

PART 4

A SYNOPSIS OF THE AMERICAN VELLOZIACEAE

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Introduction

The present paper is a necessary corollary to my research on the origin of the flora of southern Brazil that was supported by a grant from the National Science Foundation in 1956-57. Although none of my 1956-57 collections are represented here, the Velloziaceae are one of the best examples of the distribution of a family of consistently heliophile species, and its extension southward from the planalto of central Brazil provides a pattern to illustrate the movement of many other groups.

The American species of Velloziaceae have not been organized since Seubert's treatment in the "Flora Brasiliensis" in 1847 and then only sketchily and without complete keys. In 1937, Goethart and Henrard published many new species without any key whatever, but this has only aggravated the problem of classifying new material. Thus, in order to make the material available for phytogeographic studies it is first necessary to revise it. A number of American herbaria have been consulted and photographs of most of the types of Goethart and Henrard have been obtained from the Berlin-Dahlem herbarium through the kindness of Dr. G. M. Schulze and of Frau Christa Metzger, who had them on loan from Leiden. Frau Metzger is working on material in European herbaria with special emphasis on leaf anatomy. The present paper was begun without knowledge of her work, but since all novelties are based on material in American herbaria it should prove largely supplementary.

In preparing the present paper, I am indebted to the curators of the following herbaria for the opportunity to study the material in their care:

Chicago Natural History Museum (F)
Gray Herbarium of Harvard University (GH)
Instituto Agronômico do Norte (IAN)
Museu Paraense "Emilio Goeldi" (MG)
New York Botanical Garden (NY)
University of California (UC)
United States National Herbarium (US)

Exsiccatae have been cited only for novelties and new combinations, but many that do not appear have been most helpful in making keys and studying distribution. My knowledge of the older species has been much increased by the type photographs of J. Francis Macbride received from the Chicago Natural History Museum, and N. Y. Sandwith has kindly communicated locality data of Gardner's collections from his notebook at Kew.

Some of the earliest authors to treat the Velloziaceae, like Kunth, confused the group with the Bromeliaceae, presumably on the basis of habital resemblances. However, it is clear from the character of the endosperm as well as of the perianth that the Velloziaceae are much more closely allied to the Amaryllidaceae. In fact, under the broad interpretation of the Amaryllidaceae, Baker was doubtless more logical to include the Velloziaceae as a tribe, Vellozieae, than was Pax to maintain it as a separate family. In a system such as Hutchinson's, the Velloziaceae, as distinguished by stalked placentas and many-ranked ovules, are reasonably equivalent to the new units derived from the division of the Liliaceae and Amaryllidaceae.

The primary subdivision of the Velloziaceae has been based on three different sets of characters according to the authors involved. Baker and Hutchinson used the presence or absence of an extension of the perianth-tube above the ovary. This is a distinction which is striking between extremes but which is so finely intergrading from species to species in a complete survey that it is quite unworkable. Pax used the distinction between 6 stamens and more than 6, and since no species combining the two has yet been found, his system can be said to be workable. However, it places under *Barbacenia* species that are in every other respect indistinguishable from *Vellozia*, and furthermore it is quite illogical because species with 9 stamens have some tepals subtending a single stamen as in *Barbacenia* and others subtending more than one as in *Vellozia*. Seubert used the form of the filament, which is a clear and logical distinction with good correlations. For instance, sharp cleavage of leaf-blades and broad 3-lobed stigmas are restricted to *Vellozia* by Seubert's classification. It is difficult to understand how later authors could have overlooked or disregarded his system.

Velloziaceae

Drude in Schenck, Handb. Bot. 333. 1886; Pax in Engl. & Prantl, Pflanzenfam. 2, Abt. 5: 125. 1887; ed. 2. 15a: 431. 1930; Hutchinson, Fam. Fl. Pl. ed. 2. 2: 678. 1959.

Amaryllideae-Vellozieae D. Don, Edinb. New Philos. Journ. 8: 164. 1830; Baker in Benth. & Hook. Gen. Pl. 3: 739. 1880.

Family *Vellozieae* Seubert in Mart. Fl. Bras. 3, pt. 1: 65. 1847.

Perennial plants; indument highly diverse, often not strictly epidermal (Greves, Journ. Bot. 59:274. 1921); stems (caudex) woody, fibrous, simple or dichotomously branched, covered with persistent leaf-sheaths; complete leaves clustered at the end of the stem or its branches, grass-like; scapes one or more, terminal becoming lateral by the elongation of the axis; flowers solitary on each peduncle, perfect, actinomorphic, brightly colored; perianth-tube equaling to greatly exceeding the ovary and adnate to it; tepals in 2 series but mostly very similar, erect to reflexed at anthesis; stamens 6 to numerous in 6 bundles; filaments terete and simple or flat with 2 lobes or appendages at the summit, rarely lacking; anthers basifixed to medifixed, opening by longitudinal slits; ovary 3-locular, inferior; style slender but usually enlarged by the stigmas; ovules numerous in many rows on stalked placentas; fruit a capsule; seeds numerous; embryo small; endosperm copious, non-farinaceous.

1. Anthers basifixed; stigma broadly 3-lobed; leaf-blades deciduous along a straight transverse line; stamens 6 or usually more, the filaments terete and elongate, unappendaged above **1. Vellozia**
1. Anthers dorsifixed, although sometimes only slightly above the base; stigma slightly if at all lobed; leaf-blades tardily and irregularly deciduous; stamens always 6.
 2. Filaments very short, terete, unappendaged, the anthers appearing sessile. **2. Barbaceniopsis**
 2. Filaments evident, flat with two lobes or appendages at the summit. **3. Barbacenia**

1. Vellozia

Vellozia Vand. Fl. Lusit. & Brasil. Spec. 32, pl. 2. 1788.

Xerophyta Juss. Gen. 50. 1789.

Campderia A. Rich. Bull. Soc. Philom. 79. 1822.

Radia A. Rich. in Kunth, Syn. Pl. Aequin. 1: 300. 1822.

Schnizleinia Steud. ex Hochstetter in Flora 27: 31. 1844.

Talbotia Balf. in Trans. Bot. Soc. Edinb. 9: 190. 1868.

Plants from small stature to over 4 meters high; caudex mostly few-many-branched; leaf-blades deciduous along a straight transverse line; tepals free above the ovary or forming a tube; stamens 6, or more numerous and in 6 bundles; filaments terete and filamentous.

Type species: *Vellozia glabra* Mikan.

Keys to the Species of Vellozia

1. Tepals free or obscurely short-connate above the ovary . . . Section I. **Vellozia**
1. Tepals forming a distinct tube above the ovary . . . Section II. **Radia**

SECTION I. VELLOZIA

1. Ovary (or capsule) smooth and glabrous.
 2. Plant nearly stemless; leaves 5-7 cm. long.
 3. Stamens subequal; phalanges simple **1. V. macedonis**
 3. Stamens very unequal; phalanges appendaged **2. V. tenella**

2. Plant distinctly caulescent.
4. Scapes less than 1 cm. long; capsule obconic or truncate.
5. Stamens 6; leaf-blades obtuse or acute.
6. Leaf-blades acute, ciliate; sheaths pubescent . . . 3. *V. abietina*
6. Leaf-blades obtuse, serrulate 4. *V. tragacantha*
5. Stamens more than 6; leaf-blades retuse 5. *V. pusilla*
4. Scapes much more than 1 cm. long.
7. Caudex simple or subsimple; leaf-blades only 2.5 cm. long.
6. *V. sellovii*
7. Caudex branched; leaf-blades at least 8 cm. long.
8. Stamens 6; leaf-blades lanceolate, widest at the middle.
7. *V. plicata*
8. Stamens more than 6; leaf-blades linear or very narrowly triangular.
9. Capsule alate-trigonous, broadest at the middle, dull; leaf-blades filiform-acuminate, coarsely brown-ciliate near the base.
8. *V. alata*
9. Capsule terete to trigonous but not alate, broadest at apex, lustrous.
10. Scapes erect; leaves filiform-acuminate. 9. *V. glabra*
10. Scapes recurved; leaves broadly acute to retuse.
10. *V. incurvata*
1. Ovary (or capsule) at least partially vestite.
11. The ovary vestite primarily on the angles or base.
12. Trichomes of the ovary acute, making the angles scabrous, concolorous with the ovary.
13. Tepals 60-70 mm. long; leaf-blades obtuse to subacute; old leaf-sheaths mostly entire 11. *V. compacta*
13. Tepals 30 mm. long.
14. Old leaf-sheaths mostly entire; leaf-blades acuminate (?).
12. *V. verruculosa*
14. Old leaf-sheaths splitting into coarse fibers; leaf-blades obtuse to subacute 13. *V. fibrosa*
12. Trichomes of the ovary rounded, glandular in character.
15. Leaf-blades acuminate; tepals 40-60 mm. long . . . 14. *V. variabilis*
15. Leaf-blades subacute to retuse.
16. Glands of the ovary stipitate; leaf-sheaths splitting into fibers.
17. Fibers of the leaf-sheaths straight (?) 15. *V. ambigua*
17. Fibers of the leaf-sheaths incurved 16. *V. martiana*
16. Glands of the ovary sessile.
18. Tepals obtuse and submucronulate; leaf-blades 9-15 mm. wide.
17. *V. wettsteinii*
18. Tepals acute; leaf-blades not more than 3 mm. wide.
19. Leaf-blades to 18 cm. long, 3 mm. wide . . . 18. *V. angustifolia*
19. Leaf-blades less than 4 cm. long; about 1 mm. wide.
19. *V. virgata*
11. The ovary completely vestite or laxly and evenly vestite.
20. Indument of the ovary glandular in character.
21. Leaves acuminate or subulate-acuminate.
22. Capsule oblong.
23. Leaf-blades narrow, not over 6 mm. wide; bases of the glands stout, confluent 20. *V. echinata*

23. Leaf-blades 10 mm. or broader.
 24. Margins of the leaf-blades pilose; stamens 15.
21. *V. fimbriata*
24. Margins of the leaf-blades merely scabrous; stamens 30-36.
22. *V. intermedia*
22. Capsule (or ovary) ovoid, globose, or hemispheric.
 25. Ovary broad at apex, hemispheric or broadly truncate.
 26. Margins of the leaf-blades pilose; stamens 30.
23. *V. barbaciifolia*
26. Margins of the leaf-blades serrulate; stamens 18.
24. *V. hemisphaerica*
25. Ovary contracted at apex, ovoid, or globose.
 27. Scape less than 2 cm. long; tepals obovate, rounded, 50 mm. long **25. *V. breviscapa***
27. Scape elongate.
 28. Leaf-blades about 3 mm. wide; caudex slender with few ranked laxly imbricate leaf-sheaths **26. *V. squalida***
28. Leaf-blades 15 mm. or broader; caudex stout with many-ranked very densely imbricate leaf-sheaths.
 29. Tepals 75 mm. long; leaf-blades pubescent beneath; ovary densely glandular-hirsute **27. *V. aloifolia***
29. Tepals 45 mm. long; leaf-blades glabrous; ovary subdensely and coarsely stipitate-glandular **28. *V. viannae***
21. Leaves broadly subacute, obtuse or emarginate.
 30. Margins of the leaf-blades entire and glabrous.
 31. Ovary rufescent-pilose; leaf-blades gray villous beneath.
29. *V. glandulifera*
31. Ovary scabrous-glandular; leaf-blades very glutinous.
30. *V. scoparia*
30. Margins of the leaf-blades serrate, setose, or pilose.
 32. Leaf-blades wholly white-pilose, 1.5 mm. wide, ecarinate.
31. *V. pilosa*
32. Leaf-blades incompletely vestite if at all.
 33. Glands of the ovary sessile or subsessile; capsule widest near the apex.
 34. Stamens 6; peduncle less than 1 cm. long **32. *V. taxifolia***
34. Stamens 18-30; peduncle much longer than 1 cm.
 35. Tepals 2 cm. long; stamens 18 **33. *V. declinans***
35. Tepals 4 cm. long; stamens 30 (?) **16. *V. martiana***
33. Glands of the ovary stipitate.
 36. Sheaths ciliate throughout with stiff spreading setae.
34. *V. barbata*
36. Sheaths entire or with a few teeth toward apex.
 37. Capsules trigonous or oblong.
 38. Sheaths aculeolate toward apex; capsules trigonous, 12-costate; tepals linear-lanceolate, acute.
35. *V. pleurocarpa*
38. Sheaths entire; capsules oblong; tepals linear-spathulate.
36. *V. leptopetala*
37. Capsules ellipsoid or globose.
 39. Leaf-sheaths densely white-lanate at apex; blades subdensely setose beneath; tepals 40-50 mm. long.
37. *V. resinosa*

39. Leaf-sheaths glabrous; tepals smaller.
 40. Sheaths wholly covered; caudex very short and stout. **38. V. brevifolia**
40. Sheaths much exposed toward their apices; caudex slender.
 41. Plants of medium stature, well over 25 cm. high; leaf-blades serrulate . . . **39. V. epidendroides**
 41. Plants dwarfed, less than 25 cm. high.
 42. Leaf-blades straight, 1 mm. wide, laxly vestite with dark sessile glands . . . **40. V. minima**
 42. Leaf-blades contorted, 3 mm. wide, subdensely setose . . . **41. V. streptophylla**
20. Indument of the ovary punctulate, acute, or sharply truncate, not glandular in character.
43. Trichomes of the ovary minute, making it scabrous or granulate and generally exposing its surface in between.
44. Scape none; capsule hidden in the leaf-sheaths, obconic.
 45. Leaf-blades 2.5 cm. long, emarginate . . . **32. V. taxifolia**
 45. Leaf-blades 9-10 cm. long, subobtuse . . . **42. V. cryptantha**
44. Scape evident.
 46. Ovary ovoid or ovoid-globose.
 47. Caudex to 2 meters high, much branched; leaf-blades deeply retuse, 5 mm. wide; old sheaths not splitting into fibers. **43. V. ramosissima**
 47. Caudex not over 20 cm. high, simple or few-branched.
 48. Leaf-blades obtuse; old sheaths densely imbricate, splitting; caudex very short . . . **44. V. asperula**
 48. Leaf-blades retuse; old sheaths much exerted, entire; caudex to 20 cm. high . . . **36. V. leptopetala**
46. Ovary oblong or oblong-ellipsoid.
 49. Tepals 40-50 mm. long.
 50. Scape nearly glabrous; tepals long-attenuate toward base, white (?) . . . **45. V. punctulata**
 50. Scape strongly vestite on the upper half; tepals lanceolate, blue . . . **46. V. bradei**
49. Tepals 10-20 mm. long.
 51. Margins of the blades entire; sheaths remaining entire; blades 12 mm. wide, glaucous beneath . . **47. V. piresiana**
 51. Margins of the blades serrulate; sheaths splitting into coiled fibers.
 52. Leaf-blades 3-4 mm. wide; tepals 20 mm. long. **48. V. ornata**
 52. Leaf-blades to 7 mm. wide; tepals 10 mm. long. **49. V. granulata**
43. Trichomes of the ovary coarse, completely covering it.
 53. Leaf-blades acuminate or subulate-acuminate.
 54. Scape glabrous or at most slightly scabrous at apex, contrasting sharply with the densely vestite ovary.
 55. Trichomes of the ovary broadly truncate with contiguous apices . . . **50. V. flavicans**

55. Trichomes acute or obtuse and laterally flattened but not truncate.
56. Trichomes of the ovary short, ovoid; leaf-sheaths entire. **51. *V. glauca***
56. Trichomes of the ovary elongate, subulate or laterally flattened.
57. Leaf-sheaths remaining entire.
58. Blades strongly sulcate **52. *V. glochidea***
58. Blades nearly even **53. *V. gardneri***
57. Leaf-sheaths splitting into fibers.
59. Ovary-trichomes subulate, acute; leaf-blades glabrous beneath except the keel **54. *V. crassicaulis***
59. Ovary-trichomes much flattened laterally, obtuse; leaf-blades villous beneath **55. *V. sulphurea***
54. Scape strongly vestite on the upper third or half, not contrasting with the ovary.
60. Leaf-blades 15 mm. wide; tepals 80–120 mm. long; scape muricate toward apex.
61. Scape 7 cm. long; ovary-trichomes abruptly attenuate. **56. *V. seubertiana***
61. Scape to 40 cm. long; ovary trichomes sharply truncate. **57. *V. froesii***
60. Leaf-blades 4–8 mm. wide (uncertain in *V. pumila*); scape 2–4.5 cm. long above the leaf-sheaths.
62. Tepals 20 mm. long **58. *V. hypoxoides***
62. Tepals 40–80 mm. long.
63. Sheaths splitting into fibers.
64. Caudex ovoid, 4 cm. long; leaf-margins and keel subdensely aculeolate; tepals 40 mm. long. **59. *V. pumila***
64. Caudex cylindric, elongate; leaf-margins and keel entire and glabrous; tepals 80 mm. long . . . **60. *V. swallenii***
63. Sheaths remaining entire; plant stemless; tepals 60 mm. long **61. *V. bulbosa***
53. Leaf-blades broadly subacute, obtuse, or emarginate.
65. Scape glabrous, contrasting sharply with the densely vestite ovary.
66. Leaf-sheaths remaining entire; ovary subglobose. **62. *V. cinerascens***
66. Leaf-sheaths splitting into coarse fibers; ovary clavate-cylindric, truncate **63. *V. circinans***
65. Scape strongly vestite toward apex.
67. Trichomes of scape and ovary fine, filamentous. **64. *V. dasypus***
67. Trichomes of scape and ovary much coarser.
68. Ovary prismatic, its trichomes subulate, more or less twisted **65. *V. glaziovii***
68. Ovary terete or if trigonous, broader at center, base, or apex.
69. Plant essentially stemless.
70. Leaf-blades ciliate-serrate **66. *V. crinita***
70. Leaf-blades merely serrate; ovary acutely trigonous. **67. *V. caruncularis***

69. Plant long-caulescent.

71. Scape about equaling the leaves, ca. 13 cm. long.

68. *V. gracilis*

71. Scape much exceeded by the leaves.

72. The scape trigonous; ovary-trichomes in part bicuspidate 69. *V. grisea*

72. The scape terete; ovary-trichomes acute.

70. *V. exilis*

SECTION II. RADIA

1. Scapes not over 3 cm. long.

2. Tepals 2 cm. long; leaf-blades 3-5 cm. long; flowers numerous, sessile.

71. *V. uaipanensis*

2. Tepals 8 cm. or longer; leaf-blades to 27 cm. long; flowers solitary.

3. Flowers sessile 72. *V. markgrafii*

3. Flowers scapose.

4. Leaf-blades subappressed-pilose beneath, 4 mm. wide . 73. *V. riedeliana*

4. Leaf-blades glabrous except for the ciliate keel and margins, 10 mm. wide 74. *V. maguirei*

1. Scapes elongate.

5. Perianth-tube not more than 30 mm. long above the ovary.

6. Scape 6-15 cm. long 75. *V. candida*

6. Scape over 20 cm. long 76. *V. macrantha*

5. Perianth-tube 35-80 mm. long.

7. Leaf-blades 4-7 mm. wide at most.

8. Apex of leaf-blade obtuse; sheaths soon divided into coarse fibers.

77. *V. leucanthos*

8. Apex of leaf-blade filiform-attenuate.

9. Perianth-tube 35-50 mm. long.

10. Scapes about equaling the leaves; caudex rarely to 4 cm. long.

78. *V. cachimbensis*

10. Scapes not more than half as long as the leaves; caudex 50-100 cm. long.

11. The perianth-tube 35-40 mm. long . . . 79. *V. macarenensis*

11. The perianth-tube 45-50 mm. long . . . 80. *V. macrosiphonia*

9. Perianth-tube 60-80 mm. long.

12. Flowers exceeding the leaves; leaf-sheaths spotted with dark brown 81. *V. maculata*

12. Flowers about equaling the leaves or shorter.

13. Leaf-blades glabrous beneath; branches including old leaf-sheaths not over 1 cm. in diameter.

14. Trichomes of the ovary subglobose with a minute black gland on the apex 82. *V. machrisiana*

14. Trichomes of the ovary attenuate toward apex with a broad peltate gland 83. *V. uleana*

13. Leaf-blades lepidote-pilose beneath; branches including old leaf-sheaths 2 cm. or more in diameter . . . (94. *V. tubiflora*)

