

NOTES ON NEOTROPICAL EUPHORBIACEAE

1. Synopsis of South American Sapium

E. Jablonski

New York Botanical Garden

This is the first attempt to present a dichotomous key for this difficult genus. The great variability of characters, very few with diagnostic value, has for a long time resisted all attempts to put this genus in order.

Müller of Argau in 1863-1875 fighting these difficulties ended up with a confused tri-nominal labyrinth.

W. Botting Hemsley in 1900-1909 presented a series of 35 drawings in Hooker's Icones. The analytical details are accurate and the drawings beautiful, but the nervature and margin of leaves are often misrepresented and are apparently the product of the draftsman's imagination.

Jacques Huber's work in 1906-1912 was no doubt the best work ever done on this genus. Adhering to a clear binominal approach and treating the genus by separate geographic districts he succeeded in achieving much clarification. It is unfortunate that he was unable to finish the Hylaea, the most important of all areas.

Pax and Hoffmann in 1912-1924 with their usual thoroughness compiled all the knowledge available up to that time but did little to treat the material critically.

Lanjouw in 1931 made very significant progress in clarifying the taxonomy of S. klotzschianum and related species.

Croizat in 1943-5 described a number of new species from Colombia and Venezuela presenting them in brilliant discussions and giving valuable critical observations, but as usual has carefully avoided to clarify their systematic positions.

The key presented in the following no doubt requires improvements. The 83 binominals so far published have been reduced to 58. Further improvements and reduction will be possible when more and better material will become available.

A. Subgenus Sapium. Inflorescentia spicata cymulifera

1. Styli persistentes. Petioli longi (2-4 cm). Sect.

Emmenostylum

2. Lamina basi ariculata

3. Folia margine integerrima, 7-8 cm longa (Venez: D.F., Mérida)..... 1. stylare
3. Folia sat regulariter serrata, 15-18 cm longa (Colombia)..... 2. putumajense
2. Lamina basi non auriculata; venae 15-25-jugae. Folia 10-14 cm longa (Colombia)..... 3. verum
1. Styli non persistentes
4. Glandulae petiolares obsoletae vix visibiles. Petioli 2-4.5 cm longi (Hylaea occidentalis)
5. Glandulae petiolares infra medium petioli insertae. Folia 8-21 cm longa 4.5-8 cm lata, basi rotundata vel subcordata (West Hylaea)..... 4. marmieri
5. Glandulae petiolares apice petioli insertae. Folia basi cuneata (West Hylaea, Colombia).. 5. eglandulosum
4. Glandulae petiolares conspicuae (excepto S. haematospermo, foliis linearibus facile distincto)
6. Glandulae petiolares, sub laminam inflexae saepe occultae
7. Folia apice plana, elliptico lanceolata vel oblanceolata; venae pauci-jugae (6-12)
8. Folia minora (3.5-6 cm longa, 1.5-2 cm lata), obovata, bicoloria, subtus opaca, firme coriacea, margine leviter dentata, saepe revoluta; venae subtus distinctae sed non prominentes (Brazilia orientalis)..... 6. sellowianum
8. Folia majora (10-23 cm longa, 3-6 cm lata), membranacea vel chartacea, concoloria, viridia, longe acuminata, margine obsolete dentata plana; venae arcuato-adscendentes, 6-12 jugae (Guiana, Pará)..... 7. microdentatum
7. Folia apice cucullato-inflexa vel calloso-incrassata
9. Petioli elongati, plus quam 1/4 laminae longi (Rio de Janeiro)..... 8. longipes
9. Petioli breviusculi, non 1/4 laminae attingentes (Rio de Janeiro)..... 9. sublanceolatum
6. Glandulae petiolares, variae sed nunquam inflexae neque sub laminam occultae
10. Folia chartacea vel submembranacea concoloria, viridia; venae subtus non prominentes
11. Folia apice plana parva (6.5-9 cm longa, 3 cm lata); venae paucijugae (5-10) arcuato-adscendentes
12. Petioli breviusculi (0.5-0.9 cm). Folia basi cuneata (Pto. Ayacucho)..... 10. contortum
12. Petioli longi (1.5-2.3 cm)
13. Venae 5-7-jugae, subtus prominentes. Glandulae petiolares graciles, cylindricae (Br. Guiana)..... 11. paucinervium
13. Venae 7-10-jugae, haud prominentes. Glandulae petiolares minores, hemisphaericae. Folia 8-10 cm longa

14. Ovarium 2-loculare (Suriname)..... 12. montanum

14. Ovarium 3-loculare. Folia ovato lanceolata (5.9 cm longa, 2-4 cm lata) (Br. Guiana)..... 13. jenmanii

11. Folia apice cucullato-inflexa

15. Folia minora, obovata vel oblanceolata, minus quam triplo longiora quam lata (7-10 cm longa, 3.5 cm lata) (Suriname, Delta, Bolivar).....

