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Supplementary Notes on the American Species of *Strychnos* — VI

by

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Since our last serial paper on *Strychnos* appeared in print (6), we have examined approximately 200 new collections. The great majority of these specimens were recently collected by several persons (Black, Ducke, Fróes, Schultes and others) all associated with the Instituto Agronômico do Norte, in connection with determined efforts of its present Director, F. C. Camargo, in making the Institute a center of botanical explorations of the Amazonia. There is no question that much was accomplished by this group during the last few years and this is reflected in abundant new collections of *Strychnos*. If the explorations will proceed at the same pace, it will be not too long before we will have a satisfactory record of the species of *Strychnos* and of their distribution in the Amazon. The basins of Rio Solimões, Rio Negro, and Rio Juruá are already well covered and collected. The regions of which we still know next to nothing as yet, at least as far as *Strychnos* is concerned, are only the basin of Rio Xingú and the basins of the northern tributaries of the Amazon in the State of Pará.

It is also satisfactory to report that since we have published in 1942 our first paper on *Strychnos* (1) a good progress has been made in the knowledge of *Strychnos* of the Amazonian Colombia. The credit is largely due to Dr. R. E. Schultes who, over a period of several years, has made rather extensive collections in the region.

The collections examined extend our knowledge of certain species. Of the many extensions of ranges for a considerable number of species should be the first record of *S. Melinoniana* for Brazil and of *S. javariensis* and *S. subcordata* for Colombia.

The species noted in this supplement are arranged in the same order, and the place of deposit of specimens is shown by the same abbreviations, as in our previous papers on *Strychnos* (1, 2, 3, 4, 5, 6). The following additional abbreviations are used:

RB: Rio de Janeiro (Brazil) Jard. Botânico.

SP: São Paulo (Brazil) Secção de Bot. e Agr.

2. *Strychnos ramentifera* Ducke

Brazil: Pará: basin of Rio Tapajós, *Jard. Bot. Rio Jan.* 18542 (RB).

The first record of the species from the basin of Rio Tapajós.

4. *Strychnos rondeletoides* Spruce

Brazil: Amazonas: basin of Rio Negro, *Black* 48-2634 (Rio Cuiary); *Schultes and Lopez* 8937, 9014 (lower Vaupés), 9209, (mouth of Rio Xie), 9617 (near São Felipe); *Fróes* 22085, 22096, 22101, 22106, 22120, 22238, 22247, 22253, 22262, 22273, 22306, 22308, 22539; (Rio Padauiry), 22602, 22904, 23294, ? 23325, ? 23551.

The specimens *Fróes* 22247 and 22308 approach *S. Barnhartiana*.

4a. *Strychnos macrophylla* Barb. Rodr.

Brazil: Amazonas: basin of Rio Negro, near Manaus, *Ducke* 1975.

8. *Strychnos trinervis* (Vell.) Mart.

Brazil: Parahyba: *Vasconcelos* 422 (R). Pernambuco: Recife: Dois Irmãos, hill forest, *Ducke* s. n. (Febr. 19, 1948). Minas Gerais: Coronel Pacheco, *Heringer* 44539 (SP). Espírito Santo: Rio Doce, *Jard. Bot. Rio Jan.* 57998 (RB). São

Paulo: *Loefgren* 13169 (SP; Santa Branca); *Loefgren and Edwall* 13163 (SP; Iporanga); *Gonçalves* 46172 (SP; Cantareira).

The cited specimens are the first seen by us from the States of Parahyba, Pernambuco and São Paulo.

9. *Strychnos panamensis* Seem.

Colombia: Antioquia: Rio Mulatos, East of Turbo, *Oscar Haught* 4951 (US).

11. *Strychnos divaricans* Ducke.

Brazil: Pará: basin of Rio Guama, *Black and Foster* 48-3364 ("acima de S. Miguel, varzea").

12. *Strychnos medeola* Sagot.

Surinam: basin of the Coppename River, *Geijskes s. n.* *Brazil*: basin of Rio Tocantins, *Fróes* 23441.

The first record of the species from the basin of Rio Tocantins.

13. *Strychnos toxifera* Rob. Schomb.