7. Leaf-blades 8-20 mm. wide.

15. Scapes less than 10 cm. long.

16. Trichomes of the ovary attenuate, the glands distinctly stipitate; scapes 4-6 cm. long 84. *V. panamensis*

16. Trichomes of the ovary ovoid, the glands subsessile; scapes 7–9 cm. long.
17. Caudex simple or few-branched, 1–2 meters high.
85. *V. phantasmagoria*
17. Caudex much branched.
18. Perianth-tube densely glandular 86. *V. dumitiana*
18. Perianth-tube very sparsely glandular 87. *V. rhynchocarpa*
15. Scapes 10–30 cm. long.
19. Leaf-sheaths essentially glabrous; tepals rounded; perianth-tube 75 mm. long 88. *V. maudeana*
19. Leaf-sheaths densely vestite at least between the nerves.
20. Apex of leaf-blades rounded 89. *V. annulata*
20. Apex of leaf-blades filiform-acuminate.
21. Flowers exceeding the leaves; leaf-blades densely vestite on both sides, 20 cm. long.
22. Leaf-blades 8 mm. wide, flowers solitary 90. *V. velutinoso*
22. Leaf-blades 17 mm. wide; flowers at least 3 together.
91. *V. dawsonii*
21. Flowers not exceeding the leaves.
23. Leaf-blades lepidote-pilose on both sides; perianth-tube 65 mm. long 92. *V. cana*
23. Leaf-blades glabrous above.
24. Perianth-tube ca. 40 mm. long 93. *V. lithophila*
24. Perianth-tube 45–80 mm. long 94. *V. tubiflora*

Section I. Vellozia

1. *Vellozia macedonis* Woodson, Ann. Mo. Bot. Gard. 37: 398. 1950.
BRAZIL: Minas Gerais: Mun. Ouro Preto: Saramenha.
2. *Vellozia tenella* Mart. ex Schult. f. in R. & S. Syst. 7: 293. 1826.
Vellozia graminea Pohl, Pl. Bras. 1: 118, pl. 93. 1827.
BRAZIL: Minas Gerais: Inficionado. Vila Rica (Ouro Preto).
3. *Vellozia abietina* Mart. Nov. Gen. & Sp. 1: 14, pl. 6. 1823.
Xerophyta abietina Spreng. Syst. Veg. 4: Cur. Post. 137. 1827.
BRAZIL: Minas Gerais: Itambé. Serra da Lapa.
4. *Vellozia tragacantha* Mart. ex Seubert in Mart. Fl. Bras. 3, pt. 1: 75. 1847.
Xerophyta tragacantha Mart. ex Schult. f. in R. & S. Syst. 7: 290. 1826.
BRAZIL: Minas Gerais: Villa do Rio das Contas. Diamantina. Serra de Caraça.
5. *Vellozia pusilla* Pohl, Pl. Bras. 1: 122, pl. 97. 1827.
BRAZIL: Minas Gerais: Itambé. Serra do Cipó. Diamantina.
Note: Leaves and habit identical with those of *V. taxifolia*, but stamens numerous and ovary smooth.
6. *Vellozia sellovii* Seubert in Mart. Fl. Bras. 3, pt. 1: 75. 1847.
BRAZIL: No locality. (?) Minas Gerais: Serra da Piedade.
7. *Vellozia plicata* Mart. Nov. Gen. & Sp. 1: 16, pl. 9. 1823.
Xerophyta plicata Spreng. Syst. Veg. 4: Cur. Post. 137. 1827.
BRAZIL: Bahia: Serra de Monte Santo.

8. *Vellozia alata* L. B. Smith, sp. nov.

PLATE 1

A *V. glabra* Mikan, cui affinis, laminis foliorum basi grosse brunneociliatis, capsula alato-trigona viride vix lucida differt.

Caudex simple (?), terete and 5 cm. in diameter including the old leaf-sheaths; leaves many-ranked, very densely imbricate, the complete ones about 40 at the apex of the stem; sheaths very closely nerved, suboblong, 7 cm. long, glabrous, the apices recurved with age but remaining entire; blades linear, filiform-acuminate, 4 dm. long, 12 mm. wide at base, densely and strongly nerved on both sides, otherwise even, coarsely brown-ciliate on the slightly thickened margins but not on the inconspicuous keel, otherwise glabrous; scapes few or solitary, erect or decurved, to 16 cm. long, trigonous, glabrous; capsule broadly ellipsoid, 5 cm. long, 3 cm. wide, alate-trigonous, sublustrous, yellow-green when dry; stamens 12 or more; style 5 cm. long.

Type in the U.S. National Herbarium, No. 2340342, collected 3½ miles from Hotel Chapeu do Sol, Serra do Cipó, State of Minas Gerais, Brazil, altitude 1110 meters (3700 feet), December 19, 1959, by Bassett Maguire, C. K. Maguire and J. Murça Pires (No. 44690). Isotype in the New York Botanical Garden.

9. *Vellozia glabra* Mikan, Delect. Fl. & Faun. Brasil. fasc. 2. 1820; Spreng. Syst. Veg. 3: 338. 1826.

Vellozia Vand. Fl. Lusit. & Brasil. Spec. 32, pl. 2. 1788. Without indication of species.

Vellozia phalocarpa Pohl, Pl. Brasil. 1: 123, pl. 98. 1827.

?*Vellozia crassirama* Goeth. & Henr. Blumea 2: 368. 1937.

BRAZIL: Minas Gerais: Serra do Cipó, Diamantina, Sêro. Itambó. Goiás. Bolivia.

10. *Vellozia incurvata* Mart. ex Schult. f. in R. & S. Syst. 7: 293. 1826.

BRAZIL: Minas Gerais.

11. *Vellozia compacta* Mart. ex Schult. f. in R. & S. Syst. 7: 293. 1826.

Vellozia compacta var. *obtusiflora* and var. *acutiflora* Seubert in Mart. Fl. Bras. 3, pt. 1: 77. 1847.

BRAZIL: Minas Gerais: Piedade, Nova Lima. Serra do Cipó.

12. *Vellozia verruculosa* Mart. ex Schult. f. in R. & S. Syst. 7: 293. 1826.

BRAZIL: Minas Gerais, Goiás: Corumbá. Natividade. Mato Grosso.

13. *Vellozia fibrosa* Goeth. & Henr. Blumea 2: 370. 1937.

BRAZIL: Minas Gerais: Biribiri, near Diamantina.

14. *Vellozia variabilis* Mart. ex Schult. f. in R. & S. Syst. 7: 293. 1826.**14a. *Vellozia variabilis* var. *variabilis***

?*Vellozia alutacea* Pohl, Pl. Bras. 1: 130. 1827.

Capsule tuberculate on the angles only.

BRAZIL: Minas Gerais: Lagoa Grande. Goiás: Serra Dourada.

14b. *Vellozia variabilis* var. *tuberculata* Seubert in Mart. Fl. Bras. 3, pt. 1: 77. 1847.

Capsules with a row of tubercles on each side as well as on angles.

BRAZIL: Minas Gerais: Nova Lima. Caldas.

15. *Vellozia ambigua* Goeth. & Henr. *Blumea* 2: 364. 1937.
BRAZIL: Minas Gerais: Itacolumi.
16. *Vellozia martiana* Goeth. & Henr. *Blumea* 2: 376. 1937.
BRAZIL: Minas Gerais: Pico Itabira do Campo.
17. *Vellozia wettsteinii* Goeth. & Henr. *Blumea* 2: 383. 1937.
BRAZIL: São Paulo: Between Sacramento and Jaguará.
18. *Vellozia angustifolia* Goeth. & Henr. *Blumea* 2: 365. 1937.
BRAZIL: Goiás (?): Morro Cubatão. Minas Gerais: Diamantina.
19. *Vellozia virgata* Goeth. & Henr. *Blumea* 2: 382. 1937.
BRAZIL: Minas Gerais: São José (João?) del Rei. Pico Itabira do Campo.
20. *Vellozia echinata* Goeth. & Henr. *Blumea* 2: 369. 1937.
BRAZIL: Minas Gerais: Caraça.
21. *Vellozia fimbriata* Goeth. & Henr. *Blumea* 2: 371. 1937.
BRAZIL: Minas Gerais: Serra da Lapa.
22. *Vellozia intermedia* Seubert in Mart. *Fl. Bras.* 3, pt. 1: 78. 1847.
BRAZIL: Without locality. ?Minas Gerais: Serra do Cipó.
23. *Vellozia barbaceniifolia* Seubert in Mart. *Fl. Bras.* 3, pt. 1: 79. 1847.
BRAZIL: Without locality.
24. *Vellozia hemisphaerica* Seubert in Mart. *Fl. Bras.* 3, pt. 1: 80. 1847.
BRAZIL: Bahia.
25. *Vellozia breviscapa* Mart. ex Schult. f. in R. & S. *Syst.* 7: 293. 1826.
BRAZIL: Minas Gerais: Diamantina.
26. *Vellozia squalida* Mart. ex Schult. f. in R. & S. *Syst.* 7: 292. 1826.
BRAZIL: Minas Gerais: Serra do Cipó.
27. *Vellozia aloifolia* Mart. *Nov. Gen. & Sp.* 1: 15, pl. 7. 1823.
BRAZIL: Minas Gerais: Serra de Itambé. Tejuco. Diamantina.
28. *Vellozia viannae* L. B. Smith, sp. nov. PLATE 9, FIGURE 1

A *V. variabile* Mart. ex Schult. f., cui affinis, ovario omnino regulariterque glanduloso differt.

Caudex simple (?), terete and 5 cm. in diameter (including the old leaf-sheaths); leaves many-ranked, very densely imbricate; leaf-sheaths oblong, over 4 cm. long, very densely nerved, dark castaneous with a thin stramineous margin, the apices recurved with age; leaf-blades over 20 before falling, linear, filiform-acuminate, imperfectly known but probably 5 dm. long, 15 mm. or wider, setose-serrate on the scarcely thickened margins, otherwise glabrous, densely nerved, the keel broad but not prominent; scapes slender, 12–15 cm. long, densely dark-glandular toward apex; ovary ellipsoid, 8–10 mm. long, densely and finely dark-glandular throughout; tepals elliptic, rounded and apiculate, 45 mm. long, stamens ca. 18, the phalanges appendaged; anthers subequal, 11 mm. long.

Type in the U.S. National Herbarium, No. 2323056, collected 6 kilometers north of Palácio, Serra do Cipó, Município of Jaboticatubas, State of Minas Gerais, Brazil, October 1953, by F. Segadas-Vianna and J. Lorêdo, Jr. (No. Serra-II, 1103).

29. *Vellozia glandulifera* Goeth. & Henr. *Blumea* 2: 372. 1937.
BRAZIL: Minas Gerais: Cachoeira.
30. *Vellozia scoparia* Goeth. & Henr. *Blumea* 2: 380. 1937.
BRAZIL: Minas Gerais: Parauna and Tejuco. Cachoeira.
31. *Vellozia pilosa* Goeth. & Henr. *Blumea* 2: 377. 1937.
BRAZIL: Minas Gerais: Diamantina.
32. *Vellozia taxifolia* (Mart. ex Schult. f.) Mart. ex Seubert in Mart. *Fl. Bras.* 3, pt. 1: 75. 1847.
Xerophyta taxifolia Mart. ex Schult. f. in R. & S. *Syst.* 7: 291. 1826.
BRAZIL: Minas Gerais: Serra do Cipó. Serra Frio.
33. *Vellozia declinans* Goeth. & Henr. *Blumea* 2: 369. 1937.
BRAZIL: Minas Gerais: Serra da Lapa.
34. *Vellozia barbata* Goeth. & Henr. *Blumea* 2: 366. 1937.
BRAZIL: Minas Gerais: Diamantina.
35. *Vellozia pleurocarpa* Goeth. & Henr. *Blumea* 2: 377. 1937.
BRAZIL: Minas Gerais: Biribiri near Diamantina.
36. *Vellozia leptopetala* Goeth. & Henr. *Blumea* 2: 374. 1937.
BRAZIL: Minas Gerais: Biribiri near Diamantina.
37. *Vellozia resinosa* Mart. ex Schult. f. in R. & S. *Syst.* 7: 293. 1826, emend. L. B. Smith.

Ab omnibus speciebus sectionis *Velloziae* vaginis foliorum apice albo-lanatis, laminis subtus subdense setosis, et ovario dense glanduloso differt.

Caudex simple, very short, terete and 2 cm. in diameter (including the old leaf-sheaths); leaves densely many-ranked; sheaths suboblong, 35 mm. long, dark castaneous with a pale thin margin, lustrous, the exposed apex densely white-lanate, remaining entire; blades about 12 before falling, suberect, linear, subacute, more or less complicate, 15 cm. long, 10 mm. wide, glabrous above, subdensely setose beneath, ciliate; scapes 1-2, slender, 13-15 cm. long, densely dark-glandular toward apex; ovary globose, densely dark-glandular; tepals elliptic, obtuse, 50 mm. long, purple; stamens ca. 12, 15 mm. long.

BRAZIL: Minas Gerais: *Martius* (M, type; F, photo no. 18982). Serra do Cipó, between km. 111 and 128, alt. 1140 m., December 20, 1959, *Maguire & Pires* 44694 (NY, US).

38. *Vellozia brevifolia* Seubert in Mart. *Fl. Bras.* 3, pt. 1: 84, pl. 10, fig. 2. 1847.
BRAZIL: Without locality.
39. *Vellozia epidendroides* Mart. ex Schult. f. in R. & S. *Syst.* 7: 292. 1826.
? *Vellozia variegata* Goeth. & Henr. *Blumea* 2: 381. 1937.
BRAZIL: Minas Gerais: Serra do Cipó. Diamantina. Carangola.
40. *Vellozia minima* Pohl, *Pl. Bras.* 1: 119, pl. 94. 1827.
BRAZIL: Minas Gerais: Itambé. Serra do Cipó. Diamantina. Guinda.
41. *Vellozia streptophylla* L. B. Smith, sp. nov.

PLATE 2; PLATE 9, FIGURES 2, 3

A *V. minima* Pohl, cui affinis, caulibus validioribus, laminis foliorum valde contortis latioribus longe setosis differt.

Caudex erect, much branched, less than 2 dm. high, 7 mm. in diameter; leaves more than 3-ranked, densely imbricate; sheaths very closely nerved, glabrous, erect, entire in age; blades linear, narrowly obtuse, 3 cm. long, 3 mm. wide, subdensely setose, at first erect but recurved and contorted with age, long-persistent; scapes solitary but soon axillary and long-persistent, 25 mm. long, very slender, glandular especially toward apex; capsule globose, 5–6 mm. long, subdensely and evenly glandular; tepals, stamens, and style unknown.

Type in the New York Botanical Garden, collected in the vicinity of Diamantina, State of Minas Gerais, Brazil, 1840, by George Gardner (No. 5233).

42. *Vellozia cryptantha* Seubert in Mart. Fl. Bras. 3, pt. 1: 80. 1847.

BRAZIL Minas Gerais: Diamantina.

43. *Vellozia ramosissima* L. B. Smith, sp. nov. PLATE 9, FIGURES 4, 5

V. asperula Mart. atque *V. leptopetala* Goeth. & Henr. affinis, a priore foliis retusis, earum vaginis vetustis integris, a posteriore foliorum vaginis vix exsertis, a ambobus caudice maxima ramosissima, foliorum laminis latioribus distinguenda.

Caudex to 2 meters high, slender, the branches 1 cm. in diameter including the old leaf-sheaths; leaves many-ranked, very densely imbricate, the complete ones about 10 at the apex of each branch; sheaths very closely nerved, broadly ovate, amplexicaul, ca. 4 cm. long, glabrous, remaining entire; blades linear, deeply and asymmetrically retuse, 7–9 cm. long, 5 mm. wide, densely nerved, obscurely serrulate on the margins and keel; scapes solitary, about equaling the leaves, decurved at apex with age, slender, trigonous, deeply sulcate, scabrous especially toward apex; capsule stoutly ellipsoid, 12–14 mm. long, subdensely scabrous with fine pale subacute trichomes; tepals linear-spatulate, acute, 23 mm. long; stamens 15–20.

Type in the U.S. National Herbarium, No. 2340340, collected on the Serra do Cipó 2½ miles from Hotel Chapeu de Sol, Minas Gerais, Brazil, altitude 1110 meters, December 19, 1959, by Bassett and Celia K. Maguire and J. Murça Pires (No. 44666). Isotype in the New York Botanical Garden.

44. *Vellozia asperula* Mart. Nov. Gen. & Sp. 1: 15, pl. 8. 1823.

44a. *Vellozia asperula* var. *asperula*

Vellozia papillosa Pohl, Pl. Bras. 1: 128. 1827.

Leaf-blades 12–20 cm. long, about equaling the flowers to somewhat exceeding them, 3–4 mm. wide.

BRAZIL: Minas Gerais: Tres Barras. Tejuco. Itambé.

44b. *Vellozia asperula* var. *filifolia* L. B. Smith, var. nov.

A var. *asperula* foliis valde elongatis flores superantibus, laminis angustissimis differt.

Leaf-blades over 30 cm. long, much exceeding the flowers, only 1 mm. wide.

Type in the New York Botanical Garden, collected on the Serra do Caraça, State of Minas Gerais, Brazil, January 18, 1921, by F. C. Hoehne (No. 5025 in hb. SP).

45. *Vellozia punctulata* Seubert in Mart. Fl. Bras. 3, pt. 1: 82. 1847.

BRAZIL: Bahia.

46. *Vellozia bradei* Schulze-Menz ex Markgraf, Notizblatt 15: 215. 1940.

BRAZIL: Minas Gerais: East of Montes Claros and north of Grão Mogul.

47. *Vellozia piresiana* L. B. Smith, sp. nov. PLATE 9, FIGURES 6, 7

A *V. ornata* Mart. ex Schult. f., cui affinis, foliorum vaginis vix fissis, laminis integris latis differt.

Caudex branching, terete and 3 cm. in diameter (including the old leaf-sheaths); leaves many-ranked, very densely imbricate; leaf-sheaths 4 cm. long, stramineous, lustrous, remaining entire, the nerves nearly contiguous; blades about 15 before falling, erect, linear, attenuate to an obtuse asymmetric apex, 18 cm. long, 12 mm. wide, glabrous, glaucous beneath, the thickened margins entire; scapes slender, to 13 cm. long above the leaf-sheaths, scabrous especially toward apex; ovary ellipsoid, subdensely scabrous; tepals 20 mm. long, violet (! Black & Pires); stamens 15 (?); ovary 13 mm. long.

Type in the Instituto Agrônômico do Norte, No. 69981, collected on the Serra do Cipó at kilometer 132, State of Minas Gerais, Brazil, April 4, 1951, by G. A. Black and J. M. Pires (No. 51-12157).

48. *Vellozia ornata* Mart. ex Schult. f. in R. & S. Syst. 7: 293. 1826.

BRAZIL: Minas Gerais.

49. *Vellozia granulata* Goeth. & Henr. Blumea 2: 373. 1937.

BRAZIL: Minas Gerais: Curalinho near Diamantina. Biribiri near Diamantina.

50. *Vellozia flavicans* Mart. ex Schult. f. in R. & S. Syst. 7: 293. 1826.

Vellozia squamata Pohl, Pl. Bras. 1: 124, pl. 99. 1827.

