginalibus altioribus, parietibus exterioribus ad 40 μ crassis; scapis terminalibus et lateralibus, vix spiraliter tortis, ad apicem versus bicostatis, 8–20 cm altis, costis dense ciliatis exclusis fere 1 mm diametro, alibi glabris, ad basin versus minutissime tuberculatis; cellulis epidermalibus in sectione transversa 50 μ altis, parietibus exterioribus ad 20 μ crassis, alteris multo tenuioribus; vagina scaporum quam foliis brevior, in apiculum foliaceum brevem excurrente, brunnea; spica submultiflora, ellipsoidea, 10–13 mm longa; bracteis vetustis solum cognitis, patentibus, ellipticis, late rotundatis, ad 5 mm longis, sepala subaequantibus, coriaceis, integerrimis vel apice per aetatem minute erosis, ecarinatis, uninervatis, pallide brunneis, opacis, area dorsali carentibus, laevibus, glabris, infimis reductis; sepalis lateralibus liberis, lineari-oblongatis, acutis, ca. 5 mm longis, subaequilateris, apice incurvata, ala carinali angusta, apice minute ciliata; placentis basalibus.

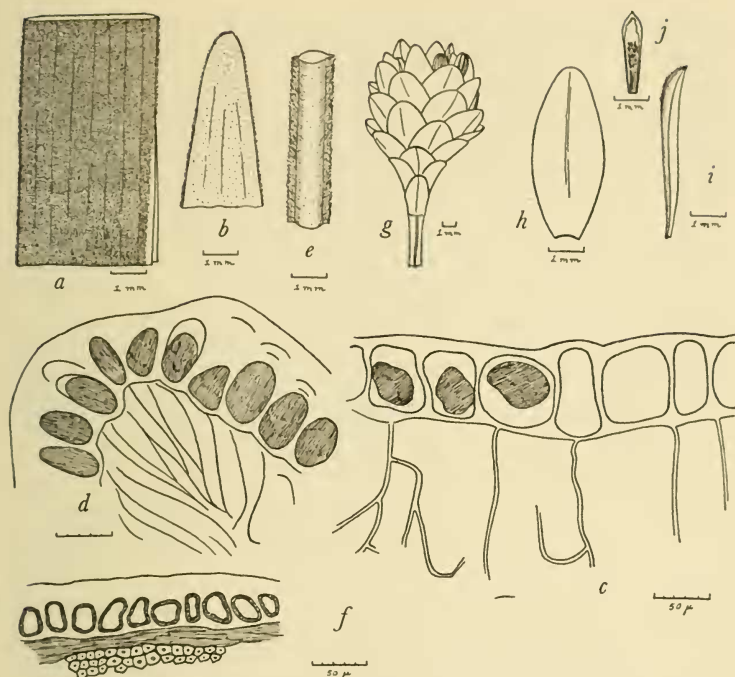


FIG. 7

Type in the Herbário Anchieta, No. 3486, collected on the airport, Caravelas, State of Bahia, Brazil, 12 January 1940, by B. Rambo. Negative No. 5472 in the U. S. National Herbarium.

The broad flat leaf-blades of *Xyris ramboi* quickly distinguish it from the nearly related *X. bahiana* Malme, but in most other characters they are very similar.

***Xyris (Nematopus) reitzii* Smith and Downs, new species**

Fig. 8

Densissime caespitosa; radicibus ad 1 mm diametro; foliis ultra 50 cm longis, glabris; vaginis superne quam laminis multo latioribus, late ligulatis, omnino atro-castaneis, sublucidis vel opacis, 9–13 cm longis, basi valde dilatatis; laminis subteretibus, paulo ultra 1 mm diametro, fascis fibro-vascularibus 7 praeditis, ad basin versus plus minusve rugulosis; cuticula utrinque tenuissima, vix manifesta; cellulis epidermalibus in sectione transversa uniformibus, oblongis cum lumine parva globosa vacua, $40\ \mu$ altis, parietibus exterioribus $20\ \mu$ crassis, alteris multo tenuioribus; scapis terminalibus, ad 80 cm altis vel ultra, subteretibus, ecostatis, ex sicco minute nervatis; cellulis epidermalibus in sectione transversa eis