British Guiana: Forest Dept. 5480 (Biara), 5958 (Iramaipang, Kanuku Mts.). *Venezuela*: Amazonas: Cerro Sefato, *Maguire* 28835. *Brazil*: Territory of Rio Branco, *Fróes* 23172 (top of hill, 900 met. elevation), ? 23110 (Rio Amajary, Porto Alegre). Territory of Acre: basin of Rio Juruá, *Fróes* 22453 (São José Cruzeiro do Sul). Pará: basin of Rio Tocantins, ? *Fróes* 23515, ? 23515A, ? 23384, ? 23399, ? 23473.

Local names: Devil-doer, Kwabanaro (British Guiana).

The first record of the species from the basin of Rio Negro.

The five specimens from the basin of Rio Tocantins and *Fróes* 23110 from the basin of Rio Branco are sterile and they are intermediate in their vegetative characters between *S. toxifera* and *S. tomentosa*. Flowers are very much desired. The specimens may well represent a form of *S. toxifera* or be hybrids between *S. toxifera* and *S. tomentosa*.

14. *Strychnos tomentosa* Benth.

British Guiana: Forest Dept. 5824 (Wabuwak, Kanaku Mts.).
Brazil: Territory of Rio Branco: basin of Rio Branco, Serra da Malacacheta, Kuhlmann 509 (RB); basin of Rio Branco, the upper Rio Pacú, *Fróes 23197*. *Pará: basin of Rio Tocantins, Fróes 23471, 23550*.

The first record of the species from the Territory of Rio Branco and from the basin of Rio Tocantins in the State of Pará.

15. *Strychnos diaboli* Sandw.

Brazil: Amazonas: basin of Rio Tonantins, Jard. Bot. Rio Jan. 22339 (RB).

The collector notes on the label: "fornece curare fraco".

16. *Strychnos javariensis* Krukoff

Colombia: Amazonas: Rio Loretoyacu, Schultes and Black 8401. *Putumayo: Schultes 3690, 3691*.

The first record of the species from Colombia. According to Schultes the root is used in Kofán curare.

17. *Strychnos solimoesana* Krukoff

Brazil: Pará: basin of Rio Tocantins, Fróes 23551.

The first record of the species from the State of Pará.

18. *Strychnos Jobertiana* Baillon

Colombia: Putumayo: basin of Rio Putumayo, Schultes, 3692, 3695. *Vaupés: basin of Rio Negro, Schultes and Lopez 9532, 10091*. *Amazonas: basin of Rio Loretoyacu, Schultes and Black 8306, 8486, 46-262*. *Brazil: Amazonas: basin of Rio Negro, Schultes and Lopez 8961* (Rio Içana), *Mello Filho 565* (R; near Manaus).

19. *Strychnos pseudo-quina* A. St. Hil.

Brazil: São Paulo: Loeffgren 13167 (SP), *Edwall 13162* (SP).

21. *Strychnos amazonica* Krukoff

Colombia: Putumayo: basin of Rio Putumayo, ? Schultes 3689. *Brazil: Amazonas: basin of Rio Negro, near Manaus, Ducke 2096*.

22. *Strychnos Peckii* B. L. Robinson

Venezuela: Aragua: Pittier and Nakichenovich 15437 (US). Terr. Amazonas: Rio Cunucunuma, Maguire 29041. Colombia: Vaupés: basin of Rio Negro, Schultes and Lopez 9491. Putumayo: Schultes 3684. Brazil: Amazonas: basin of Rio Negro, Fróes 23333 and 23335 (Rio Cauré, Igarapé Miriti, Igapó). 23263, (Airão, Igarapé Jahú, border of River), 23349 (Rio Unini, Santa Rosa, border of River), 22515, 22582 and 23300 (Rio Padauriry), 22680 (Rio Preto), 22104 (Tapurucoara), 22270 (Rio Içana, near Cachoeira Tunuhy); Territory of Rio Branco: 23000 (Igarapé Agua Boa, Caracarái).

In our paper (3:65) we have stated: "The Luetzelburg specimen (23957) likely is a new record of the species from the state of Ceará or Rio de Janeiro. . . We have been unable to ascertain in what state the Luetzelburg specimen was collected". In a recent private communication Dr. Ducke states that the locality of the collection of this specimen is near the border between Brazil and Colombia in the basin of Rio Vaupés in the State of Amazonas.

24. *Strychnos Erichsonii* Rich. Shomb.