BRAZIL. Minas Gerais: Itambé. Goiás: Serra Dourada. Anapolis.

51. *Vellozia glauca* Pohl, Pl. Bras. 1: 125, pl. 100. 1827.

- 51a. *Vellozia glauca* var. *glauca*

Vellozia glauca var. *genuina* Seubert in Mart. Fl. Bras. 3, pt. 1: 79. 1847.

Vellozia hamosa Pohl ex Seubert in Mart. Fl. Bras. 3, pt. 1: 79. 1847.

Nomen.

Scape elongate, completely glabrous.

BRAZIL: Goiás: Aldea Carretão de Pedro Terceiro. Chapada dos Veadeiros.

- 51b. *Vellozia glauca* var. *cujabensis* Seubert in Mart. Fl. Bras. 3, pt. 1: 79. 1847.

Scape short, furfuraceous-hirsute toward apex.

BRAZIL: Mato Grosso: Cuyaba.

52. *Vellozia glochidea* Pohl, Pl. Bras. 1: 129. 1827.

BRAZIL: Goiás: Serra Dourada. Rio Araguáia.

53. *Vellozia gardneri* Goeth. & Henr. Blumea 2: 371. 1937.

BRAZIL: Goiás: Natividade.

54. *Vellozia crassicaulis* Mart. ex Schult. f. in R. & S. Syst. 7: 292. 1826.

Vellozia albiflora Pohl, Pl. Bras. 1: 121, pl. 96. 1827.

BRAZIL: Minas Gerais: Arraial da Nossa Senhora de Penha. Mendanha.

55. *Vellozia sulphurea* Pohl, Pl. Bras. 1: 120, pl. 95. 1827.

BRAZIL: Minas Gerais: Arraial de São João Baptista. Between Tapanhoacanga and Padre Bento.

56. *Vellozia seubertiana* Goeth. & Henr. Blumea 2: 380. 1937.

BRAZIL: Mato Grosso: Cuyaba; Buriti in the Serra da Chapada.

57. *Vellozia froesii* L. B. Smith, sp. nov.

PLATE 3

A *V. seubertiana* Goeth. & Henr., cui verisimiliter affinis, pedunculo elongato, muricibus ovarii acute truncatis differt.

Caudex and leaf-sheaths unknown but undoubtedly large; leaf-blade linear, filiform-acuminate, to 75 cm. long, 15 mm. wide, antrorsely spinulose-serrate on the pale margins, glabrous; scapes slender, 20–40 cm. long, densely spinulose toward apex; ovary ellipsoid, terete, 20 mm. long, completely covered with slenderly cylindric sharply truncate trichomes; tepals elliptic-spatulate, to 10 cm. long; stamens numerous, shorter than the style; style 7 cm. long.

Type in the Instituto Agronômico do Norte, No. 15,405, collected at Mucugê, Serra da Sincorá, State of Bahia, Brazil, February 1943, by Ricardo de Lemos Fróes (No. 19980). Same, Fróes 19979 (NY, paratype).

58. *Vellozia hypoxoides* L. B. Smith, sp. nov.

PLATE 9, FIGURE 8

A *V. pumila* Goeth. & Henr., cui verisimiliter affinis, foliorum marginibus carinaque ciliatis, tepalis subduplo minoribus differt.

Caudex simple or once-branched, 4–10 cm. long, terete and 1 cm. in diameter (including the old leaf-sheaths); leaves densely few-ranked; leaf-sheaths ca. 2 cm. long, dull, with age splitting into coarse fibers; leaf-blades about 10 before falling, recurving, linear, acuminate, 10–11 cm. long, 4 mm. wide, mostly conduplicate, finely ciliate on the margins and keel, otherwise glabrous, densely nerved on both sides; scapes 1–3, very slender, 3–5 cm. long above the leaf-sheaths, densely and finely contorted-setose toward apex; ovary ellipsoid, 5 mm. long, covered with subulate contorted stramineous trichomes; tepals elliptic, obtuse, 2 cm. long, violet; stamens ca. 15, phalanges unappendaged; capsule to 10 mm. long.

Type in the U.S. National Herbarium, No. 2249220, collected on the Serra dos Pirineus, Município of Corumbá, State of Goiás, Brazil, February 17, 1956, by Amaro Macedo (No. 4330). Isotype in the Instituto Agronômico do Norte.

59. *Vellozia pumila* Goeth. & Henr. Blumea 2: 378. 1937.

BRAZIL: Goiás: Ponte Alta.

60. *Vellozia swallenii* L. B. Smith, sp. nov.

PLATE 9, FIGURES 9, 10

A *V. pumila* Goeth. & Henr., cui verisimiliter affinis, foliorum marginibus carinaque integris glabrisque, tepalis subduplo majoribus differt.

Caudex incompletely known, branched, terete and 2 cm. in diameter including the old leaf-sheaths; leaves densely few-ranked; leaf-sheaths ca. 4 cm. long, castaneous, lustrous, soon becoming pectinate-fibrous by the persistence of fine cross-strands on the separating nerves; leaf-blades 7-10 before falling, suberect, linear, acuminate, 30 cm. long, 7 mm. wide, entire, wholly glabrous, the margins thickened, pale; scape solitary, slender, 4 cm. long above the leaf-sheaths, trigonous, densely and finely pale-setose toward apex; ovary ellipsoid, 8 mm. long, covered with pale subulate contorted trichomes; tepals linear-elliptic (?), 80 mm. long; stamens 3 on the unappendaged phalange.

Type in the U.S. National Herbarium, No. 1592031, collected on chapada (dry brushy field), between Barra do Corda and Grajaú, State of Maranhão, Brazil, March 1-5, 1934, by Jason R. Swallen (No. 3617).

61. *Vellozia bulbosa* L. B. Smith, sp. nov.

PLATE 4

A *V. pumila* Goeth. & Henr., cui verisimiliter affinis, planta acaule, foliorum vaginis haud fissis, laminis integris glabrisque, tepalis majoribus differt.

Stemless; leaf-bases forming an irregularly ovoid bulb, 25 mm. long, castaneous, lustrous, densely nerved; blades about 10 before falling, suberect, curved, linear, acuminate, to 24 cm. long, 6 mm. wide, conduplicate, glabrous, the keel and margins pale, thickened, entire; scapes 1-2, slender, 2-3 cm. long above the leaf-sheaths, densely setose-scabrous toward apex; ovary obovoid, 7-9 mm. long, covered with fine subulate contorted stramineous trichomes; tepals linear-elliptic (?), 60 mm. long, pale violet; capsule globose, 18 mm. in diameter, the trichomes becoming thickened and conical.

Type in the Instituto Agronômico do Norte, collected on rocks in savanna, Serra do Cachimbo, State of Pará, Brazil, altitude 425 meters, December 17, 1956, by J. M. Pires, G. A. Black, J. J. Wurdack, and N. T. Silva (No. 6423).

62. *Vellozia cinerascens* Mart. ex Schult. f. *in* R. & S. Syst. 7: 292. 1826.

BRAZIL: Pernambuco: Capoculo. Santa Isabella.

63. *Vellozia circinans* Goeth. & Henr. Blumea 2: 367. 1937.

BRAZIL: Minas Gerais: São João del Rei. Pico da Sander or Pico du Suspiro. Cachoeira do Campo. Serra da Lapa.

64. *Vellozia dasypus* Seubert *in* Mart. Fl. Bras. 3, pt. 1: 81. 1847.

BRAZIL: Bahia: Jacobina. São Salvador. Serra Sincorá.

Further collections may show that this is no more than a variety of *V. cinerascens* which differs only in its glabrous scape. The supposed difference of stamen number is not borne out in the descriptions of the two species in "Flora Brasiliensis."

65. *Vellozia glaziovii* Goeth. & Henr. Blumea 2: 372. 1937.

BRAZIL: Goiás: Serra dos Veadeiros.

66. *Vellozia crinita* Goeth. & Henr. *Blumea* 2: 368. 1937.
BRAZIL: Minas Gerais: São João del Rei.
67. *Vellozia caruncularis* Mart. ex Seubert *in* Mart. *Fl. Bras.* 3, pt. 1: 78, pl. 8, fig. 1. 1847.
BRAZIL: Minas Gerais: Serra do Cipó. Serra do Garimpo. Serra Rola Moça.
68. *Vellozia gracilis* Seubert *in* Mart. *Fl. Bras.* 3, pt. 1: 81, pl. 9. 1847.
BRAZIL: Minas Gerais.
69. *Vellozia grisea* Goeth. & Henr. *Blumea* 2: 373. 1937.
BRAZIL: Between Goiás and Cuyaba.
70. *Vellozia exilis* Goeth. & Henr. *Blumea* 2: 370. 1937.
BRAZIL: Goiás: Chapadão dos Viadeira (?Veadeiros).

Section II. Radia

71. *Vellozia uaipanensis* (Maguire) L. B. Smith, comb. nov.
Barbacenia uaipanensis Maguire, *Mem. N.Y. Bot. Gard.* 9: 477, fig. 117. 1957.
VENEZUELA: Bolívar: Uaipán-tepuí.
72. *Vellozia markgrafi* Schulze-Menz ex Markgraf, *Notizblatt* 15: 216. 1940.
BRAZIL: Minas Gerais: East of Montes Claros.
73. *Vellozia riedeliana* Goeth. & Henr. *Blumea* 2: 379. 1937.
BRAZIL: Minas Gerais: Serra da Lapa.
74. *Vellozia maguirei* L. B. Smith, sp. nov. PLATE 5

A *V. markgrafi* Schulze-Menz ex Markgraf et *V. riedeliana* Goeth. & Henr., quibus affinis, foliis subtus glabris, pedunculo majore differt.

Caudex to 1 meter high (!Maguire), amount of branching unknown, terete and 3 cm. in diameter at apex (including the old leaf-sheaths); leaf-sheaths 4 cm. long, connate in a funnel for 2 cm., lustrous, densely granular-resinous, densely nerved, the nerves soon separating as coarse fibers; leaf-blades about 12 before falling, suberect, linear, filiform-attenuate, to 28 cm. long, 10 mm. wide at base, densely nerved, resinous, minutely lepidote-ciliate at base on the keel and thickened margins, otherwise glabrous; scape solitary (?), 3 cm. long, glabrous; flowers white; perianth-tube slenderly cylindric and 8 cm. long above the ellipsoid 1 cm. long ovary, 5 mm. in diameter, subdensely glandular; ovary covered with short cylindric gland-tipt trichomes; tepals elliptic, to 5 cm. long.

Type in the U.S. National Herbarium, No. 2340339, collected 49 miles from Diamantina, State of Minas Gerais, Brazil, altitude 1140 meters (3800 feet), December 22, 1959, by Bassett Maguire, C. K. Maguire and J. Murça Pires (No. 44742). Isotype in the New York Botanical Garden.

75. *Vellozia candida* Mikan, *Delect. Fl. & Faun. Brazil.* 2: pl. 1. 1820; text 1825.
Vellozia tertia Spreng. *Neu. Entd.* 2: 108. 1821.
? *Vellozia maritima* Vell. *Fl. Flum.* 219. 1825; *Icon.* 5: pl. 79. 1835. (Rocks, Island of Parati).
BRAZIL: Guanabara: Tijuca. Dois Irmãos. Penha. Corcovado.

76. *Vellozia macrantha* Lem. Ill. Hort. 12: Misc. 41. 1865.

BRAZIL: Without locality.

77. *Vellozia leucanthos* Goeth. & Henr. 2: 375. 1937.

BRAZIL: Minas Gerais: Caraça.

78. *Vellozia cachimbensis* L. B. Smith, sp. nov.

PLATE 6

A *V. macrosiphonia* Taub., cui verisimiliter affinis, caudice brevissimo, pedunculos folias subaequantibus differt.

Plant stemless or sometimes with a caudex up to 4 cm. long and 2 cm. in diameter (including the old leaf-sheaths); leaves densely many-ranked; sheaths ca. 2 cm. long, castaneous, lustrous, white, separating into coarse fibers at apex; blades 20-30 before falling, suberect to spreading, linear, filiform-attenuate, to 14 cm. long, 6 mm. wide, densely nerved, glabrous above, typically lepidote-pilose beneath, setose-ciliate; scape solitary, very slender, about equaling the leaves, densely stipitate glandular toward apex; flowers white (! Pires); perianth-tube slenderly cylindric and 45-65 mm. long above the ellipsoid 5 mm. long ovary, 1-2 mm. in diameter, rather densely glandular; ovary covered with subsessile glands; tepals 4 cm. long; stamens 12 (! Pires).

Type in the Instituto Agronômico do Norte, No. 90.910, collected on rocks, Serra do Cachimbo, State of Pará, Brazil, altitude 425 meters, December 14, 1956, by J. M. Pires, G. A. Black, J. J. Wurdack, and N. T. Silva (No. 6232).

79. *Vellozia macarenensis* Philipson in Schultes, Fam. Velloz. Colomb. in Rev. Acad. Colomb. Cienc. 8, No. 32: 461, pl. 1952.

COLOMBIA: Meta: Sierra de la Macarena.

80. *Vellozia macrosiphonia* Taub. Bot. Jahrb. 21: 424. 1896.

BRAZIL: Goiás: Serra dos Pirineus. Serra Dourada. Serra dos Viadeiros.

81. *Vellozia maculata* Goeth. & Henr. Blumea: 2: 375. 1937.

BRAZIL: Goiás: Cachoeiras da Vargem Grande da Serra da Balisa.

82. *Vellozia machrisiana* L. B. Smith, sp. nov.

PLATE 9, FIGURES 11, 12

A *V. leucantho* Goeth. & Henr., cui affinis, foliis scapoque multo majoribus, foliorum vaginis vetustis haud vel vix fissis differt.

Low, only fruiting material known; caudex simple (?), more or less prostrate (! Dawson), 15 cm. long, terete, 1 cm. in diameter near apex; leaves 3-ranked, very densely imbricate, the complete ones about 12 at the apex of the stem; sheaths sulcate, densely white-sericeous beneath except for the narrow brown lustrous margin, scarcely if at all divided with age, the apices of the upper ones strongly recurved; blades linear, filiform-acuminate, 27 cm. long, 5.5 mm. wide at base, densely and strongly nerved on both sides, otherwise even, ciliate toward base on the thickened margins and rounded keel, otherwise glabrous; scape solitary, extending 18 cm. above the leaf-sheaths, obtusely trigonous, very sparsely vestite toward apex with minute stipitate black glands, capsule ellipsoid, 12 mm. long, strongly

3-lobed, completely covered with minute ovoid gland-tipt trichomes; remains of the perianth-tube slenderly cylindric, 8 cm. long, sparsely and minutely sessile-glandular near base.

Type in the U.S. National Herbarium, No. 2280629, collected on rocks in stream below falls (subject to running water), sandstone area 14 kilometers south of Veadeiros, region of the Chapada dos Veadeiros, ca. lat. 14°30' S., long. 47°30' W., State of Goiás, Brasil, April 25, 1956, by E. Yale Dawson (No. 14674).

83. *Vellozia uleana* L. B. Smith, sp. nov. PLATE 9, FIGURES 13, 14

A *V. leucantho* Goeth. & Henr., cui affinis, vaginalum nervis subcontiguus, foliis in apicem filiformem attenuatis, ovarii glandulis graciliter stipitatis differt.

Caudex over 23 cm. long, branching at least once, terete and 1 cm. in diameter (including the old leaf-sheaths); leaf-sheaths 4 cm. long, dull, densely nerved, remaining entire and not splitting into fibers, recoiling at apex; leaf-blades about 12 before falling, suberect to spreading, linear, filiform-attenuate, to 25 cm. long, 6 mm. wide, densely nerved, setose-ciliate on the keel and thickened margins when young, glandular-punctate above, glabrous beneath; scape solitary, 9 cm. long above the leaf-sheaths, slender, subdensely stipitate-glandular toward apex; flowers white; perianth-tube slenderly cylindric and 5–7 cm. long above the ellipsoid 8 mm. long ovary, 1.5 mm. in diameter, subdensely glandular; ovary covered with slender gland-tipt trichomes; tepals 4 cm. long.

Type in the Museu Paraense "Emilio Goeldi," No. 13.447, collected on rock faces of the Serra de Uairary (?Mairari), Surumú, Territory of Rio Branco, Brazil, altitude 1000–1200 meters, September 1909, by E. Ule (No. 8372). Isotypes in the New York Botanical Garden and U.S. National Herbarium.

84. *Vellozia panamensis* Standl. Journ. Washington Acad. Sci. 15: 457. 1925.
PANAMA: Chiriquí: Cerro Vaca.

85. *Vellozia phantasmagoria* R. E. Schultes, Bot. Mus. Leafl. Harvard 12: 130, pl. 19, 20. 1946.
COLOMBIA: Vaupés: Mount Chiribiquete.

86. *Vellozia dumitiana* R. E. Schultes, Mutisia No. 12: 2, pl. 1952.
COLOMBIA: Vaupés: Cerro Isibukuri.

87. *Vellozia rhynchocarpa* Goeth. & Henr. Blumea 2: 378. 1937.
BRAZIL: São Paulo: Between Canna Verde and Cajura near Mato Grosso.

88. *Vellozia maudeana* R. E. Schultes, Bot. Mus. Leafl. Harvard 16: 198, pls. 29, 30. 1954.
COLOMBIA: Vaupés: Mesa de Yambí.

89. *Vellozia annulata* Goeth. & Henr. Blumea 2: 365. 1937.
BRAZIL: Goiás: Cachoeira da Vargem Grande. Serra dos Veiadados (?Veadeiros).

90. *Vellozia velutinosa* Goeth. & Henr. Blumea 2: 382. 1937.
BRAZIL: Goiás: Cabeceira (headwaters) do Rio Santa Ana.

91. *Vellozia dawsonii* L. B. Smith, sp. nov.

PLATE 7

A *V. velutinoso* Goeth. & Henr., cui verisimiliter affinis, foliorum laminis subduplo latioribus, floribus haud solitariis differt.

Caudex incompletely known, 25 mm. in diameter (including the old leaf-sheaths); leaves densely many-ranked; sheaths 4 cm. long, densely white-lanate; blades over 30 before falling, linear-triangular, filiform-attenuate, 20 cm. long, 17 mm. wide, finely lepidote-pilose on both sides, flat, densely and minutely ciliate; scapes at least 3 together, slender, about equaling the leaves, densely stipitate-glandular toward apex; flowers white; perianth-tube slenderly cylindric, 70–80 mm. long above the ellipsoid 10 mm. long ovary, 4–5 mm. in diameter, subdensely glandular; ovary covered with slenderly stipitate glands; tepals elliptic, acute, 7 cm. long; anthers 15 mm. long.

Type in the U.S. National Herbarium, No. 2279791, collected on sandstone outcrop 7 kilometers south of Veadeiros, region of the Chapada dos Veadeiros, ca. lat. 14°30' S., long. 47°30' W., State of Goiás, Brasil, April 24, 1956, by E. Yale Dawson (No. 14580).

92. *Vellozia cana* Goeth. & Henr. *Blumea* 2: 367. 1937.

BRAZIL: Goiás: Paranana.

93. *Vellozia lithophila* R. E. Schultes, *Fam. Velloz. Colomb. in Rev. Acad. Colomb. Cienc.* 8, No. 32: 459, pl. 1950.

COLOMBIA: Vaupés: Mesa La Lindosa. San José del Guaviare. Cerro Yapobodá. Cerro Kañendá. Rio Parana Pichuna.

94. *Vellozia tubiflora* (A. Rich.) H. B. K. *Nov. Gen. & Sp.* 7: 155. 1824.

Radia tubiflora A. Rich. *in Kunth, Syn. Pl. Acq.* 1: 300. 1822.