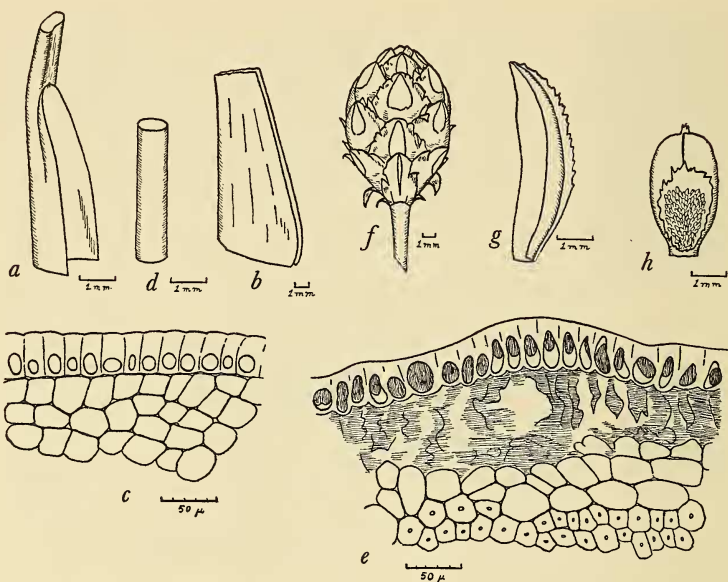


FIG. 8

foliorum similibus sed partibus interioribus praeditis; vagina scaporum 15-18 cm longa, breviter sed manifeste laminata; spica multiflora, crasse ellipsoidea, 12 mm longa; bracteis arcte imbricatis, infimis manifeste reductis, florigeris late ellipticis rotundatisque, sepala subaequantibus, margine tenuibus, mox laceratis, glabris, area dorsali ovata viridi prae-

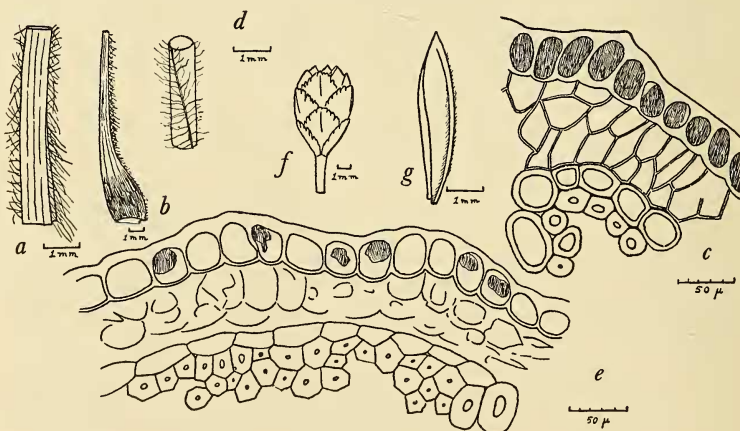


FIG. 9

ditis; sepalis lateralibus liberis, valde inaequilateris, semi-ellipticis, acutis, 6 mm longis, glabris, ala carinali supra medium dilatata et valde lacerata; placentis basalibus.

Type in the U. S. National Herbarium, No. 2,325,426, collected in bog, 5 kilometers east of Faxinal dos Guedes, Município de Xanxerê, State of Santa Catarina, Brazil, altitude 700–900 m, 3 January 1957, by L. B. Smith and Pe. R. Reitz (No. 9818). Isotypes in Herbário “Barbosa Rodrigues” and Museu Nacional, Rio de Janeiro.

Paratype: BRAZIL: Santa Catarina: Município Campo Alegre: Between Postema and Morro Iquererim, alt. 900–1000 m, 7 November 1956, L. B. Smith and R. Klein 7451 (HBR, R, US).

Xyris reitzii belongs to the difficult species complex of southern Brazil with broad dark leaf-sheaths and prominent dorsal areas. Its nearest relative is probably *X. vacillans* Malme, but it differs from all in its glabrous and broadly lacerate-carinate lateral sepals.