..... 14. prunifolium

15. Folia majora, lanceolata (10-18 cm longa, 2.5-3 cm lata), quadruplo longiora quam lata, apicem basinque versus symmetrice angustata

16. Glandulae petiolares breviusculae (Fr. Guiana, Bolivar, R. Branco, Pará, Ceara)..
..... 15. lanceolatum

16. Glandulae petiolares patentes, longae (Pará)..... 16. patens

10. Folia coriacea, concoloria vel bicoloria in sicco brunnea, nec viridia

17. Folia lata non linearia (minus quam 8-plo longiora quam lata)

18. Folia margine integra vel tantum subserrulata

19. Folia apice plana, rariter subcucullata

20. Costae secundariae arcuato-ascendentes

21. Folia elliptica vel subrotundata (minus quam bis longiora quam lata)

22. Petioli breviusculi (Brazilia orientalis)..... 17. obovatum

22. Petioli longi (1-2 cm); venae arcuatae

23. Venae 8-10-jugae prominulae; glandulae petiolares conicae (Peru, Colombia). 18. bogotense

23. Venae 5-6-jugae; glandulae petiolares subcylindricae (Peru) 19. pavonianum

21. Folia elongata (plus quam bis longiora quam lata)

24. Petioli longi (2-4 cm)

25. Glandulae petiolares ovoideae parvulae (cf. S. eglandulosum) (R. Negro, Bolívar, Guianas)..... 20. aubletianum

25. Glandulae petiolares cylindricae distinctae; venae 20-22-jugae (Ecuador)..... 21. utile

24. Petioli breviusculi (0.1-0.3 cm). Folia lanceolata (8 cm longa, 3 cm lata); venae 15-jugae (Vichado, Colombia)..... 22. myrmecophyllum

20. Costae secundariae laxae, graciles, patentes, saepius haud anastomantes, dictyodromae, ultimae vix perspicuae
26. Petioli 2.5-4 cm longi; venae 20-jugae. Folia 14 cm longa, 5 cm lata (Putumayo, alt. 2200 m)..... 23. cuatrecasasii
26. Petioli 1-1.5 cm longi; venae 5-jugae. Folia 14 cm longa, 6 cm lata, lanceolata, utrinque acutata (Ecuador).... 24. steyermarkii
19. Folia apice cucullato-inflexa (cf. *S. ixiamasense*)
27. Nervatura subtus prominula, densa; venae rectae vel arcuato-ascendentes
28. Petioli longiusculi (1.5-4 cm)
29. Capsula sessilis
30. Glandulae petiolares graciles divaricatae, rectae vel curvatae
31. Folia lata (latitudo plus quam dimidium longitudinis), 7.7-12 cm longa, 3-5.5 cm lata (cf. *naiguatense*) (Brazilia orientalis inter Pará et S. Cat.).... 25. klotzschianum
31. Folia angusta (latitudo minus quam dimidium longitudinis)
32. Venae multijugae (17-20)
33. Folia basi subrotundata (12-30 cm longa, 3.5-7 cm lata) (Guiana).... 26. hippomane
33. Folia basi acuta vel anguste cuneata (6.5-14 cm longa, 3.2-4.5 cm lata) (Guiana).... 27. hemsleyanum
32. Venae paucijugae (12-15). Folia basi cuneata
34. Folia majora (8-15 cm longa, 3.5 cm lata) (Peru, Amazonas: Bom Fim)..... 28. taburu
34. Folia minora (4.2-9 cm longa, 1.9-2.5 cm lata) (Venez: Biscaine, 1000 m)..... 29. obtusilobum