Barbacenia alexandrinae Rob. Schomb. *Barbacenia Alexandrinae* 13, pl. 1845; Rob. Schomb. *ex Hook. London Journ. Bot.* 4: 13. 1845.

Barbacenia tubiflora Jackson, *Ind. Kew.* 4: 1269. 1895. Wrongly attributed to Benth. & Hook. *Gen.* 3: 740. 1883, who made the combination only inferentially and not validly.

Vellozia alexandrinae Goeth. & Henr. *Blumea* 2: 363. 1937.

VENEZUELA: Amazonas and Bolívar. Brazil: Pará. British Guiana.

The only distinction encountered in the descriptions of *Vellozia tubiflora* and *V. alexandrinae* is the height and branching of the caudex. *Vellozia tubiflora* from along the Rio Orinoco is described as low and slightly branched while *V. alexandrinae* from Mount Roraima is 3 to 4 meters high and much branched. However, Dr. J. J. Wurdack, who has observed *V. tubiflora* in the type area, assures me that it varies according to age and attains great size also.

2. *Barbaceniopsis*

Barbaceniopsis L. B. Smith, gen. nov.

Caulescens, simplex vel ramosus; caudice foliorum vaginis vetustis omnino obtecto; foliis novellis terminalibus, laminis linearibus, haud

regulariter deciduis; scapis terminalibus, unifloris; tepalis 6, subaequalibus, tubum epigynum formantibus; staminibus 6; filamentis brevissimis, teretibus, haud appendiculatis; antheris dorsifixis; ovario infero; styli parte stigmatifera subcylindrica.

Type species: *Barbaceniopsis boliviensis* (Baker) L. B. Smith.

Key to the Species of *Barbaceniopsis*

1. Leaf-blades even, cinereous beneath, 2–2.5 mm. wide; all tepals merely acute **1. B. boliviensis**
 1. Leaf-blades carinate, green beneath, 3.5 mm. wide; outer tepals long-aristate **2. B. vargasiana**

1. *Barbaceniopsis boliviensis* (Baker) L. B. Smith, comb. nov.

PLATE 9, FIGURES 15, 16

Vellozia boliviensis Baker, Mem. Torrey Bot. Club 6: 126. 1896.

Barbacenia boliviensis Hauman, Anal. Mus. Nac. Hist. Nat. Buenos Aires 29: 429. 1917.

Barbacenia castilloni Hauman, Anal. Mus. Nac. Hist. Nat. Buenos Aires 29: 426, pl. 4. 1917.

BOLIVIA: Cochabamba: Near Cochabamba, *Bong* 1134 (K, type; US). Tarija: La Merced near Bermejo, alt. 1700 m., *Fiebrig* 2505 (F).

ARGENTINA: Salta: Cafayate, alt. 1400 m., November 24, 1949, *Araque & Barkley* 19–Ar–366 (F). Same, alt. 1700 m., February 10, 1953, *Hayward* 2512 (US). Jujuy: Tumbaya, Volcan to Loma del Tambo, alt. 2500 m., February 22, 1924, *Schreiter* 2561 (US from hb. Venturi 3445). Tilcara, alt. 2300 m., February 20, 1926, *Venturi* 6847 (US). Capital, Quebrada de Chañi, alt. 1600 m., January 30, 1940, *Schreiter* 10959 (UC). Tucumán: Tafi, El Bañado, Quebrada de las Cañas, alt. 2140 m., February 1913, *Castillon* 3245 (BA). Calchaquies, El Bañado, Quebrada de las Cañas, alt. 2200 m., January 10, 1917, *Castillon* 58 (US).

Note: I have not examined the type of *Barbacenia castilloni* Hauman, but other material from the same region shows no essential difference from *Vellozia boliviensis* Baker.

2. *Barbaceniopsis vargasiana* (L. B. Smith) L. B. Smith, comb. nov.

Barbacenia vargasiana L. B. Smith, Bol. Soc. Peru Bot. 1: 13, figs. 1, 2. 1948.

PERU: Cuzco: Anta, between Sisal and Cunyac, *Vargas* 4883 (GH, type; US).

3. *Barbacenia*

Barbacenia Vand. Fl. Lusit. & Brasil. Spec. 21, pl. 1. 1788.

Pleurostima Raf. Fl. Tellur. 2: 97. 1836.

Visnea Steud. ex Endl. Gen. 173. 1837. Nomen in synonymy.

Plants of small or medium stature; caudex usually simple or few-branched; leaf-blades breaking off irregularly; tepals forming an epigynous tube; stamens 6; filaments evident, flat with 2 lobes or appendages at the summit; anthers dorsifixed; stigmas inconspicuous, not peltate nor broadly lobed.

Type species: *Barbacenia brasiliensis* Willd.

Keys to the Species of *Barbacenia*

1. Perianth-tube not more than twice as long as the ovary.
 2. Ovary section of the perianth partly or wholly glabrous, the costae evident (lacking in *B. beauverdii*) SUBKEY I
 2. Ovary section of the perianth wholly vestite SUBKEY II
1. Perianth-tube more than twice as long as the ovary SUBKEY III

SUBKEY I

1. Perianth-tube completely glabrous.
 2. Tube of the perianth smooth, ecostate 1. *B. beauverdii*
 2. Tube of the perianth costate.
 3. Costae of the perianth 18; caudex very short; leaf-blades 11 cm. long, 10 mm. wide 2. *B. brachycalyx*
 3. Costae of the perianth 12; caudex to 30 cm. long; leaf-blades 7-8 cm. long, 2.5 mm. wide 3. *B. caricina*
1. Perianth-tube vestite on the costae.
 4. Indument of the perianth of pointed trichomes, eglandular.
 5. Anthers twice as long as the filaments 4. *B. squamata*
 5. Anthers exceeded by the filament-appendages.
 6. Tepals 40 mm. long, ample; leaf-blades 9 mm. wide . . . 5. *B. rogeri*
 6. Tepals 20-30 mm. long, narrow.
 7. Leaf-blades 5 mm. wide 6. *B. gaveensis*
 7. Leaf-blades 7-9 mm. wide 7. *B. seubertiana*
 4. Indument of the perianth of sessile (verruculose) or of stipitate glands.
 8. Anthers equaling or exceeding the filament-appendages.
 9. Leaf-blades 2 mm. wide; perianth-tube 8 mm. long.
 8. *B. stenophylla*
 9. Leaf-blades 6-18 mm. wide; perianth-tube 13-20 mm. long.
 10. Perianth-tube about twice as long as the ovary; leaf-blades 12-18 mm. wide 9. *B. inclinata*
 10. Perianth-tube not more than half again as long as the ovary.
 11. Scape 35 cm. long; leaf-blades 10-18 mm. wide.
 10. *B. longiscapa*
 11. Scape ca. 15 cm. long; leaf-blades 4-11 mm. wide.
 11. *B. flavida*
 12. Leaf-blades 4-8 mm. wide.
 13. Tepals glandular-punctate; costae wholly covered by black stipitate glands 12. *B. irwiniana*
 13. Tepals glabrous; costae laxly glandular or the intermediate ones glabrous.
 14. Filaments 7-8 mm. long, only slightly shorter than the anthers; leaves distributed along the stem.
 13. *B. foliosa*
 14. Filaments ca. 4 mm. long, about half as long as the anthers; leaves clustered at apex of stem (perianth-tube described as glandular, but not so depicted) . . (4. *B. squamata*)
 8. Anthers exceeded by the filament-appendages.
 15. Scape 1 cm. long; perianth-tube about twice as long as the ovary and forming a slender tube above it; anthers medifixed. . 14. *B. goethartii*

15. Scape elongate; perianth-tube much less than twice as long as the ovary and forming a broad cylinder above it.
16. Leaf-blades 6–8 cm. long, only $\frac{1}{3}$ – $\frac{1}{2}$ as long as the scapes, 2–4 mm. wide; anthers equaling the base of the filament-sinus. **15. B. brevifolia**
16. Leaf-blades more than twice as large, more than half as long as the scape and mostly exceeding it.
17. The leaf-blades entire; costae bearing stipitate glands; style subulate, scarcely dilated by the sigmas . **16. B. mantiqueirae**
17. The leaf-blades denticulate or spinulose-serrate.
18. Tepals 40 mm. long, ample; leaf blades 9 mm. wide (perianth-tube described as glandular, but not so depicted). **(5. B. rogeri)**
18. Tepals 16–20 mm. long, narrow.
19. Leaf-blades with narrow dark margins and keel, denticulate; stigmas apical, making the style slenderly conical. **17. B. nigrimarginata**
19. Leaf-blades concolorous.
20. Stigmas apical on the style, making it clavate; anthers acuminate, exceeding the base of the sinus; leaf-blades denticulate **18. B. gounelleana**
20. Stigmas submedian on the style; anthers rounded-apiculate; leaves spinulose-serrate. **19. B. purpurea**

SUBKEY II

1. Indument of the perianth wholly of pointed trichomes, not glandular.
2. Tepals only about $\frac{1}{3}$ as long as the tube; leaf-blades hirsute beneath. **20. B. schwackei**
2. Tepals 1–2 times as long as the tube; leaf-blades glabrous . . **21. B. fulva**
1. Indument of the perianth glandular, either sessile or stipitate.
3. Scapes up to 12 per rosette; leaves up to 40; sheaths resinous-conglutinated; flowers violet; tepals 4–5 mm. long **22. B. polyantha**
3. Scapes 1–5 per rosette.
4. Leaf-blades uniformly vestite.
5. Ovary trigonous, verrucose **23. B. trigona**
5. Ovary terete or if subtrigonous then covered with stipitate glands.
6. Flowers yellow; perianth-tube 12 mm. long, twice as long as the ovary **24. B. globata**
6. Flowers red to lilac, or white.
7. Glands of the perianth-tube sessile; perianth-tube twice as long as the ovary **25. B. coccinea**
7. Glands of the perianth-tube stipitate.
8. Leaf-indument glandular.
9. Tepals 7 mm. long; flowers red **26. B. glutinosa**
9. Tepals 17–20 mm. long; flowers white . . **27. B. markgrafii**
8. Leaf-indument eglandular.
10. Perianth-tube 25 mm. long; flowers red . . . **28. B. ignea**
10. Perianth-tube 20 mm. long; flowers lilac . . **29. B. lilacina**
4. Leaf-blades glabrous except for the margins and keel.
11. Glands of the ovary sessile; perianth-tube 50 mm. long; anthers medifixed, nearly twice as long as the filaments; flowers yellow . **30. B. vandellii**

11. Glands of the ovary stipitate.
12. Anthers equaling the filament-appendages; flowers yellow. 31. *B. brasiliensis*
12. Anthers exceeding the filament-appendages.
13. Trichomes of the upper scape long, slender, mostly or entirely eglandular; tepals 9–11 mm. long.
14. Flowers deep lilac; leaf-blades 10 mm. wide . 32. *B. hirtiflora*
14. Flowers yellow; leaf-blades 7 mm. wide . . 33. *B. williamsii*
13. Trichomes of the upper scape short, stout, coarsely glandular; tepals 15–17 mm. long.
15. Epigynous tube subcylindric; perianth-tube 20–23 mm. long. 34. *B. flava*
15. Epigynous tube campanulate; perianth-tube 25–32 mm. long.
16. Perianth-tube 32 mm. long; caudex 3–4 dm. high. 35. *B. glauca*
16. Perianth-tube 25 mm. long; caudex very short.
17. Leaf-blades 40 cm. long, 8–10 mm. wide, glaucous. 36. *B. itabirensis*
17. Leaf-blades 9–16 cm. long, 4–7 mm. wide, green (?). 37. *B. sellovii*

SUBKEY III

1. Epigynous tube infundibuliform, distinctly wider at the mouth than at the base.
2. Tepals broadly ovate, as broad as long; perianth-tube 35 mm. long; flowers subsessile 38. *B. macrantha*
2. Tepals oblong, lanceolate, or elliptic, much longer than broad.
3. Perianth-tube 70–75 mm. long.
4. Tepals reflexed, 40 mm. long; perianth-indument eglandular. 39. *B. rubro-virens*
4. Tepals erect, 20 mm. long; perianth-indument glandular. 40. *B. riedeliana*
3. Perianth-tube 30–55 mm. long.
5. Indument of perianth eglandular; perianth-tube 30 mm. long. 41. *B. luzulifolia*
5. Indument of perianth glandular; perianth-tube 50–55 mm. long.
6. Leaf-blades 9 cm. long, 9 mm. wide; ovary 10 mm. long, $\frac{1}{6}$ – $\frac{1}{3}$ of the perianth-tube 42. *B. viscosissima*
6. Leaf-blades 22 cm. long, 17 mm. wide; ovary 17 mm. long, $\frac{1}{3}$ of the perianth-tube 43. *B. paranaensis*
1. Epigynous tube slenderly cylindric or very slightly enlarged toward apex.
7. Indument of the perianth subulate or lacking.
8. Flowers sessile.
9. Tepals broadly elliptic, 10 mm. long; flowers yellow . . 44. *B. exscapa*
9. Tepals linear, 24 mm. long; flowers red . . . 45. *B. gentianoides*
8. Flowers distinctly scapose.
10. Perianth-tube 50–60 mm. long.
11. Ovary $\frac{1}{3}$ of perianth-tube; scape pilose 46. *B. hilairei*
11. Ovary $\frac{2}{3}$ of perianth-tube.
12. Scapes glabrous; perianth-tube 50 mm. long, sparsely pilose on the costae 47. *B. oxytepala*
12. Scapes densely tomentellous toward apex; perianth-tube 60 mm. long, densely and evenly gray-tomentellous . . . 48. *B. grisea*

10. Perianth-tube 30–40 mm. long.
13. Plant completely glabrous; tepals ovate or lance-ovate, acute.
49. *B. glabra*
13. Plant vestite.
14. Filaments less than half as long as the anther; tepals erect, 12 mm. long 50. *B. tomentosa*
14. Filaments as long as or longer than the anther, tepals subspreading to reflexed, 15–26 mm. long.
15. Epigynous tube 10 mm. in diameter; tepals reflexed, obtuse.
51. *B. schidigera*
15. Epigynous tube, 3–6 mm. in diameter; tepals subspreading, acute.
16. Perianth-tube densely pubescent; epigynous tube 4–6 mm. in diameter 41. *B. luzulifolia*
16. Perianth-tube very sparsely pubescent and appearing glabrous; epigynous tube 3 mm. in diameter.
52. *B. graciliflora*
7. Indument of the perianth glandular.
17. Glands of the perianth sessile or subsessile.
18. Leaves glabrous except the margins; perianth-glands sessile; tepals 12 mm. long 53. *B. ensifolia*
18. Leaves evenly pilose; perianth glands subsessile; tepals 23 mm. long.
54. *B. glaziovii*
17. Glands of the perianth long-stipitate.
19. Scape exceeding the leaves, its glandular indument of 2 types.
20. Perianth-tube 3 times as long as the ovary . . . 55. *B. conicostigma*
20. Perianth-tube 4–5 times as long as the ovary . . . 56. *B. cuspidata*
19. Scape equaling or shorter than the leaves.
21. Leaf-blades glabrous except the keel and margins.
22. Perianth-tube 65 mm. long; flower yellow . . . 57. *B. longiflora*
22. Perianth-tube 30–50 mm. long.
23. The perianth-tube 5 times as long as the ovary, straight, ecostate 58. *B. gardneri*
23. The perianth-tube 3 times as long as the ovary, curved, costate.
59. *B. curviflora*
21. Leaf-blades evenly vestite.
24. Filaments linear.
25. Tepals 30–35 mm. long 60. *B. fragrans*
25. Tepals 18–20 mm. long.
26. Leaf-blades 4 mm. wide 61. *B. tricolor*
26. Leaf-blades 10 mm. wide 62. *B. blanchetii*
24. Filaments broad.
27. Sinus of the filament shallow; filaments quadrate, 4 mm. long.
63. *B. mollis*
27. Sinus of the filament deep; filaments oblong or broad-based.
28. Indument of the scape white, contrasting sharply with the dark indument of the perianth-tube; perianth-tube 25 mm. long 64. *B. leucopoda*
28. Indument of the scape and perianth-tube uniformly dark; perianth-tube 30–50 mm. long.
29. Filaments oblong, their sides parallel; anthers 8–9 mm. long; leaf-blades uniformly setose-glandular.

30. Leaf-blades 9 mm. wide; anthers exceeding the filaments by less than $\frac{1}{8}$ 65. *B. blackii*
 30. Leaf-blades 5 mm. wide; anthers exceeding the filaments by $\frac{2}{3}$ 66. *B. rubra*
 29. Filaments broad-based, much contracted upward; anthers 12-15 mm. long, exceeding the filaments by $\frac{3}{4}$ or more.
 31. Ovary rounded at base, broadly obovoid. 67. *B. damaziana*
 31. Ovary long-attenuate at base, slenderly obconic. 68. *B. bahiana*

1. *Barbacenia beauverdii* Damazio, Bull. Herb. Boiss. II. 7: 595, fig. 1907.
 BRAZIL: Minas Gerais: Serra do Frasão.
 2. *Barbacenia brachycalyx* Goeth. & Henr. Blumea 2: 340, fig. A. 1937.
 BRAZIL: Goiás: Pichoa to Morro do Espigão.
 3. *Barbacenia caricina* Goeth. & Henr. Blumea 2: 340, fig. B. 1937.
 BRAZIL: Rio de Janeiro: Nova Friburgo to Pedra do Conego.
 4. *Barbacenia squamata* Hook. Bot. Mag. 71: pl. 4136. 1845.
Vellozia squamata Jackson, Ind. Kew. 4: 1269. 1895, wrongly attributed to Benth. & Hook. Gen. 3: 740. 1883, who made the combination only inferentially and not validly.
 BRAZIL: Rio de Janeiro: Serra dos Orgãos. Guanabara: Morro do Flamengo.
 5. *Barbacenia rogieri* hort. ex Moore & Ayres, Mag. Bot. 2: 209, pl. 1850; Lem. Jard. Fl. 1: pl. 82. 1851.
 SOUTH AMERICA: No locality.
 6. *Barbacenia gaveensis* Goeth. & Henr. Blumea 2: 346. 1937.
 BRAZIL: Guanabara: Gavea. Tijuca.
 7. *Barbacenia seubertiana* Goeth. & Henr. Blumea 2: 360. 1937.
Barbacenia purpurea Hook. var. *minor* Seubert in Mart. Fl. Bras. 3, pt. 1: 68. 1847.
 BRAZIL: Rio de Janeiro: Serra dos Orgãos, Faboinha. Guanabara: Gavea.
 8. *Barbacenia stenophylla* Goeth. & Henr. Blumea 2: 361, fig. F. 1937.
 BRAZIL: Goiás: Morro do Salto.
 9. *Barbacenia inclinata* Goeth. & Henr. Blumea 2: 352. 1937.
 BRAZIL: Minas Gerais: Diamantina.
 10. *Barbacenia longiscapa* Goeth. & Henr. Blumea 2: 355. 1937.
 BRAZIL: Minas Gerais: Serra da Lapa.
 11. *Barbacenia flavida* Goeth. & Henr. Blumea 2: 343. 1937.
 BRAZIL: Minas Gerais. Goiás: Pichoa to Morro do Espigão.
 12. *Barbacenia irwiniana* L. B. Smith, sp. nov. PLATE 10, FIGURES 17, 18

A *B. foliosa* Goeth. & Henr., cui affinis, tepalis glanduloso-punctatis, ovarii costis glandulis nigris stipitatis omnino obtectis differt.