Colombia: Putumayo: basin of Rio Putumayo, Schultes 3682, 3683, 3685. Amazonas: Rio Loretoyacu, Schultes and Black 8437. Brazil: Amazonas: basin of Rio Negro, Schultes and Lopez 10020 (Rio Dimiti); Territory of Rio Branco: Fróes 22916 (Rio Azul, road to Caracarái), 24134 and 23135 (Rio Pacú, Caracarái). Pará: basin of Rio Guamá, Dardano and Black 48-3140, 48-3178, 48-3083, 48-3093.

Local names: Mum-tai-rú-chee or ee-ru-chě or see-a-se-sěp (Rio Putumayo, Colombia).

According to Schultes the plant is used in Kofán curare.

25. *Strychnos Gardneri* A. DC.

Brazil: Matto Grosso: near Cuiabá, Jard. Bot. Rio Jan. 11215 (RB); Caminho do Rosário, Kuhlmann 2235 (SP). Rio de Janeiro: ? Glaziou 9918 (R). São Paulo: Loefgren 13161 (SP).

The first record of the species from the State of Matto Grosso.

28. *Strychnos Mitscherlichii* Rich. Schomb.

Colombia: Amazonas: Rio Loretoyacu, *Schultes and Black* 8388. Brazil: Pará: basin of Rio Tocantins, *Fróes* 23445; basin of Rio Guamá, *Dardano and Black* 48-7070, 48-3082, 48-3146.

The first record of the species from the basins of Rio Tocantins and Rio Guamá in the State of Pará.

29. *Strychnos darienensis* Seem.

Brazil: Territory of Rio Branco: *Fróes* 23018.

30. *Strychnos guianensis* (Aubl.) Mart.

Venezuela: Bolivar: Rio Paraguaza, *Croizat s. n.* (March 7, 1950). Colombia: Putumayo: basin of Rio Putumayo, *Schultes* 3688. Brazil: Amazonas: basin of Rio Negro, *Schultes and Lopez* 8936, *Fróes* 22064, 22086, 22236, 22260 (upper Igarapé da Onça); basin of Rio Solimões, *Jard. Bot. Rio Jan.* 22379 (RB); basin of Rio Amazonas, Tefé, *Black* 47-1542, *Murça Pires* 1341. Pará: basin of Rio Tapajós, *Jard. Bot. Rio Jan.* 22380 (RB); basin of Rio Tocantins, *Fróes* 23434. ? Espírito Santo: *Glaziou* 9944 (R). Territory of Rio Branco: *Fróes* 22942 (Boa Vista, Caracará), 23213 (Água Boa, Caracará), 23136 (upper Rio Pacú); *Jard. Bot. Rio Jan.* 24104 (RB).

The first record of the species from the basin of Rio Tocantins.

The collector notes on the label (24104): "Região do Alto Rio Branco, fronteira da Guiana Inglesa, fornece curare". According to Schultes the plant is used in Kofán curare (Putumayo, Colombia).

30a. *Strychnos glabra* Sagot

Brazil: Amazonas: basin of Rio Negro, *Fróes* 22632 (upper Padauiry); Territory of Rio Branco: *Fróes* 22978 (road Boa Vista — Caracará).

31. *Strychnos subcordata* Spruce

Colombia: Putumayo: basin of Rio Putumayo, *Schultes* 3687. Brazil: Amazonas: basin of Rio Negro, *Fróes* 21445 (Igarapé Curucuhy).

The first record of the species from Colombia.

According to Schultes the plant is used in Kofán curare (Putumayo, Colombia).

32. *Strychnos bicolor* Prog.

Brazil: São Paulo: *São Paulo Sec. Bot. Inst.* 35276 (SP).

33. *Strychnos panurensis* Sprague and Sandw.

Venezuela: Terr. Amazonas: Rio Cunucunuma, *Maguire* 29041-A. *Brazil*: Amazonas: basin of Rio Negro, *Schultes and Lopez* 9903, *Fróes* 22682 (Rio Padauriry).

34. *Strychnos hirsuta* Spruce

Brazil: Amazonas: basin of Rio Negro, *Mello Filho* 567 (R; near Manaos).

35. *Strychnos cogens* Benth.

Colombia: Amazonas: basin of Rio Negro, 22207 (Rio Içana). Territory of Rio Branco: *Fróes* 23149 and 23190 (Rio Pacú), 23198 (Rio Amajary).

36. *Strychnos Melinoniana* Baillon

Surinam: Sectie 0, *Stahel s. n.* (June 12, 1948). *Brazil*: Pará: basin of Rio Tocantins, *Fróes* 23397.