30. Glandulae petiolares minores, hemisphaericae. Folia basi subrotundata, vel late cuneata
35. Folia supra opaca, metallice nitentia (Peru, Hylaea occid.)..... 30. aereum
35. Folia supra nitida (Peruv. Andes)..... 31. poepigii
29. Capsula stipitata. Folia basi cuneata (9 cm longa, 5 cm lata). Venae 8-11-jugae (Venez: D.F., 50 m alt.)..... 32. naiguatense
28. Petioli breviusculi (0.2-1.2 cm). Lamina chartacea. Folia apice obscure cucullata (2-8 cm longa, 2-3.5 cm lata). Venae 12-15-jugae (Peru: Tarapoto)..... 33. peruvianum
27. Nervatura subtus obscura, laxa
36. Spiculi depauperati. Folia minora (3-6 cm longa, 1.6-2.0 cm lata). Petioli breviusculi (0.4-0.6 cm) (Venez: Valera).. 34. paucistamineum
36. Spiculi elongati densi. Folia 9-18 cm longa, 3-4 cm lata, plerumque cucullata. Venae 12-15-jugae. Petioli longiusculi (1.3 cm) (Peru, Bolivia, Matto Grosso)..... 35. ixiamasense
18. Folia margine distincte serrata vel crenulata
37. Folia majora (plus quam 10 cm longa, ad 18 cm longa) lanceolata vel ovato elliptica (2-5 ter longiora quam lata)
38. Petioli breviusculi (0.8-1.0 cm longi). Nervatura dense parallela, subtus arcte prominula; venae multijugae (15-25-jugae) arcuato-adscendentes. Folia lato-elliptica (12.5 cm longa, 5.3 cm lata) margine argute serrata (Paraguay: Minas Geraes)..... 36. hasslerianum
38. Petioli longiusculi (1.0-3.5 cm longi). Nervatura laxa; venae 12-15-jugae subtus graciliores subimmersae
39. Folia ellitica, duplo-subtriplo longiora quam lata
40. Folia margine modice crenulata basi subrotundata, apice modice cucullata (Paraná, Minas Geraes)..... 37. paranaense
40. Folia margine argute dentata apice leviter cucullata vel plana basi cuneata (Ins. F. Noranha, Maturin, Cristobal ?)..... 38. sceleratum

39. Folia anguste lanceolata, acuminata, triplo-quadruplo longiora quam lata
41. Glandulae petiolares parvae. Folia margine modice crenulata (Colombia)..... 39. aucuparium
41. Glandulae petiolares graciles cylindricae, divaricatae (Pará: Santarem, Belem)..... 40. ciliatum
37. Folia minora (2.5-10.0 cm) apice plana (cf. triste)
42. Folia calloso-marginata, obtuse crenulata
43. Folia lanceolata, quadruplo longiora quam lata, 10 cm longa, 1-2 cm lata. Venae distinctae (Goyaz, Minas S. Paulo, Paraguay)..... 41. marginatum
43. Folia minora elliptico-lanceolata, bis longiora quam lata
44. Folia ovato-elliptica 4.5 cm longa, 2 cm lata (Paraguay)..... 42. paraguarense
44. Folia anguste elliptica
45. Folia 5-7 cm longa (Bahia)..... 43. cicatricosum
45. Folia 2.5-3 cm longa cucullata (Goyaz, Piauh).... 44. triste
42. Folia non calloso-marginata
46. Folia oblongo-lanceolata, basi cuneata, 2-3.5 cm lata, apice acuminata, margine argute serrata (Pernambuco)..... 45. argutum
46. Folia elliptico-lanceolata
47. Petioli breviusculi
48. Folia crenulata sed non argute serrata
49. Folia haud disticha
50. Folia reticulata, subtus pallida (Bahia, Pará)..... 46. pallidum
50. Folia non reticulata, concoloria
51. Columna stylaris brevis (Piauh, Rio Grande del Sul, Uruguay)..... 47. montevidense
51. Columna stylaris elongata (Sta. Catarina)..... 48. muelleri
49. Folia, disticha, 2.8 cm longa, 1-2 cm lata (Uruguay).... 49. gibertii