Caudex 3 cm. long with roots almost throughout; leaves numerous, 3-ranked; sheaths ovate, 1 cm. long, very closely nerved, glabrous; blades linear, acuminate, 13-15 cm. long, 4 mm. wide, closely nerved

on both sides, sparsely denticulate on keel and margins, otherwise smooth and glabrous; scape solitary, about equaling the leaves, slender, bearing black stipitate glands especially near apex; perianth-tube 15 mm. long; ovary ellipsoid, the costae covered with black stipitate glands; epigynous tube infundibuliform, 4 mm. high; tepals suberect at anthesis, lanceolate, subacute, 13 mm. long, yellow (Irwin), reddish when dry, the outer slightly narrower; filaments 6 mm. long, the oblong rounded appendages about twice as long as the quadrate base; anthers linear, 8 mm. long, slightly exceeding the filament-appendages.

Type in the U.S. National Herbarium, No. 2324659, collected in narrow crevice among rocks on steep slope, Pico da Bandeira, Serra Caparao, State of Minas Gerais, Brazil, at 2700 meters (9000 feet) altitude, March 3, 1959, by H. S. Irwin (No. 2803).

13. *Barbacenia foliosa* Goeth. & Henr. *Blumea* 2: 344, fig. D. 1937.

BRAZIL: Guanabara: Tijuca.

14. *Barbacenia goethartii* Henr. *Blumea* 2: 350, fig. K. 1937.

BRAZIL: Minas Gerais: Penha (?).

15. *Barbacenia brevifolia* Taub. *Bot. Jahrb.* 12, Beibl. 27: 2. 1890.

BRAZIL: No locality.

16. *Barbacenia mantiqueirae* Goeth. & Henr. *Blumea* 2: 355. 1937.

BRAZIL: São Paulo: Serra da Mantiqueira.

17. *Barbacenia nigrimarginata* L. B. Smith, sp. nov. PLATE 10, FIGURES 19-22

A *B. gounelleana* Beauverd, cui affinis, foliorum vaginis mox in fibras solutis, laminis nigrimarginatis, filamentorum lobis obtusis, antheris filamentorum sinum apicalem haud attingentibus differt.

Caudex only about 2 cm. long; leaves very densely imbricate, glaucous beneath; sheaths 3 cm. long, soon dividing into coarse stiff fibers; blades very narrowly triangular, filiform-acuminate, not at all contracted at base, 25 cm. long, 9 mm. wide, finely and closely nerved on both sides, the thickened margins and keel black and minutely serrulate; scape solitary, 25 cm. long, slender, sulcate, the upper part obscurely glandular; perianth-tube obconic, 17 mm. long, very slightly exceeding the ovary, 5 mm. in diameter, diffusely verruculose; tepals suberect at anthesis, elliptic, obtuse, 22 mm. long, the outer distinctly narrower; filaments narrowly obovate with short rounded lobes, about half as long as the tepals; anthers linear, 6 mm. long, not reaching the base of the sinus.

Type in the U.S. National Herbarium, No. 2279780, collected on stony summit of butte shoulder 5 kilometers west of Veadeiros, region of the Chapada dos Veadeiros, ca. lat. 14°30' S., long. 47°30' W., State of Goiás, Brazil, April 29, 1956, by E. Yale Dawson (No. 14717).

18. *Barbacenia gounelleana* Beauverd, *Bull. Herb. Boiss.* II. 7: 704. 1907.

BRAZIL: Rio de Janeiro: Itatiaia.

19. *Barbacenia purpurea* Hook. Bot. Mag. 54: pl. 2777. 1827.
Pleurostima purpurea (Hook.) Raf. Fl. Tellur. 2: 97. 1836.
 BRAZIL: Guanabara (?): "Neighborhood of Rio de Janeiro."
20. *Barbacenia schwackei* Goeth. & Henr. Blumea 2: 359, fig. J. 1937.
 BRAZIL: Minas Gerais: Serra do Cipó.
21. *Barbacenia fulva* Goeth. & Henr. Blumea 2: 345, fig. E. 1937.
 BRAZIL: Minas Gerais: No locality.
22. *Barbacenia polyantha* Goeth. & Henr. Blumea 2: 357. 1937.
 BRAZIL: Minas Gerais: Biribiri.
23. *Barbacenia trigona* Goeth. & Henr. Blumea 2: 362. 1937.
 BRAZIL: Minas Gerais: Milho Verde.
24. *Barbacenia globata* Goeth. & Henr. Blumea 2: 349. 1937.
 BRAZIL: Minas Gerais: Rio das Pedras.
25. *Barbacenia coccinea* Mart. ex Schult. f. in R. & S. Syst. 7: 286. 1826.
 BRAZIL: Minas Gerais: Itambé.
26. *Barbacenia glutinosa* Goeth. & Henr. Blumea 2: 350. 1937.
 BRAZIL: Minas Gerais: Morro da Lapa.
27. *Barbacenia markgrafii* Schulze-Menz ex Markgraf, Notizblatt 15: 216. 1940.
 BRAZIL: Minas Gerais: Grão Mogul to Montes Claros.
28. *Barbacenia ignea* Mart. ex Schult. f. in R. & S. Syst. 7: 285. 1826.
 BRAZIL: Minas Gerais: Serra Frio. Sérro.
29. *Barbacenia lilacina* Goeth. & Henr. Blumea 2: 354. 1937.
- 29a. *Barbacenia lilacina* var. *lilacina*
 Leaf-blades hirsute; filaments bifid $\frac{1}{3}$ - $\frac{1}{2}$; flowers lilac.
 BRAZIL: Minas Gerais: Serra do Funil, Rio Paranaha.
- 29b. *Barbacenia lilacina* var. *pallidiflora* Henr. Blumea 2: 354. 1937.
 Leaf-blades sparsely hirsute; filaments bifid more than $\frac{1}{2}$; flowers pale lilac.
 BRAZIL: Minas Gerais: Curralinho to Diamantina.
30. *Barbacenia vandellii* Pohl ex Seubert in Mart. Fl. Bras. 3, pt. 1: 72, pl. 8, fig. 3. 1847.
 BRAZIL: Minas Gerais: São João. Itambé.
31. *Barbacenia brasiliensis* Willd. Sp. Pl. 2: 227. 1799.
Barbacenia Vand. Fl. Lusit. & Brasil. Spec. 21, pl. 1. 1788; Roemer, Script. Hisp. 98, pl. 6, fig. 9. 1796. Without indication of species.
Barbacenia vandelli Schult. f. in R. & S. Syst. 7: 288. 1826. Wrongly attributed to Roemer who cited the genus and its author without any specific name.
Barbacenia bicolor Mart. Nov. Gen. & Sp. 1: 19, pl. 13. 1823.
Visnea Steud. ex Endl. Gen. 173. 1837. Nomen in synonymy, without indication of species.
 BRAZIL: Minas Gerais: Diamantina.
32. *Barbacenia hirtiflora* Goeth. & Henr. Blumea 2: 351, fig. L. 1937.
 BRAZIL: Minas Gerais: Curralinho to Diamantina.
33. *Barbacenia williamsii* L. B. Smith, sp. nov. PLATE 10, FIGURES 23, 24
 A *B. hirtiflora* Goeth. & Henr., cui affinis, floribus aureis, foliorum laminis angustioribus differt.

Caudex very short; leaves numerous, persistent; sheaths ovate, 1 cm. long, glabrous, sulcate; blades linear, filiform-acuminate, to 22 cm. long, 7 mm. wide, closely and finely nerved, dull green, glabrous except for the long-ciliate keel and thickened yellow margins; scapes 1-3, slightly shorter to slightly longer than the leaves, ca. 1 mm. in diameter, sulcate, densely crisp-pilose with slender red-brown mostly eglandular trichomes; perianth-tube 25 mm. long, about twice the ellipsoid ovary and cylindrical above it, 5 mm. in diameter, densely pilose-glandular; tepals suberect at anthesis, oblong, obtuse, 11 mm. long; filaments oblong with long acuminate lobes, nearly equaling the linear anthers.

Type in the Gray Herbarium of Harvard University, collected on iron ore, Serra da Mutuca, near Belo Horizonte, Município of Nova Lima, State of Minas Gerais, Brazil, altitude 1200-1400 meters, April 7, 1945, by Louis O. Williams and Vicente Assis (No. 6696). Isotype in the U.S. National Herbarium, No. 1932777.

BRAZIL: Minas Gerais: Mun. Nova Lima: In rocky slopes, Serra da Mutuca, February 1945, *L. O. Williams* 5201 (GH); 5204 (GH). In campo, Serra do Curral, alt. 1300 m., March 30, 1945, *L. O. Williams & V. Assis* 6386 (GH, US).

34. *Barbacenia flava* Mart. ex Schult. f. in R. & S. Syst. 7: 286. 1826.

34a. *Barbacenia flava* var. *flava*

Caudex to 8 cm. long; leaf-blades 13-20 cm. long, 8-12 mm. wide; scapes equaling the leaves; perianth-tube 16 mm. long; tepals 10-12 mm. long.

BRAZIL: Minas Gerais: Itambé. Serra do Cipó.

34b. *Barbacenia flava* var. *minor* L. B. Smith, var. nov.

A var. *flava* omnibus partibus valde minoribus differt.

Caudex 1-4 cm. long; leaf-blades 8-13 cm. long, to 8 mm. wide; scapes shorter than the leaves; perianth-tube 15-20 mm. long; tepals 5 mm. long.

Type in the U.S. National Herbarium, No. 2340345, collected 3½ miles from Hotel Chapeu de Sol, Serra do Cipó, Município Jaboticatubas, State of Minas Gerais, Brazil, altitude 1110 meters (3700 feet), December 19, 1959, by Bassett Maguire, C. K. Maguire and J. Murça Pires (No. 44665). Isotype in the New York Botanical Garden. Paratype, No. 44691, same data (NY, US).

35. *Barbacenia glauca* Mart. ex Schult. f. in R. & S. Syst. 7: 288. 1826.

BRAZIL: Minas Gerais: Itambé.

36. *Barbacenia itabirensis* Goeth. & Henr. Blumea 2: 353. 1937.

BRAZIL: Minas Gerais: Pico d'Itabira do Campo.

37. *Barbacenia sellovii* Goeth. & Henr. Blumea 2: 359. 1937.

BRAZIL: Minas Gerais: Serra da Mooda (Moeda?). Serra da Piedade.

38. *Barbacenia macrantha* Lem. Jard. Fl. 4: pl. 390. 1854.

BRAZIL: Minas Gerais: Serra do Cipó.

39. *Barbacenia rubro-virens* Mart. Nov. Gen. & Sp. 1: 20, pl. 4, fig. 1. 1823.

BRAZIL: Minas Gerais: Diamantina.

40. *Barbacenia riedeliana* Goeth. & Henr. *Blumea* 2: 35819. 37.

BRAZIL: Minas Gerais: Serra da Lapa.

41. *Barbacenia luzulifolia* Mart. ex Schult. f. in R. & S. *Syst.* 7: 285. 1826.

BRAZIL: Minas Gerais: Ouro Preto.

42. *Barbacenia viscosissima* Goeth. & Henr. *Blumea* 2: 363. 1937.

BRAZIL: Minas Gerais: São João. Itacolumi. Ouro Preto (?).

43. *Barbacenia paranaensis* L. B. Smith, sp. nov. PLATE 10, FIGURES 25, 26

A *B. viscosissima* Goeth. & Henr., cui affinis, foliis ovarioque multo majoribus, tepalis ellipticis latioribus, tubo perianthii ovarium triplo solum longioribus differt.

Caudex over 2 dm. long, terete, 10–15 mm. in diameter at apex (including leaf-sheaths); leaves densely imbricate; sheaths ovate, amplexicaul at base, 3 cm. long, sulcate at apex and margins; blades linear-lanceolate, filiform-acuminate, slightly attenuate toward base, 23–30 cm. long, 17–20 mm. wide, entire, finely nerved, green with the mid-nerve white above, finely and subdensely glandular-pilose on both sides; scape solitary, extending 10–12 cm. above the leaf-sheaths, slender, densely glandular-pilose; perianth-tube 45–55 mm. long, about 3 times as long as the ellipsoid ovary, slightly contracted above the ovary and narrowly campanulate, 15 mm. in diameter at apex, minutely stipitate-glandular, green (! Hatschbach); tepals reflexed at anthesis, broadly elliptic, subacute and apiculate, 17 mm. long; filaments broadly subtriangular with short acute appendages; anthers linear, subbasifixed, 11 mm. long; style exceeding the stamens, broadly ovoid at apex with 3 ovate stigmas.

Type in the U.S. National Herbarium, No. 2279892, collected on sandstone (arenite) bluffs, Fazenda Morungava, Rio de Funil, Município Sengés, State of Paraná, Brazil, December 15, 1958, by G. Hatschbach and R. B. Lange (No. 5359). Isotype in Herbário Hatschbach.

BRAZIL: Paraná: Sengés: Itararé, Morungava, on shady banks in "campo cerrado," alt. 740 m., January 23, 1915, *Dusén* 16478 (F, GH); December 7, 1915, *Dusén* 17379 (F, GH, fruit).

44. *Barbacenia exscapa* Mart. *Nov. Gen. & Sp.* 1: 21, pl. 14. 1823.

BRAZIL: Minas Gerais: Itambé.

45. *Barbacenia gentianoides* Goeth. & Henr. *Blumea* 2: 347, fig. M. 1937.

BRAZIL: Minas Gerais: Rio das Pedras by Valu. Serra da Lapa. As Dattas to Parauna. Serra do Cipó (?).

46. *Barbacenia hilairei* Goeth. & Henr. *Blumea* 2: 351. 1937.

BRAZIL: Minas Gerais: No locality.

47. *Barbacenia oxytepala* Goeth. & Henr. *Blumea* 2: 357. 1937.

BRAZIL: Minas Gerais: Biribiri to Diamantina.

48. *Barbacenia grisea* L. B. Smith, sp. nov.

PLATE 8

A *B. oxytepala* Goeth. & Henr., cui affinis, foliis longe ciliatis, scapo et perigonii tubo densissime adpresseque griseo-tomentellis differt.

Caudex simple, erect, nearly 2 dm. high, covered with the charred remains of old leaves and appearing 5 cm. in diameter; leaves many-ranked, very densely imbricate; sheaths closely sulcate with the nerves almost contiguous, covered with a thick resinous coat; blades linear, attenuate to a filiform apex, 22 cm. long, 13 mm. wide, sulcate on both sides, resinous-punctulate between the nerves, entire, glabrous except the finely long-ciliate margins; scapes 2, 22–26 cm. long, with the perianth very finely and closely gray-tomentellous especially toward apex, scarcely glandular; perianth-tube subcylindric, 60 mm. long; tepals and stamens imperfectly known; ovary 25 mm. long, 5 mm. in diameter, attenuate at base, greatly enlarged in fruit.

Type in the New York Botanical Garden, collected 49 miles from Diamantina, State of Minas Gerais, Brasil, altitude 1140 meters (3800 feet), December 22, 1959, by Bassett Maguire, C. K. Maguire and J. Murça Pires (No. 44745).

49. *Barbacenia glabra* Goeth. & Henr. *Blumea* 2: 348, fig. H. 1937.

BRAZIL: Minas Gerais: No locality.

50. *Barbacenia tomentosa* Mart. *Nov. Gen. & Sp.* 1: 18, pl. 11. 1823.

BRAZIL: Minas Gerais: Ouro Preto.

51. *Barbacenia schidigera* Lem. *Jard. Fl.* 2: pl. 198. 1852.

BRAZIL: Minas Gerais: Pico d'Itacolumi.

52. *Barbacenia graciliflora* L. B. Smith, sp. nov. PLATE 10, FIGURES 27, 28

A *B. schidigera* Lem., cui affinis, tubo epigyno gracili, tepalis subpatentibus acutis differt, et a *B. luzulifolia* Mart., tubo epigyno graciliori subglabro differt.

Caudex simple or few-branched, 8–15 cm. long, 1 cm. in diameter (including the leaf-sheaths); leaves very densely imbricate; sheaths widely sulcate; blades linear, cuspidate-acuminate, slightly narrowed toward base, 11–13 cm. long, 9 mm. wide, dull green, glabrous except for the ciliate margins, rather broadly sulcate with the grooves wider than the nerves; scapes 1–3, extending 4 cm. above the leaf-sheaths, ca. 0.7 mm. in diameter, glabrous; perianth-tube 4 cm. long, more than twice as long as the ellipsoid ovary and contracted above it to a slender tube 3 mm. in diameter, obscurely costate, very sparsely pubescent and appearing glabrous, red (! Williams); tepals subspreading at anthesis, linear, acute, 26 mm. long, the outer finely pubescent; filaments linear with minute triangular lobes, 16 mm. long, connate in a slender tube for most of their length; anthers affixed about $\frac{1}{2}$ above base, 10 mm. long; style slenderly clavate at apex.

Type in the Gray Herbarium of Harvard University, collected on rocks at edge of stream, sandstone area, Serra de Monjolo, 18 kilometers north of Sêrro, Município of Sêrro, State of Minas Gerais, Brazil, May 5, 1945, by Louis O. Williams and Vicente Assis (No. 6816).

53. *Barbacenia ensifolia* Mart. ex Schult. f. in R. & S. Syst. 7: 287. 1826.
BRAZIL: Minas Gerais: Serra da Lapa.
54. *Barbacenia glaziovii* Goeth. & Henr. Blumea 2: 348. 1937.
BRAZIL: Minas Gerais: Biribiri to Diamantina.
55. *Barbacenia conicostigma* Goeth. & Henr. Blumea 2: 341. 1937.
BRAZIL: Minas Gerais: Serra da Lapa.
56. *Barbacenia cuspidata* Goeth. & Henr. Blumea 2: 342, fig. C. 1937.
BRAZIL: Minas Gerais (?): No locality.
57. *Barbacenia longiflora* Mart. Nov. Gen. & Sp. 1: 19, pl. 12. 1823.
BRAZIL: Minas Gerais: Tejuco, near Diamantina. Guinda.
58. *Barbacenia gardneri* Seubert in Mart. Fl. Bras. 3, pt. 1: 70, pl. 8, fig. 5. 1847.
BRAZIL: Minas Gerais: Diamantina. Sêrro.
59. *Barbacenia curviflora* Goeth. & Henr. Blumea 2: 342. 1937.
BRAZIL: Minas Gerais: Rio das Pedras by Valu.
60. *Barbacenia fragrans* Goeth. & Henr. Blumea 2: 345. 1937.
BRAZIL: Minas Gerais: Caldas. São Paulo: São João da Boa Vista.
61. *Barbacenia tricolor* Mart. Nov. Gen. & Sp. 1: 18, pl. 10. 1823.
BRAZIL: Minas Gerais: Serra da Tiradentes. Serra de Rola Moca. Serra do Cipó.
62. *Barbacenia blanchetii* Goeth. & Henr. Blumea 2: 339. 1937.
BRAZIL: Bahia: "Igreja Velha." Jacobina. Pouço d'Areia.
63. *Barbacenia mollis* Goeth. & Henr. Blumea 2: 356. 1937.
- 63a. *Barbacenia mollis* var. *mollis*.

Leaf-blades to 12 cm. long, 12 mm. wide.

BRAZIL: Minas Gerais: No locality.

- 63b. *Barbacenia mollis* var. *microphylla* L. B. Smith, var. nov.

A var. *mollis* foliis multo minoribus differt.

Leaf-blades to 8 cm. long, 4 mm. wide; flower red (! Williams).

Type in the Gray Herbarium of Harvard University, collected on iron ore slope, Serra da Mutuca, beyond Barreiro, Município of Nova Lima, State of Minas Gerais, Brazil, altitude 1400 meters, April 15, 1945, by Louis O. Williams and Vicente Assis (No. 6641).

64. *Barbacenia leucopoda* L. B. Smith, sp. nov. PLATE 10, FIGURES 29, 30

A *B. damaziana* Beauverd, cui aliquid affinis, scapi indumento pallido, floribus minoribus differt.