***Xyris (Nematopus?) tomentosa* Smith and Downs, new species**

Fig. 9

Caespitosa, acaulis, bulbosa: radicibus tenuissimis; foliis heteromorphis, extimis ad vaginas parvas late ovatas atro-castaneas reductis; intimis paucis laminigeris, ad 23 cm longis; vaginis intimis elongatis, superne quam laminis haud latioribus, basi paulo dilatatis, eligulatis; laminis planis, 1 mm latis, ex sicco plus minusve nervatis, margine longe denesque albo-tomentosis; cuticula utrinque tenuissima, vix manifesta; cellulis epidermalibus in sectione transversa uniformibus, late oblongis, 40–50 μ altis, partibus interioribus persistentibus, parietibus subaequalibus, tenuibus; scapis spiraler tortis, gracillimis, ad 37 cm altis, lineatim albo-tomentosis; cellulis epidermalibus in sectione transversa subquadratis, 40–50 μ altis, parietibus exterioribus ca. 10 μ crassis, alteris tenuioribus; vagina scaporum breviter laminata, quam foliis duplo vel triplo brevior; spica ellipsoidea, 6 mm longa, pauciflora; bracteis arcte imbricatis, infimis paulo reductis, florigeris late ellipticis, sepala supcrantibus, plus minusve uninervatis, ex sicco aureo-brunneis, tenuibus, sine area dorsali, valde laceratis, apicc rubro-hyalino-marginatis; sepalis lateralibus liberis, inaequilateris, suboblongis, apicc rotundatis, ca. 5 mm longis, ala carinali angusta, minute pubescenti; limbo petalorum elliptico, 3 mm longo; antheris oblongis, 1.5 mm longis; staminodiis penicillatis; in ovariis perjuvenilibus placentis haud exacte visis.

Type in the U. S. National Herbarium, No. 2,324,957, collected on wet sandy soil, Erereri, Rio Cururú, region of the upper Rio Tapajós, State of Pará, Brazil, 8 February 1960, by W. A. Egler (No. 1273) and Raimundo. Isotype in Museu Paraense “Emilio Goeldi” (No. 24.320).

The conspicuous indument on the scape of *Xyris tomentosa* is reminiscent of that in *X. lanuginosa* Seub., but in *X. lanuginosa* it is evenly distributed while in our species it is confined to two vertical lines.

***Abolboda egleri* Smith and Downs, new species**

Fig. 10

Perennis; radicibus paucis, crassis; rhizomatibus brevissimis sed ramosis; foliis plurimis, densissime rosulatis; vaginis ellipticis, 5 mm longis, planis; laminis linearibus, ad 3 cm longis, 0.8 mm latis, planis, supra laevibus, subtus valde carinatis, margine incrassatis integrisque, apice seta pallida tenuissima 4 mm longa praeditis; cuticula utrinque tenuissima, vix manifesta; cellulis epidermalibus dorsalibus in sectione transversa subquadratis, 30–40 μ altis, vacuis, parietibus subaequalibus, tenuibus; cellulis ventralibus quadratis vel polygonatis, vix 20 μ diametro, luminibus minimis; cellulis marginalibus inter alias intermediis; scapo unico, ad 9 cm alto, 1 mm diametro; scapi vaginis 1-jugatis, suboppositis, submedianis, amplexantibus, lanceolatis, 9–11 mm longis, membranaceo-marginatis, apice seta brevissima praeditis; inflorescentia simplicissima, spicata, ellipsoidea, 9–10 mm longa, pauciflora; bracteis late ovatis,

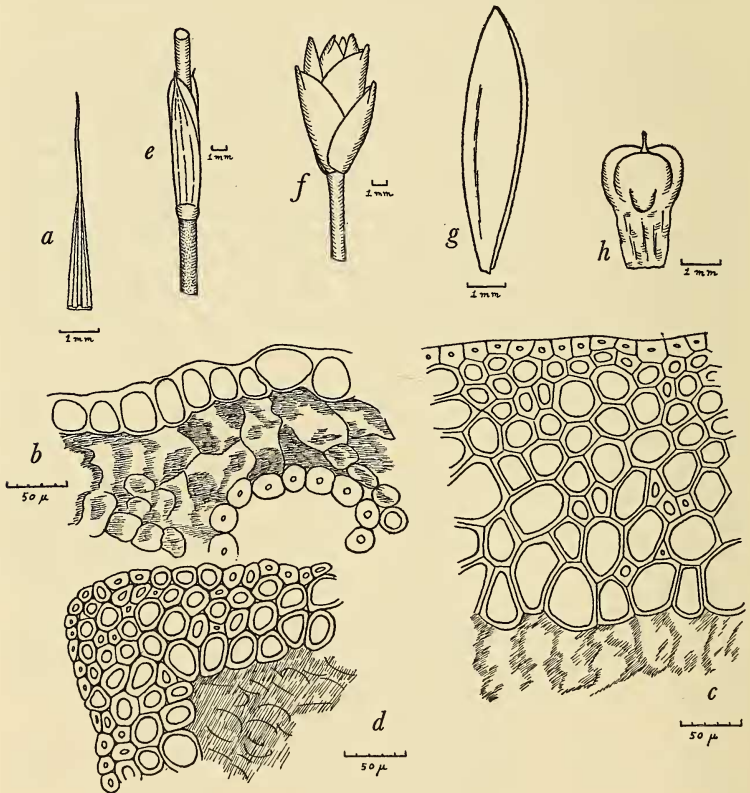


FIG. 10

breviter crasseque apiculatis, ad 7 mm longis, late convexis, induratis, apice late scarioso-marginatis, area dorsali viride carentibus, infimis fertilibus, ab alteris superatis; sepalis ellipticis, late acutis, 7 mm longis; petalis verisimiliter caeruleis.