- 1967 Jablonski, 48. Folia regulariter argute crenata. Venae paulo prominentes. Folia 6-10 cm longa, 2-3.5 cm lata (Venezuela)..... 50. albomarginatum
47. Petioli longiusculi. Folia crenulata sed non argute crenata (Sta. Catarina, R. Gr.del Sul)..... 51. submarginatum
17. Folia linearia, 8-20-plo longiora quam lata. Petioli brevissimi. Venae immersae
52. Ovarium 2-loculare
53. Folia 11-15 cm longa, 0.4-0.7 cm lata (Bolivia)..... 52. bolivianum
53. Folia 10-20 cm longa, 1.5-2.5 cm lata. Glandulae petiolares parvae, sed distinctae (Argentina, Paraguay, Corrientes, Piahy) (The Piahy type is 3-carpellate)..... 53. longifolium
52. Ovarium 3-loculare
54. Folia minus quam 6 cm longa, 0.5-0.7 cm lata (Peru)..... 54. stenophyllum
54. Folia magis quam 10 cm longa
55. Folia magis quam 1.8 cm lata (Tucuman)..... 55. saltense
55. Folia minus quam 1.7 cm lata
56. Folia 1.0-1.6 cm lata. Glandulae petiolares obscurae, saepe nullae (Argentina, Uruguay, Paraguay)..... 56. haematospermum
56. Folia 0.2-0.6 cm lata (Paraguay)..... 57. linearifolium
- A. Subgenus Pseudo-senefeldera. Inflorescencia paniculata)Alto Orinoco)..... 58. yutajense