Caudex about 6 cm. long; leaves densely imbricate; sheaths broadly ovate, 2 cm. long, glabrous, rather laxly nerved; blades linear-lanceolate, acute, 15 cm. long, 12 mm. wide at the middle, finely and densely setose-glandular; scape solitary, 9 cm. high above the leaf-bases, slender, densely vestite with fine white gland-tipped trichomes; flowers orange; perianth-tube subcylindric, very slightly enlarged upward, 25 mm. long, about 3 times as long as the ovary, very dark setose-glandular; tepals suberect at anthesis, elliptic, obtuse, 15 mm. long; filaments subtriangular, 7 mm. long, their appendages narrow, acute;

anthers linear, 9 mm. long, exceeding the filament-appendages by about $\frac{1}{3}$; stigmas small, apical, subcapitate.

Type in the herbarium of the University of California, No. 972105, collected in campo, Serra do Cipó, Município of Mato Dentro, State of Minas Gerais, Brazil, January 15, 1951, by Amaro Macedo (No. 2999).

65. *Barbacenia blackii* L. B. Smith, sp. nov.

PLATE 10, FIGURES 31, 32

A. *B. damaziana* Beauverd, cui affinis, filamentis oblongis antheris paulo superatis, foliis latioribus differt.

Caudex about 3 cm. long; leaves numerous, rather persistent, densely imbricate; sheaths broadly ovate, 1 cm. long, the lower half glabrous except the glandular-ciliate margins, narrowly sulcate, amplexicaul at base; blades linear-lanceolate, slightly narrowed toward base, cuspidate-acuminate, 10–13 cm. long, 9 mm. wide, finely and densely setose-glandular; scape solitary, 6–10 cm. long, less than 1 mm. in diameter, finely and densely setose-glandular; perianth-tube 3–4 cm. long, slightly constricted and subcylindric above the ellipsoid ovary and about 3 times as long, red, densely setose-glandular; tepals suberect at anthesis, elliptic-oblong, obtuse, 14–17 mm. long; filaments oblong with large lobes surpassing the centers of the anthers; anthers linear, 8 mm. long, extending only slightly below the filament-sinus.

Type in the U.S. National Herbarium, No. 2221524, collected on the Serra do Cipó, State of Minas Gerais, Brazil, January 13, 1951, by J. M. Pires and G. A. Black (No. 2734).

BRAZIL: Minas Gerais: Mun. Mato Dentro: In campo, alt. 1600 m., January 15, 1951, A. Macedo 2962 (US).

66. *Barbacenia rubra* L. B. Smith, sp. nov.

PLATE 10, FIGURES 33, 34

A *B. damaziana* Beauverd, cui affinis, tepalis late rotundatis apiculatis, filamentis oblongis, antheris subbasifixis basi filamentorum haud attingentibus differt.

Caudex unknown except for apex, this about 1 cm. in diameter (including leaf-sheaths); leaves densely imbricate; sheaths broadly ovate, ca. 15 mm. long, glabrous below the apex, sulcate, lustrous; blades very narrowly triangular, filiform-acuminate, 14 cm. long, 5 mm. wide, finely and densely setose-glandular; scape solitary 10 cm. long, very slender, setose-glandular; perianth-tube 35 mm. long, cylindric above the broadly obovoid ovary, 8 mm. in diameter, red (! Williams), densely setose-glandular; tepals erect at anthesis, oblong, broadly rounded and apiculate, 20 mm. long; filaments oblong with short lobes, 7 mm. long; anthers linear, 9 mm. long, subbasifixed, extending only slightly below the filament-sinus.

Type in the Gray Herbarium of Harvard University, collected on rocky slopes, Serra da Mutuca, Município of Nova Lima, State of Minas Gerais, Brazil, February 1945, by Louis O. Williams (No. 5432a).

67. *Barbacenia damaziana* Beauverd, Bull. Herb. Boiss. II. 5: 1078. 1905.
BRAZIL: Minas Gerais: Pico d'Itacolumi.

68. *Barbacenia bahiana* L. B. Smith, sp. nov. PLATE 10, FIGURES 35, 36

A *B. damaziana* Beauverd, cui affinis, ovario basi longe attenuato anguste obconico differt.

Caudex unknown except for apex, this about 7 mm. in diameter; leaves 3-ranked, densely imbricate; sheaths closely sulcate with the nerves almost contiguous; blades linear, attenuate to a filiform apex, 15 cm. long, 5–8 mm. wide, entire, sulcate on both sides, densely vestite with long acuminate setae and much shorter stipitate glands; scape solitary, extending 6 cm. above the leaf-sheaths, more glandular than the leaf-blades; perianth-tube 4 cm. long, subdensely pale glandular, slenderly cylindric above the ovary, 4 mm. in diameter; ovary slenderly obconic; tepals erect at anthesis, oblong, broadly subacute, 15 mm. long, 3 mm. wide, the outer minutely glandular, the inner nearly glabrous; stamens slightly shorter than the tepals, filaments subtriangular with broad base and short appendages; anthers linear, basifixed, 11 mm. long; style about equaling the tepals, broadly ovoid at apex with 3 ovate stigmas.

Type in the U.S. National Herbarium, No. 762256, collected in the vicinity of Machado Portello, State of Bahia, Brazil, June 19–23, 1915, by J. N. Rose and P. G. Russell (No. 19924).

Excluded and Doubtful Taxa

Barbacenia gracilis hort. ex Baker, Journ. Linn. Soc. 18: 239. 1880. Nomen.

This horticultural name was published in the synonymy of *Dasyli-
rion acrotrichum* Zucc., a liliaceous species of Mexico.

Vellozia coerulescens hort. Belg. ex Gumbel, Gard. Chron. for 1874. 2: 623,
657. 1874.

According to Jackson, Index Kewensis 4: 1173. 1895, this horti-
cultural name is a synonym of *Barbacenia purpurea* Hook.

Vellozia duidae Steyermark, Fieldiana Bot. 28, no. 1: 157. 1951.

The species is based on sterile material from southern Vene-
zuela. It is related to if not identical with *V. tubiflora* (A. Rich.)
H.B.K.

Vellozia hirsuta Goeth. & Henr. Blumea 2: 374. 1937.

This species was described from sterile material collected at Biri-
biri, Minas Gerais, Brazil.

Vellozia lanata Pohl, Pl. Bras. 1: 130. 1827.

This species was described from sterile material collected at Caldas
Novas, Goiás, Brazil.

Vellozia leptophylla Seubert in Mart. Fl. Bras. 3, pt. 1: 84. 1847.

This species was based on a sterile collection by Sellow without any indication of locality. Consequently there is not much hope of its ever being clarified.

Vellozia scabra Spreng. Syst. 3: 338. 1826.

The single line of description reads: "V. capsula glabra, scapo hispido," leaving little hope of ever identifying the species, although effecting valid publication.

Vellozia squamata auctt. ex Steud. Nom. Bot. ed. 2. 2: 746. 1841. Nomen.

This name was published in the synonymy of *Xerophyllum sabadilla*, a Mexican liliaceous species of doubtful identity. It is scarcely more than evidence of a misdetermination.

Vellozia tomentosa Pohl, Pl. Bras. 1: 130. 1827.

This species was described from sterile material collected between the crossing of the Rio Jequitinhonha and Calumbi, Minas Gerais, Brazil.

Vellozia triquetra Pohl, Pl. Bras. 1: 129. 1827.

This species was described from sterile material collected between Inhumas and Quartel do Teixeira, District of Minas Novas, Minas Gerais, Brazil.

Supplement

The following novelties were received too late to be included in the foregoing revision, but are correlated with it by species numbers. The Latin diagnosis gives the salient differences between each novelty proposed and its nearest relatives in the key.

3a. **Vellozia maxillarioides** L. B. Smith, sp. nov.

PLATE 11, FIGURE 37

A *V. abietina* Mart., cui affinis, ramis elongatis, vaginis foliorum lepidibus erectis fimbriatis praeditis, ovario angustissime sulcato differt.

Plant slender, branched, to 5 dm. high (! Maguire); branches ca. 4 mm. in diameter including the old leaf-bases; leaves few-ranked, laxly imbricate, the complete ones 2-5 at the apex of the branch; sheaths ca. 3 cm. long, tubular at base, very densely nerved, yellow-brown, subdensely vestite with erect white fimbriate scales; blades linear, abruptly acute and cuspidate, 4 cm. long, 3.5 mm. wide, densely nerved, lepidote on the thickened yellow margins, elsewhere glabrous, the keel somewhat prominent beneath; scape single, exactly equaling the leaf-sheath so that the flower appears sessile, soon lateral; capsule slenderly obconic, 10 mm. long, very densely and coarsely ribbed, otherwise even and glabrous.

Type in the U.S. National Herbarium, No. 2369002, collected on sandstone, slopes and summit of Grão Mogul, State of Minas Gerais, Brazil, altitude 900–1100 meters, August 17, 1960, by Bassett Maguire, Geraldo Mendes Magalhães and Celia K. Maguire (No. 49268). Isotype in the New York Botanical Garden.

16a. *Vellozia fruticosa* L. B. Smith, sp. nov.

PLATE 11, FIGURES 38, 39

A *V. ambigua* Goeth. & Henr. et. *V. martiana* Goeth. & Henr., cuibus ex descriptionibus affinis, caudice graciliore, foliorum laminis glutinosis persistentibus, floribus multo minoribus differt.

Fruticose, much branched (! Maguire); caudex 7–8 mm. in diameter including old leaf-bases; leaves few-ranked, subdensely imbricate, the living about 5; sheaths ca. 2 cm. long, tubular at base, densely nerved except the narrow brown margin, glabrous, not dividing with age; blades linear, acute and long-cuspidate, 7 cm. long, 3 mm. wide, sparsely and minutely serrulate on the keel beneath, on the margins, and in two longitudinal lines above, the living very glutinous, erect to spreading, the dead reflexed and evidently persistent for several seasons; scape single, 7–8 cm. long, 0.8 mm. in diameter, nearly even, sparsely and obscurely glandular toward apex; stamens 18, appendaged at base; capsule ellipsoid, 8 mm. long, sharply trigonous with several additional costae, stipitate-glandular on the costae.

Type in the U.S. National Herbarium, No. 2368988, collected on sandstone outcrop, ca. 3–5 km. east of Serra, along road to Diamantina, State of Minas Gerais, Brazil, August 9, 1960, by Bassett Maguire, Geraldo Mendes Magalhães and Celia K. Maguire (No. 49130). Isotype in the New York Botanical Garden.

26a. *Vellozia grao-mogulensis* L. B. Smith, sp. nov.

PLATE 11, FIGURES 40–42

V. squalida Mart. ex Schult. f. in systema mea proxima sed habito caespitoso humile, foliis angustioribus densioribusque, scapo densiuscule stipitato-glanduloso differt.

Plant caespitose; caudex short, much branched, ca. 8 mm. in diameter including old leaf-bases; leaves rather many-ranked, very densely imbricate, the living ones only 4 or 5 at the apex of the branch; sheaths 17 mm. long, almost completely covered; blades linear, attenuate, to 9 cm. long, 1.8 mm. wide, densely pale-lepidote on both sides at first, the keel and thickened margins purple-black, the margins serrulate; scapes 1 or rarely 2, 12–15 cm. long, very slender, subdensely stipitate-glandular; ovary subglobose, 5 mm. in diameter, much enlarged in fruit, evenly and subdensely dark-glandular; tepals subequal, elliptic, obtuse, 17 mm. long, purple; stamens 18, appendaged at base, much shorter than the tepals.

Type in the U.S. National Herbarium, No. 2368996, collected on sandstone, Serra Grão Mogul, north base of mountain, State of Minas Gerais, Brazil, altitude 600–700 meters, August 16, 1960, by Bassett Maguire, Geraldo Mendes Magalhães and Celia K. Maguire (No. 49218). Isotype in the New York Botanical Garden.

27a. *Vellozia bicolor* L. B. Smith, sp. nov.

PLATE 11, FIGURES 43-45

A *V. aloifolia* Mart., cui affinis, foliis bicoloribus, ovario grosse stipitato-glanduloso differt.

Plant 3-5 dm. high (! Maguire); caudex to 5 cm. in diameter (! Maguire); leaves many-ranked, very densely imbricate, the complete ones about 9 at the apex of the caudex; sheaths ample, 55 mm. long, densely nerved, white-lanate at apex, elsewhere glabrous, black with brown margins, lustrous; blades soon deciduous, linear, acuminate, 30-35 cm. long, 2 cm. wide, even, green, and glabrous above, completely cinereous-lanate beneath, the midnerve impressed above, prominent beneath; scapes 1-2, 25 cm. long, obtusely trigonous, 4 mm. wide, densely stipitate-glandular especially toward apex; tepals (only remnants known) glandular-appendaged at base; stamens about 40; capsule globose, 25 mm. in diameter, densely and coarsely stipitate-glandular.

Type in the U.S. National Herbarium, No. 2368976, collected on rocky sandy soil, summit of Serra do Cipó, road from Hotel Chapeu de Sol between Km. 111 and 120, State of Minas Gerais, Brazil, altitude 1200 meters, August 6, 1960, by Bassett Maguire, Geraldo Mendes Magalhães and Celia K. Maguire (No. 49037). Isotype in the New York Botanical Garden. Same, No. 49047 (NY, US).

37a. *Vellozia mollis* L. B. Smith, sp. nov.

PLATE 11, FIGURES 46-48

A *V. resinosa* Mart. ex Schult f., cui affinis, foliis juvenilibus utrinque molliter denseque albo-tomentosis, ovario e glochidiis dimorphis dense glanduloso differt.

Caudex nearly 5 cm. in diameter including old leaf-bases; leaves many-ranked, very densely imbricate, the complete ones about 12; sheaths ample, 35 mm. long, densely nerved, dark castaneous, lustrous, the apical half densely white-tomentose; blades linear, acute to sub-obtuse, 13 cm. long, 8 mm. wide, at first densely white-tomentose, then becoming more or less glabrous and green above; scapes 1-2 (?), 22 cm. long, obtusely trigonous, densely stipitate-glandular toward apex; ovary subglobose, densely vestite with two types of glandular trichomes, one short and conical, the other about twice as long with a setose prolongation; stamens numerous; capsule 10 mm. long.

Type in the U.S. National Herbarium, No. 2368991, collected on sandstone outcrop, ca. 3-5 km. east of Serra, along road from Conceição to Diamantina, State of Minas Gerais, Brazil, August 9, 1960, by Bassett Maguire, Geraldo Mendes Magalhães and Celia K. Maguire (No. 49156). Isotype in the New York Botanical Garden.

37b. *Vellozia spiralis* L. B. Smith, sp. nov.

PLATE 11, FIGURES 49-51

A *V. resinosa* Mart. ex Schult. f., cui affinis, vaginis foliorum apice ciliatis alibi glabris, laminis basi ciliatis alibi glabris differt.

Plant to 2.5 meters high (! Maguire), over 3 cm. in diameter including old leaf-bases; leaves few-ranked in a strong spiral, densely

imbricate, the complete ones about 20; sheaths ample, 4 cm. long, densely nerved and dark castaneous except for the thin pale margin, lustrous, disintegrating at apex and the whitish fibers recurving in a tight coil, coarsely setose-ciliate toward apex, elsewhere glabrous; blades linear, rounded and retuse, 30 cm. long, 11 mm. wide, setose-ciliate at extreme base, erect-serrulate on the margins, densely nerved, otherwise even and glabrous; scapes 3, 12–15 cm. long, 2.5 mm. in diameter, sulcate, densely and finely stipitate-glandular toward apex; ovary subglobose, 15 mm. long, subdensely and finely stipitate-glandular; tepals subequal, elliptic, 45 mm. long, purple; stamens ca. 40, the phalanges appendaged.

Type in the U.S. National Herbarium, No. 2369000, collected on sandstone, slopes and summit of Grão Mogul, State of Minas Gerais, Brazil, altitude 900–1100 meters, August 17, 1960, by Bassett Maguire, Geraldo Mendes Magalhães and Celia K. Maguire (No. 49261). Isotype in the New York Botanical Garden.

38a. *Vellozia coronata* L. B. Smith, sp. nov.

PLATE 11, FIGURES 52–54

A *V. brevifolia* Seubert, cui affinis, habito subacaule, foliis floribusque majoribus, ovario tubo brevi coronato differt.

Caudex simple or forked, 4 cm. long; 3 cm. in diameter including the old leaf-bases; leaves very densely imbricate, the complete ones 4–5 at the top of the caudex; sheaths ample, 3 cm. long, dark castaneous, glabrous, lustrous, the old ones deeply divided; blades linear, narrowly obtuse and bicarinate near apex, to 16 cm. long, 15 mm. wide, very densely and finely serrulate-ciliate, otherwise glabrous and nearly even, the midnerve impressed on both sides; scapes at least 2, 9–15 cm. long, sulcate and subdensely stipitate-glandular toward apex; stamens 18 or more, appendaged at base; capsule subglobose, 12 mm. long, subdensely stipitate-glandular, crowned with a short epigynous tube.

Type in the U.S. National Herbarium, No. 2368985, collected on sandstone outcrop, ca. 20 km. from Conceição on the road from Conceição to Diamantina, State of Minas Gerais, Brazil, August 9, 1960, by Bassett Maguire, Geraldo Mendes Magalhães and Celia K. Maguire (No. 49114). Isotype in the New York Botanical Garden.

39a. *Vellozia epidendroides* Mart. ex Schult. f. var. *major* L. B. Smith, var. nov.

A var. *epidendroides* habito majore, foliorum vaginis densiore imbricatis, laminis longioribus differt.

Plant 1.5 meters high (! Maguire); sheaths of the leaves ca. 3 cm. long, exserted less than 1 cm.; blades 12 cm. long.

Type in the U.S. National Herbarium, No. 2368982, collected on rock exposures, summit of Serra do Cipó, along road from Hotel Chapeu do Sol, km. 120–140, State of Minas Gerais, Brazil, altitude 1200–1300 meters, August 8, 1960, Bassett Maguire, Geraldo Mendes Magalhães and Celia K. Maguire (No. 49098). Isotype in the New York Botanical Garden.

39b. *Vellozia epidendroides* Mart. ex Schult. f. var. *divaricata* L. B. Smith, var. nov.

A var. *epidendroides* habito ramosiore, ramis divaricatis brevibus, foliorum vaginis densiore imbricatis differt.

Plant 3 dm. high (! Maguire); branches 3–5 cm. long; sheaths of the leaves exerted for 5 mm.; blades to 8.5 cm. long.

Type in the New York Botanical Garden, collected on rocks, sandstone terraces and ridges, summit of Serra do Cipó, km. 112–128 along road from Hotel Chapeu de Sol, State of Minas Gerais, Brazil, altitude 1200–1300 meters, August 1960, by Bassett Maguire, Geraldo Mendes Magalhães and Celia K. Maguire (No. 49064).

39c. *Vellozia marcescens* L. B. Smith, sp. nov.

A *V. epidendroides* Mart. ex Schult. f., cui affinis, foliis marcescentibus, laminis reflexis persistentibus plus attenuatis, scapo brevior differt.

Caudex erect, slender, mostly covered by old leaves; leaves few-ranked; sheaths tubular, much exposed apically, very densely nerved, yellow-brown, glabrous, lustrous; blades linear, attenuate to a narrowly obtuse apex, closely nerved beneath, serrulate on the margins, otherwise even and glabrous, the living few, erect to spreading, the old blades reflexed, long-persistent; scapes 1–2, soon becoming lateral, slender, at first shorter than the leaves, densely stipitate-glandular toward apex; ovary subglobose, densely stipitate-glandular; tepals appendaged at base; stamens about 24.

Vellozia marcescens* var. *marcescens

PLATE 11, FIGURES 55–57

Planta fere omnibus partibus majoribus, caudice ramoso, scapis minoribus.