Type in the U. S. National Herbarium, No. 2,324,956, collected on swampy ground, Erereri, Rio Cururú, region of the upper Rio Tapajós, State of Pará, Brazil, 8 February 1960, by W. A. Egler (No. 1271) and Raimundo. Isotype in Museu Paraense "Emilio Goeldi" (No. 24.318).

This *Abolboda egleri* combines the short basal bracts and long-setose leaf-apices of *A. pulchella* H. and B. with the narrow, very numerous leaves of *A. acicularis* Idrobo and Smith. It differs from both species in having the underside of the leaf-blade prominently carinate.

EXPLANATION OF FIGURES

Fig. 1.—*Xyris archeri*: *a*, apex of leaf-sheath; *b*, section of leaf-blade; *c*, section of leaf-epidermis; *d*, section of scape; *e*, spike; *f*, lateral sepals; *g*, ovary (opened); *h*, seed.

Fig. 2.—*Xyris egleri*: *a*, apex of leaf-sheath; *b*, apex of leaf-blade; *c*, section of leaf-epidermis, lateral; *d*, same, marginal; *e*, section of scape 7 cm from base; *f*, same, 7 cm from apex; *g*, section of scape-epidermis; *h*, spike; *i*, floral bract; *j*, lateral sepal; *k*, stamen; *l*, staminode.

Fig. 3.—*Xyris hatschbachii*: *a*, apex of leaf-sheath; *b*, section of leaf-epidermis, lateral; *c*, same, marginal; *d*, section of scape; *e*, section of scape-epidermis; *f*, same, of costa; *g*, spike; *h*, floral bract; *i*, lateral sepal; *j*, stamen; *k*, staminode; *l*, ovary (opened).

Fig. 4.—*Xyris mimia*: *a*, apex of leaf-sheath; *b*, apex of leaf-blade; *c*, section of leaf-epidermis, lateral; *d*, same, marginal; *e*, section of scape; *f*, section of scape-epidermis; *g*, spike; *h*, floral bract; *i*, lateral sepal; *j*, stamen; *k*, staminode; *l*, ovary (opened); *m*, seed.

Fig. 5.—*Xyris moraesii*: *a*, apex of leaf-sheath; *b*, base of leaf-sheath; *c*, section of leaf-epidermis, lateral; *d*, same, marginal; *e*, section of scape; *f*, section of scape-epidermis; *g*, same of main costa; *h*, same of subcosta; *i*, spike; *j*, lateral sepal; *k*, ovary (opened).

Fig. 6.—*Xyris piresiana*: *a*, apex of leaf-sheath; *b*, section of leaf and marginal epidermis; *c*, same, lateral; *d*, section of scape; *e*, section of scape-epidermis; *f*, spike; *g*, lateral sepal.

Fig. 7.—*Xyris ramboi*: *a*, apex of leaf-sheath; *b*, apex of leaf-blade; *c*, section of leaf-epidermis, lateral; *d*, same, marginal; *e*, section of scape; *f*, section of scape-epidermis; *g*, spike; *h*, floral bract; *i*, lateral sepal; *j*, ovary (opened).

Fig. 8.—*Xyris reitzii*: *a*, apex of leaf-sheath; *b*, base of leaf-sheath; *c*, section of leaf-epidermis; *d*, section of scape; *e*, section of scape-epidermis; *f*, spike; *g*, lateral sepal; *h*, ovary (opened).

Fig. 9.—*Xyris tomentosa*: *a*, apex of leaf-sheath; *b*, base of leaf-sheath; *c*, section of leaf-epidermis; *d*, section of scape; *e*, section of scape-epidermis; *f*, spike; *g*, lateral sepal.

Fig. 10.—*Abolboda eglerti*: *a*, apex of leaf-blade; *b*, section of leaf-epidermis, dorsal; *c*, same, ventral; *d*, same, marginal; *e*, section of scape with bracts; *f*, spike; *g*, lateral sepal; *h*, ovary.