Plate 1

Distribution of *Sapium* in South America

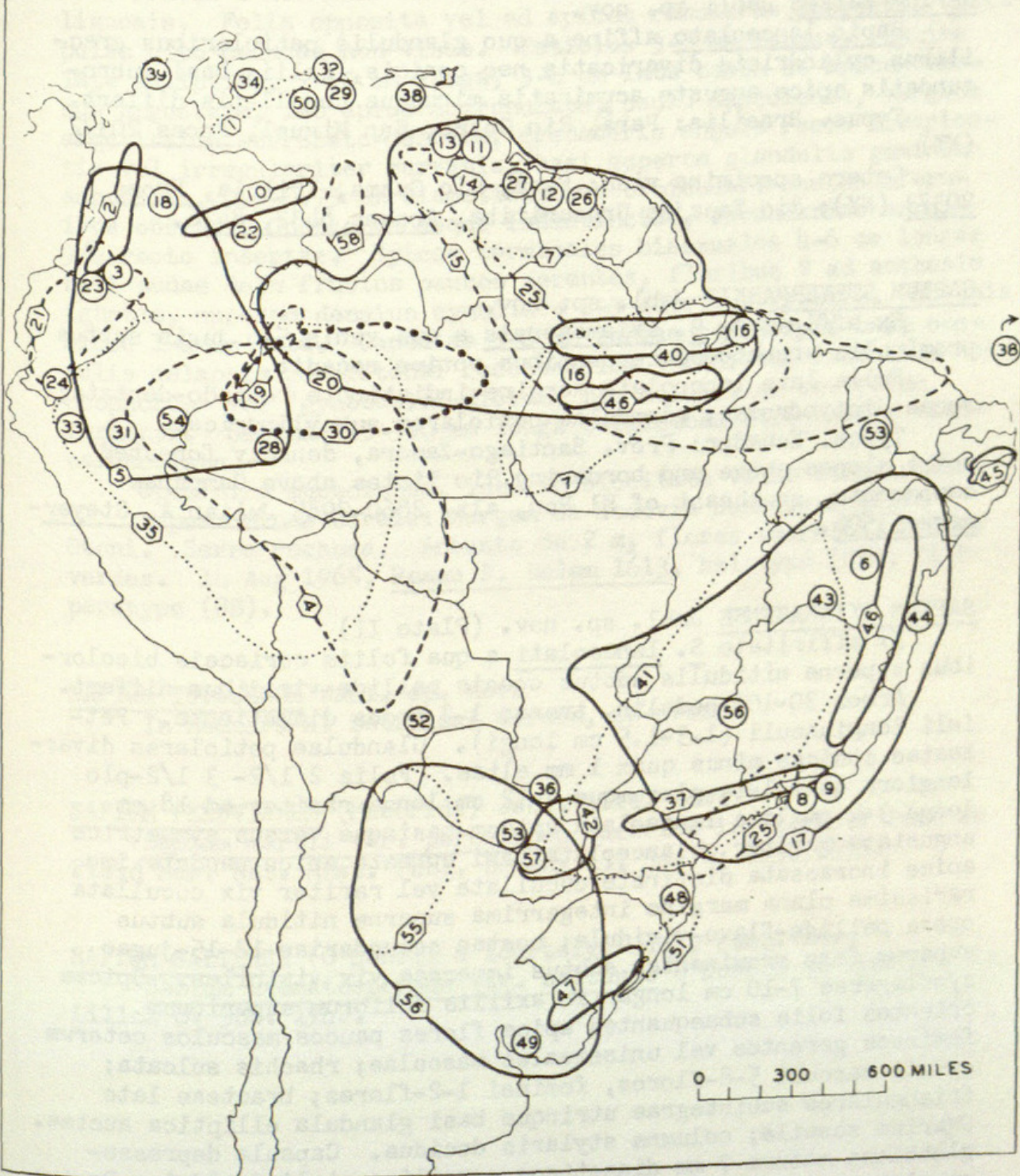
Figures in brackets indicate synonyms

aereum Kl.	30	microdentatum Lanj.	7
albomarginatum Pax & H.	50	montanum Lanj.	12
aubletianum Huber	20	montevidense Huber	47
aucuparium Jacq.	39	muelleri Hemsl.	48
argutum Huber	45	myrmecophilum Croiz.	22
bogotense Huber	18	naiguatense Pittier	32
bolivianum Pax & H.	52	obovatum Kl.	17
cicatricosum Pax & H.	43	obtusilobum Müll. Arg.	29
ciliatum Hemsl.	40	occidentale Huber	(17)
cladogyne Hutch.	(13)	pallidum Huber	46
claussenianum Huber	(25)	paranaense Pax & H.	37
contortum Croiz.	10	patens sp. n.	16
cremostachyum Johnst.	(25)	paucinervium Hemsl.	11
cutrecasassii Croiz.	23	paucistamineum Pittier	34
cupuliferum Herzog	(52)	pavonianum Huber	19
decipiens Preuss	(21)	peloto Pax & H.	(4)
diandrum Pax	(25)	peruvianum stat. nov.	33
eglandulosum Ule	5	petiolare Huber	(25)
fragile Pax & H.	(55)	poeppigii Hemsl.	31
gibertii Hemsl.	49	pohlium Kl.	(25)
glandulatum Pax	(25)	prunifolium Kl.	14
glandulosum Morong	(53)	punctatum Kl.	(41)
guaricense Pittier	(50)	putumayense Croiz.	2
haemospermum Müll. Arg.	56	rojasii Levl.	(56)
hamatum Pax & H.	(31)	saltense stat. nov.	55
hasslerianum Huber	36	sceleratum Ridley	38
hemsleyanum Huber	27	sellowianum Huber	6
hippomane E.P.Meyer	26	serratum Müll. Arg.	(47)
intercedens Huber	(25)	stenophyllum Huber	54
ixiamasense sp. n.	35	steyermarkii sp. n.	24
jermanii Hemsl.	13	stylare Müll. Arg.	1
klotzschianum Huber	25	sublanceolatum Huber	9
lanceolatum Huber	15	submarginatum Huber	51
leitera Gleason	(4)	taburu Ule	28
leptadenium Huber	(25)	tenellum Pax & H.	(55)
linearifolium Hemsl.	57	thomsonii Jumelle	(3)
longifolium Huber	53	tijucense Huber	(47)
longipes Huber	8	tolimense Jumelle	(3)
marginatum Müll. Arg.	41	triste Huber	44
marmieri Huber	4	utile Preuss	21
martii Huber	(17)	verum Hemsl.	3
yutajense sp. n.	58		

Distribution of *Sapium* in South America.

Figures in circles indicate species with restricted distribution.

Figures in hexagons indicate species with broad distribution. Outline of areas approximate.





Jablonski, Eugene. 1967. "Notes on neotropical Euphorbiaceae. 1. Synopsis of South American Sapium." *Phytologia* 14, 441–449.

View This Item Online: <https://www.biodiversitylibrary.org/item/51598>

Permalink: <https://www.biodiversitylibrary.org/partpdf/176624>

Holding Institution

Missouri Botanical Garden, Peter H. Raven Library

Sponsored by

Missouri Botanical Garden

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: Phytologia

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.