Caudex incompletely known but over 3 dm. high, branched, 5 mm. in diameter (including the old leaf-sheaths); leaf-blades to 7 cm. long, 7 mm. wide; scapes 15–20 mm. long above the leaf-sheaths.

Type in the U.S. National Herbarium, No. 2368998, collected on sandstone, slopes and summit of Serra Grão Mogul, Minas Gerais, Brazil, altitude 900–1100 meters, August 17, 1960, by Bassett Maguire, Geraldo Mendes Magalhães and Celia K. Maguire (No. 49259). Isotype in the New York Botanical Garden.

***Vellozia marcescens* var. *minor* L. B. Smith, var. nov.**

A var. *marcescente* caudice simplici, foliis minoribus, scapis majoribus differt.

Caudex simple, to 2 dm. high, 3 mm. in diameter including the old leaf-sheaths; leaf-blades to 45 mm. long, 3.5 mm. wide; scapes to 35 mm. long above the leaf-sheaths, evidently elongating in fruit.

Type in the U.S. National Herbarium, No. 2368997, collected on sandstone, Serra Grão Mogul, north base of mountain, altitude 600–700 meters, August 16,

1960, by Bassett Maguire, Geraldo Mendes Magalhães and Celia K. Maguire (No. 49219). Isotype in the New York Botanical Garden.

42a. *Vellozia ciliata* L. B. Smith, sp. nov. PLATE 11, FIGURES 58, 59

A *V. cryptantha* Seubert, cui affinis, laminis foliorum multo latioribus basi dense longeque ciliatis, ovario obscure verruculoso differt.

Caudex to 15 cm. long, 1-2-branched (! Maguire), 4-5 cm. in diameter including the leaf-bases; (! Maguire), the complete ones numerous; leaves many-ranked, very densely imbricate; sheaths broadly ovate, over 25 mm. long, very densely nerved with a thin nerveless margin, pale stramineous, glabrous, lustrous; blades linear, subacute and cuspidate, 20 cm. long, 10 mm. wide, densely ciliate toward base with long suberect yellow-brown setae, elsewhere glabrous, the midnerve impressed above, prominent beneath; scapes 1-2 (?), slenderly clavate, 2 cm. long; capsule obconic, truncate, 15 mm. long, stramineous, lustrous, obscurely verruculose, hidden by the leaves.

Type in the U.S. National Herbarium, No. 2368992, collected on sandstone outcrop ca. 3-5 km. east of Serra, along road from Conceição to Diamantina, State of Minas Gerais, Brazil, August 9, 1960, by Bassett Maguire, Geraldo Mendes Magalhães and Celia K. Maguire (No. 49158). Isotype in the New York Botanical Garden.

62a. *Vellozia pulchra* L. B. Smith, sp. nov. PLATE 12, FIGURES 60-62

A *V. cinerascens* Mart. ex Schult. f., cui verisimiliter affinis, foliis majoribus glabris, glochidiis ovarii apice subulato-acuminatis haud divisus differt.

Somewhat branched shrub about 1 meter high (! Maguire); caudex 2 cm. in diameter (including the old leaf-sheaths) near apex; leaves densely few-ranked; sheaths tubular at base, 3 cm. long, glabrous, yellow-brown with a narrow white margin where covered, lustrous, very densely nerved, remaining entire; blades many in the terminal fascicle, linear-lanceolate, retuse at apex, to 27 cm. long, 15 mm. wide, closely nerved, serrulate on the keel and margins, otherwise even and glabrous; scape single, 18 cm. long above the leaf-sheaths, even, glabrous; ovary broadly ellipsoid 15 mm. long, covered with suberect slender contorted pale subulate-acuminate trichomes; tepals subequal, elliptic-oblong, obtuse, 9 cm. long, 3 cm. wide, purple, finely pale-scabrous toward base; stamens 6; anthers linear, 3 cm. long.

Type in the U.S. National Herbarium, No. 2369003, collected on granite slopes immediately west of Pedra Azul, State of Minas Gerais, Brazil, August 21, 1960, by Bassett Maguire, Geraldo Mendes Magalhães and Celia K. Maguire (No. 49289). Isotype in the New York Botanical Garden.

15a. *Barbacenia brevifolia* Taub. var. *recurvata* L. B. Smith, var. nov.

A var. *brevifolia* foliis recurvatis conduplicatis subduplo latioribus, floribus majoribus differt.

Leaf-blades arching-recurved, conduplicate, ca. 8 mm. wide; flowers 4 cm. long.

Type in the New York Botanical Garden, collected on rocks, Guinda, Município of Diamantina, State of Minas Gerais, Brazil, November 5, 1937, by H. L. Mello Barreto (No. 9526).

45a. *Barbacenia magalhaesii* L. B. Smith, sp. nov.

PLATE 12, FIGURES 63-65

A *B. gentianoides* Goeth. & Henr., cui valde affinis, foliis flores longe superantibus subtus glabris, floribus aureis minoribus differt.

Densely caespitose herb, branches seldom more than 10 cm. long (! Maguire); leaves numerous, persistent; sheaths ovate, 2 cm. long, amplexicaul, glabrous, sulcate; blades linear, filiform-acuminate, to 16 cm. long, 9 mm. wide, closely and finely nerved, glabrous beneath, subdensely glandular-tuberculate above, setose-ciliate on the narrow dark scarcely thickened margins; flowers appearing sessile, glabrous, yellow (! Maguire); perianth-tube slenderly cylindrical, 4 cm. long, 3 mm. in diameter, flaring somewhat at apex; tepals suberect at anthesis, linear, broadly subacute, 3 cm. long; stamens 25 mm. long; filaments oblong with very short rounded lobes, highconnate; anthers attached near apex of filament, nearly basifixed, linear, 11 mm. long, purple; ovary slenderly ellipsoid, ca. 8 mm. long, nearly glabrous.

Type in the U.S. National Herbarium, No. 2368981, collected on sandstone rocks and ledges, road from Hotel Chapeu de Sol, Serra Cipó to Conceição, km. 120-140, State of Minas Gerais, Brazil, altitude 1200-1300 meters, August 8, 1960, by Bassett Maguire, Geraldo Mendes Magalhães and Celia K. Maguire (No. 49094). Isotype in the New York Botanical Garden.

BRAZIL: Minas Gerais: Mun. Jaboticatubas: Serra do Cipó, Conceição do Mato Dentro, Morro do Pilar, road to Pilar, October 16, 1953, F. Segadas Vianna & J. Lorêdo Jr. No. Serra-II-1066 (R, US). Frequent on rocks, sandstone terraces and ridges, summit of Serra do Cipó, km. 112-128 along road from Hotel Chapeu, alt. 1200-1300 m., August 7, 1960, *Maguire, Magalhães & Maguire* 49062 (NY).

45b. *Barbacenia sessiliflora* L. B. Smith, sp. nov. PLATE 12, FIGURES 66-68

A *B. gentianoides* Goeth. & Henr., cui parum affinis, foliis angustioribus, tubo perianthii angustissime obconici, filamentorum lobis triangularibus differt.

Plant only 5-10 cm. high but much branched; leaves numerous, persistent; sheaths broadly ovate, 7 mm. long, glabrous, sulcate; blades linear, acuminate, to 9 cm. long, 4 mm. wide, closely and finely nerved, glabrous except for the setose-ciliate margins; flowers sessile, red (! Magalhães); perianth-tube 5 cm. long, very slenderly obconic above the ovary, 5 mm. in diameter at apex, sparsely vestite with fine eglandular trichomes; tepals spreading at anthesis, nearly

uniform, oblong, 15 mm. long; filaments oblong, 4.5 mm. long, the lobes triangular, acuminate; anthers linear, exceeding the filaments by 5 mm.; ovary obovoid, 10 mm. long.

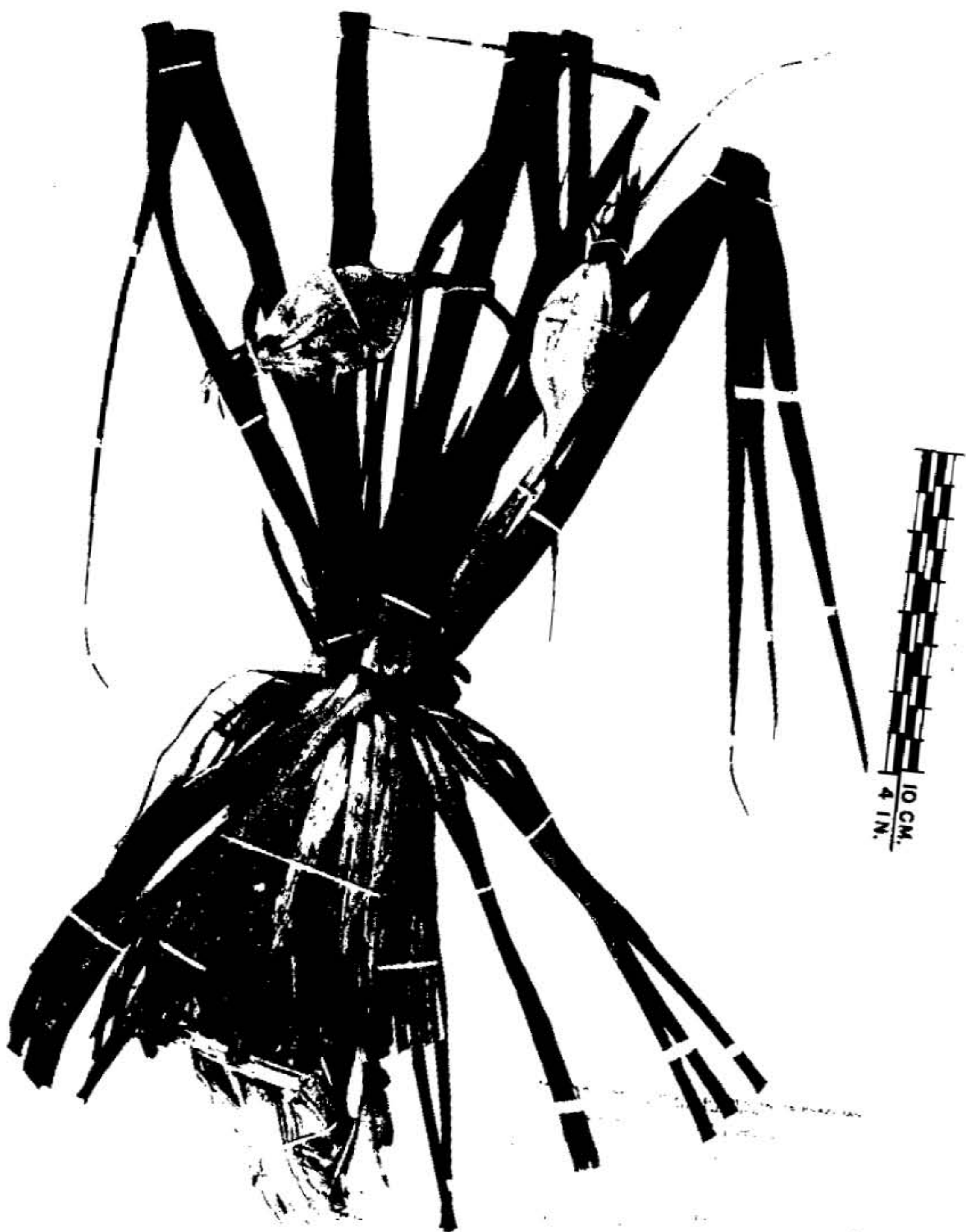
Type in the New York Botanical Garden, collected on rock, Serra Cata Altas, Município of Santa Barbara, State of Minas Gerais, Brazil, February 2, 1943, by Geraldo Mendes Magalhães (No. 6400). Cotype: Same data as the type, *Magalhães* 6854 (NY).

55a. *Barbacenia albiflora* L. B. Smith, sp. nov. PLATE 12, FIGURES 69, 70

A *B. conicostigma* Goeth. & Henr., cui valde affinis, foliis utrinque pilis glandulosis biformibus vestitis, floribus albis differt.

Stem short with multiple crown, very viscid (! Maguire); leaves numerous, persistent; sheaths ovate, over 3 cm. long, closely and finely nerved, glabrous; blades linear, filiform-acuminate, ca. 30 cm. long, 15 mm. wide, flat, laxly and coarsely setose and densely and minutely glandular on both sides, the keel and margins inconspicuous; scapes 3 or more, ca. 50 cm. long, much exceeding the leaves, coarsely and finely glandular intermixed especially toward apex; flowers white (! Maguire); perianth-tube 4 cm. long, slenderly cylindric and laxly and coarsely glandular above the ovary, densely and finely glandular on the ovary; tepals irregularly reflexed at anthesis, 2 cm. long, strongly dimorphic, the outer narrowly oblong, densely glandular, the inner elliptic, glabrous; filaments oblong, 8 mm. long, the lobes short, acuminate; anthers linear, 18 mm. long, extending below the base of the filament; ovary ellipsoid, 15 mm. long.

Type in the U.S. National Herbarium, No. 2368995, collected on sandstone, Serra Grão Mogul, north base of mountain, State of Minas Gerais, Brazil, altitude 600-700 meters, August 16, 1960, by Bassett Maguire, Geraldo Mendes Magalhães, and Celia K. Maguire (No. 49213). Isotype in the New York Botanical Garden.



Fellosia alata I. B. Smith (Maguire & Pires 44690).



FLORA OF BRAZIL
NEW YORK BOTANICAL GARDEN
HERBARIUM

litsea

5233

Vellozia streptophylla L. B. Smith (Gardner 5233).



Vellozia froesii L. B. Smith (Fröes 19980).



90914

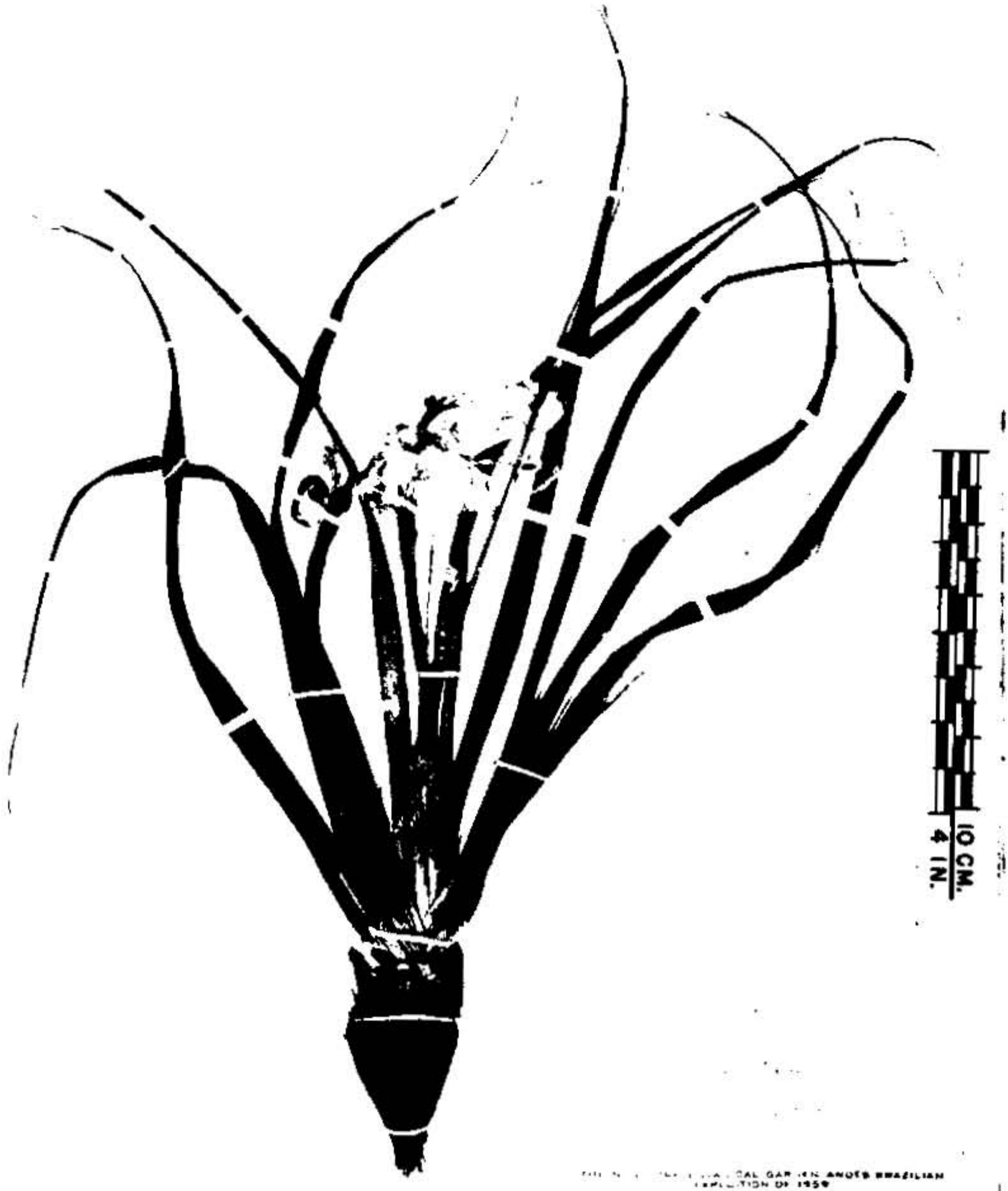
INSTITUTO AGRICOLA DO NORTE
PLANTAS DA AMAZONIA
SERIE 10/1966

Vellozia

Serra do Cochiabo, 425 m. de altitude.
Planta baixa, flor branco-violacea
(orquidacea); em savana sobre pedras.

J.M. Pires, O.A. Black, J.J. Wurdack &
M.T. Silva 6423 17-Dec., 1966

Vellozia bulbosa L. B. Smith (Pires et al. 6423).



THE U.S. NATIONAL HERBARIUM, WASHINGTON, D.C.
 REPRODUCTION OF 1959
 MAGUIRE & PIRES 44742
 BRAZIL: MATO GROSSO DO SUL, MATOZINHOS, 1950
 COLLECTED BY L. B. SMITH, R. S. GENTRY, & J. M. WOODSON
 NOV. 20, 1950
 U.S. NATIONAL HERBARIUM, WASHINGTON, D.C.

Vellozia maguirei L. B. Smith (Maguire & Pires 44742).



COLLEÇÃO HERBÁRIO DE EXSICCATO
 PLANTAS DA AMAZONIA
 11-20-1966

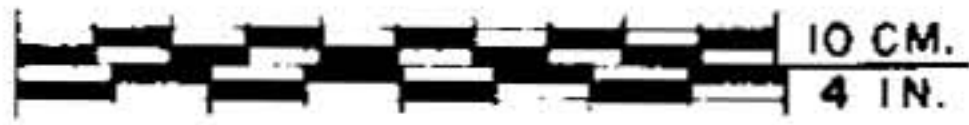
Fellozia

Herb. de Exsiccato, 11-20-1966, 1966

Plant. de Exsiccato, 11-20-1966, 1966
 * Exsiccato, 11-20-1966, 1966

Herb. de Exsiccato, 11-20-1966, 1966
 * Exsiccato, 11-20-1966, 1966

Fellozia cachimbensis L. B. Smith (Pires et al. 6232).



FLORA OF GOIAS, BRAZIL
 Los Angeles County Museum
 MACHES BRAZILIAN EXPEDITION

near the Chapada dos Veadeiros at
 10,000 ft. alt. S. lat. 16° 30'
 longitude about 7 km. south of Vespasiao

U.S. Dept. No. 14580 April 26/27 1956

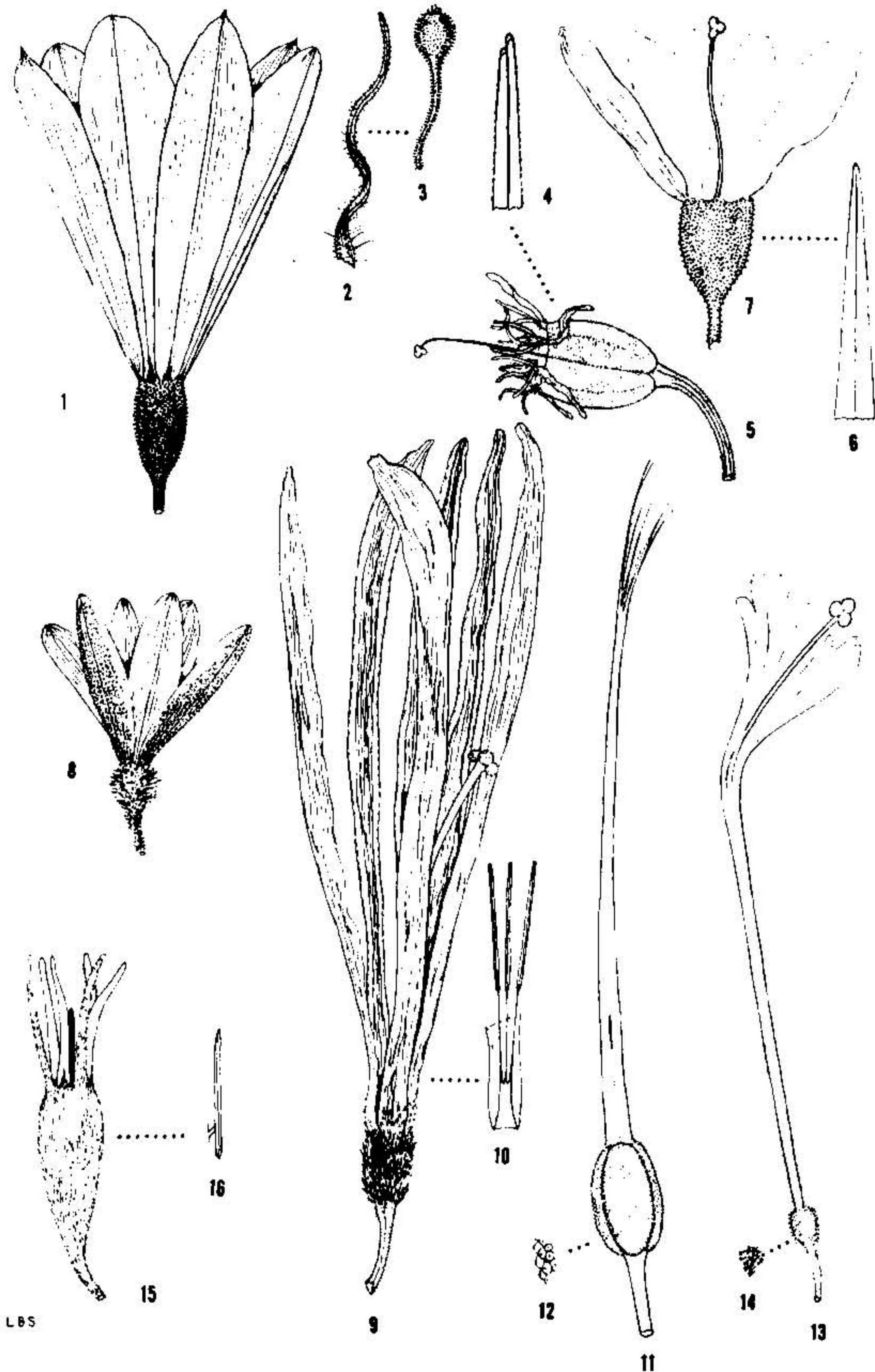
Vellozia dawsonii L. B. Smith (*Dawson* 14580).



THE NEW YORK BOTANICAL GARDEN
EXPLORATION OF THE
PLANTS OF THE
NEW YORK BOTANICAL GARDEN



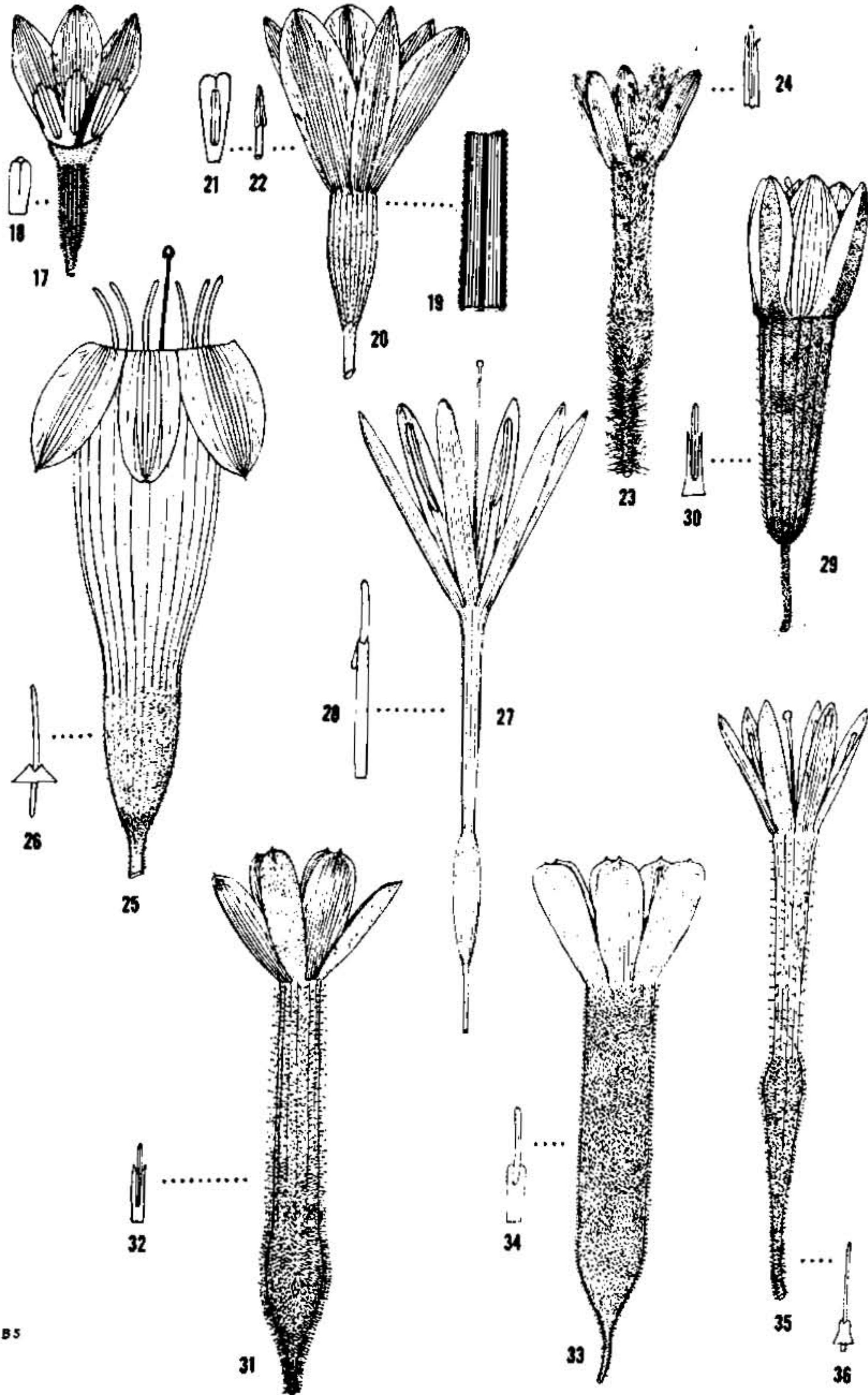
Barbacenia grisea L. B. Smith (Maguire & Pires 44745).



FIGURES 1-16.- (All figures $\times 1$, except 12 and 14 which are about $\times 5$): 1, *Vellozia viannae* L. B. Smith (*Segadas-Vianna* No. Serra II-1103), flower. 2, *V. streptophylla* L. B. Smith (*Gardner* 5233), leaf-blade; 3, fruit. 4, *V. ramosissima* L. B. Smith (*Maguire & Pires* 44666), apex of leaf-blade; 5, fruit. 6, *V. piresiana* L. B. Smith (*Black & Pires* 51-12157), apex of leaf-blade; 7, fruit. 8, *V. hypoxoides* L. B. Smith (*Macedo* 4330), flower. 9, *V. swallenii* L. B. Smith (*Swallen* 3617), flower; 10, phalange of stamens, ventral. 11, *V. machrisiana* L. B. Smith (*Dawson* 14674), fruit; 12, trichomes of ovary. 13, *V. uleana* L. B. Smith (*Ule* 8372), flower; 14, trichomes of ovary. 15, *Barbaceniopsis boliviensis* (Baker) L. B. Smith, fruit (*Schreiter* 2561); 16, stamen, lateral (*Bang* 1134).

SPECIES OF BARBACENIA

FIGURES 17-36.—(All figures $\times 1$): 17, *Barbacenia irwiniana* L. B. Smith (*Irwin* 2803), flower with tepals cut away; 18, stamen, dorsal. 19, *B. nigrimarginata*, L. B. Smith (*Dawson* 14717), section of leaf-blade; 20, flower; 21, stamen, ventral; 22, apex of style. 23, *B. williamsii* L. B. Smith (*Williams & Assis* 6696), flower; 24, stamen, ventral. 25, *B. paranaensis* L. B. Smith (*Hatschbach & Lange* 5359), flower; 26, stamen, dorsal. 27, *B. graciliflora* L. B. Smith (*Williams & Assis* 6816), flower; 28, stamen, dorsal. 29, *B. leucopoda* L. B. Smith (*Macedo* 2999), flower; 30, stamen, ventral. 31, *B. blackii* L. B. Smith (*Pires & Black* 2734), flower; 32, stamen, ventral. 33, *B. rubra* L. B. Smith (*Williams* 5432a), flower; 34, stamen, ventral. 35, *B. bahiana* L. B. Smith (*Rose & Russell* 19924), flower; 36, stamen, dorsal.

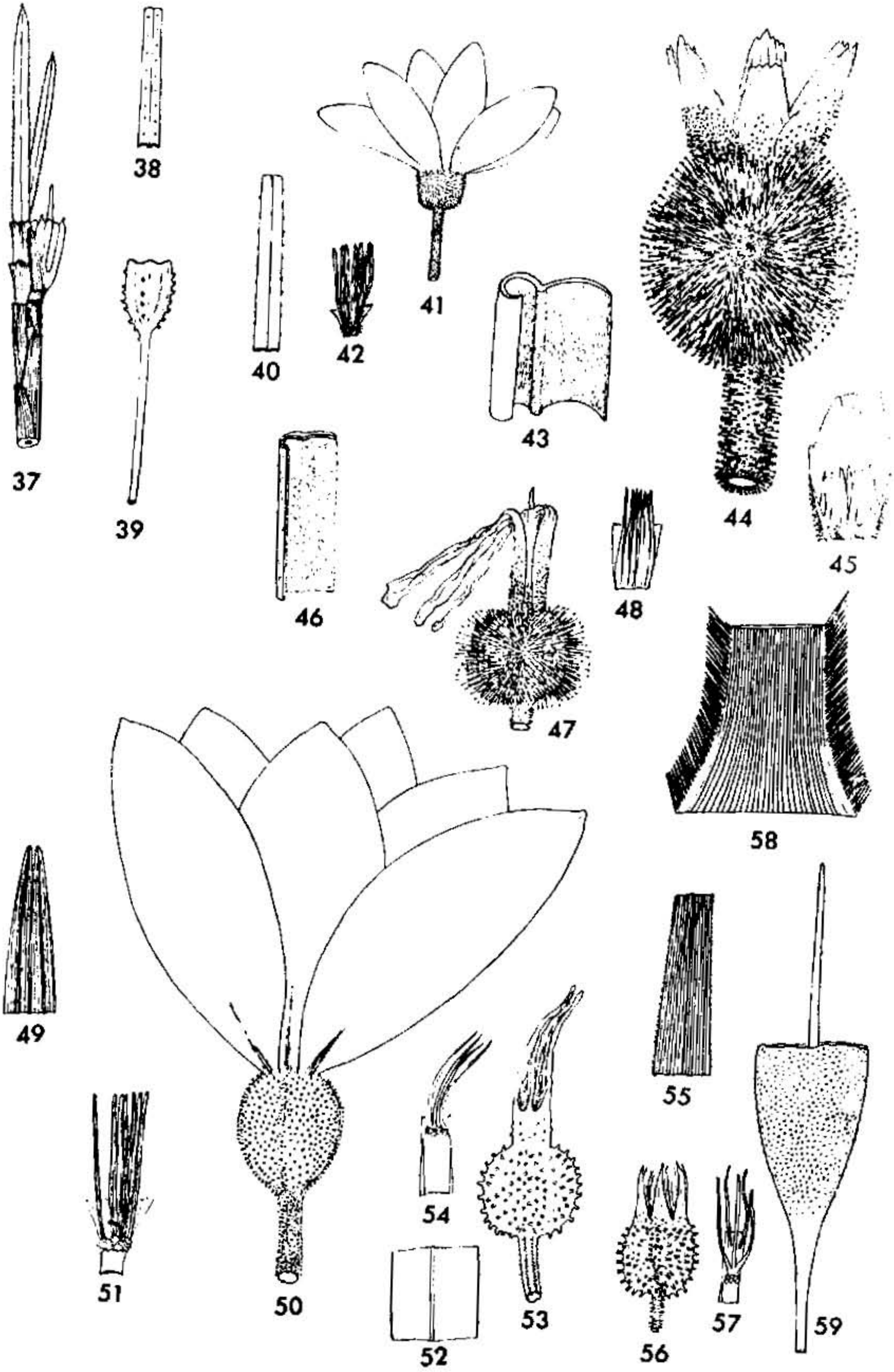


LBS

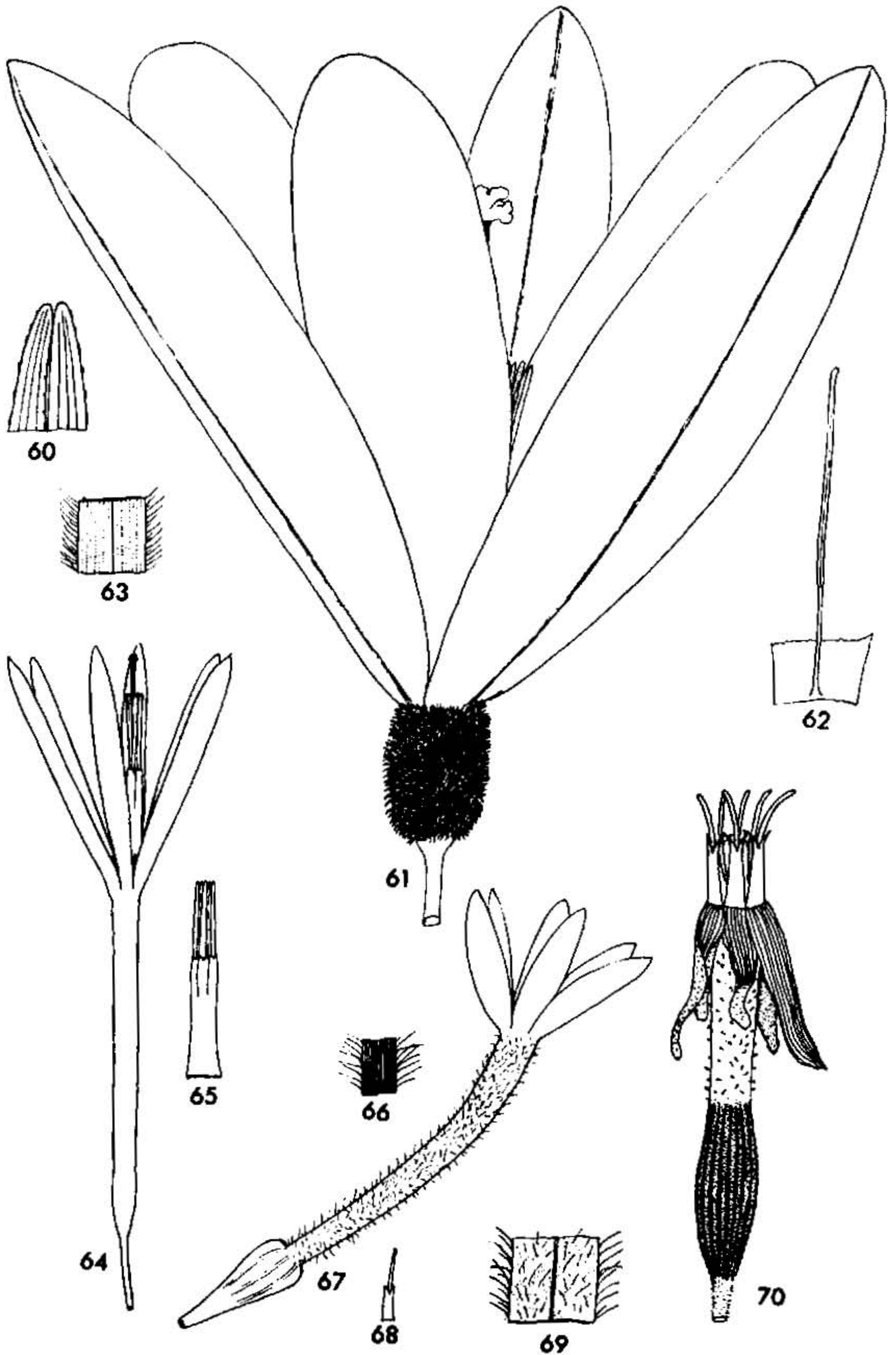
(For explanation see opposite page)

SPECIES OF VELLOZIA

FIGURES 37-59.—(All figures $\times 1$): 37, *Vellozia maxillarioides* L. B. Smith (*Maguire, Magalhães & Maguire* 49268), apex of branch. 38, *V. fruticosa* L. B. Smith (*Maguire, Magalhães & Maguire* 49130), section of leaf-blade; 39, capsule. 40, *V. grao-mogulensis* L. B. Smith (*Maguire, Magalhães & Maguire* 49218), section of leaf-blade; 41, flower; 42, phalange of stamens. 43, *V. bicolor* L. B. Smith (*Maguire, Magalhães & Maguire* 49037), section of leaf-blade; 44, capsule; 45, phalange of stamens (remnant). 46, *V. mollis* L. B. Smith (*Maguire, Magalhães & Maguire* 49156), section of leaf-blade; 47, capsule; 48, phalange of stamens (remnant). 49, *V. spiralis* L. B. Smith (*Maguire, Magalhães & Maguire* 49261), apex of leaf-blade; 50, flower; 51, phalange of stamens. 52, *V. coronata* L. B. Smith (*Maguire, Magalhães & Maguire* 49114), section of leaf-blade; 53, capsule; 54, phalange of stamens (remnant). 55, *V. marcescens* L. B. Smith var. *marcescens* (*Maguire, Magalhães & Maguire* 49259), section of leaf-blade; 56, capsule; 57, phalange of stamens (remnant). 58, *V. ciliata* L. B. Smith (*Maguire, Magalhães & Maguire* 49158), section of leaf at junction of blade and sheath; 59, scape and capsule.



(For explanation see opposite page)



FIGURES 60-70.—(All figures $\times 1$): 60, *Fellozia pulchra* L. B. Smith (Maguire, Magalhães & Maguire 49289), apex of leaf-blade; 61, flower; 62, stamen. 63, *Barbacenia magalhaesii* L. B. Smith (Maguire, Magalhães & Maguire 49094), section of leaf-blade; 64, flower; 65, stamens. 66, *B. sessiliflora* L. B. Smith (Magalhães 6400), section of leaf-blade; 67, flower; 68, stamen. 69, *B. albiflora* L. B. Smith (Maguire, Magalhães & Maguire 49213), section of leaf-blade; 70, flower