The first record of the species from Brazil.

37. *Strychnos parviflora* Spruce

Brazil: Amazonas: basin of Rio Negro, *Schultes and Lopez* 9018 (Vaupés).

38. *Strychnos Castelnanaeana* Wedd.

Country undesign.: *Jard. Bot. Rio Jan.* 46310 (RB).

39. *Strychnos rubiginosa* DC.

Brazil: Pernambuco: munic. Palmares, *Ducke s. n.* (Febr. 11, 1948) (near Pirangi, hill secondary forest); Recife, *Ducke s. n.* (Febr. 19, 1948) (near Dois Irmãos, hill forest), 2117 (near Brejo de Macacos, secondary forest). Bahia: ? *Jard. Bot. Rio Jan.* 46316 (*Sampaio s. n.*) (RB.) Matto Grosso: *Kuhlmann* 1220 (R), 1222 (R). Espírito Santo ? *Jard. Bot. Rio Jan.*

34227 (*Kuhlmann 19*) (RB; Rio Pancas, Collatina), ? 58000 (*Kuhlmann 06493*) (RB; Rio Doce). Rio de Jan.: *Jard. Bot. Rio Jan.* 3372 (*Kuhlmann s. n.*) (RB; Morro da Urca), ? 55677 (*Kuhlmann s. n.*), *Mello Filho 478* (R; Niteroi). Fed. Dist.: *Mello Filho 98* (R; Ilha Fundão). Loc. undesign.: *Jard. Bot. Rio Jan.* 46321 (RB).

Local names: Capitão (Pernambuco), Quina Branca (Matto Grosso).

The first record of the species from the State of Pernambuco.

In our first paper on the genus (1:310) on the basis of a leaf and a photo of the type (*Glaziov 4883*) we have reduced *S. fulvotomentosa* Gilg to synonymy under *S. rubiginosa*. In our fourth paper (4:348) we have suggested that certain sterile specimens (large leafed plants) all collected in the basin of Rio Doce, Espirito Santo, probably belong with the species and these specimens were cited by us with a question mark under the species. Later we came across another sterile specimen doubtless of the same entity as *OVB-54*, *OVB-32*, *OVB-42*, *OVB-68* and *OVB-91*, namely *Gaudichaud s. n.* (P) from the State of Santa Catharina which has been cited by us with a question mark under the species in this manuscript and which was cited through a typographical error without a question mark in our fifth paper on the genus (5:14). We have run into further difficulties with four specimens cited with a question mark in the present paper, namely 58000, 34227, 46316 and 55677. The first sterile specimen (58000) doubtless belongs to the same entity as *OVB-54* etc. The fruiting peduncle of 34227 is very thick (about 3mm. in diam.), the fruit is large (about 2,5 cm. in diam.), several seeded and the seeds about 18 mm. long. whereas the fruiting peduncle of 3372 with the species without reservations and the above referred to differences in fruit characters of 34227 makes it likely that it is specifically different from *S. rubiginosa*. The specimen 46316 is very distinctive in appearance. The inflorescence is very profusely flowered, the calyx-

lobes and bracts are narrowly lanceolate and finely acute at the apex.

None of the collections discussed here and presenting difficulty in aligning them with *S. rubiginosa* are referred by us to a district, specific or varietal name as this would not solve the entire problem. For the satisfactory disposition of one or more entities involved, good flowering and fruiting specimens are necessary as well as a thorough review of several species described from the Southern Brazil, particularly

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Pág.	linha	onde se lê	leia-se
11	13	Brazil: Fed. Distr.: Morro do Grajaú, Mello Filho 549, 572.	40a. Strychnos Torresiana Krukoff & Monachino. Brazil: Fed. Distr.: Morro do Grajaú, Mello Filho 549, 572.

Brazil: Rio de Jan.: *Glaziou 4097* (R).

42. *Strychnos parvifolia* DC.

Brazil: coll. *undesign.* 46963 (SP). Ceará: *Drouet 38337* (SP). Espírito Santo: basin of Rio Doce, *Luiz Emigdio, Ernani Bueno and Oswaldo Vital Brasil, "OVB-14", "OVB-44", "OVB-48", "OVB-52", "OVB-60", "OVB-64"*. Rio de Jan.: *Mus Nac. Rio 43562* (R). São Paulo: *Hoehne 25305* (SP), *Rombouts 40862* (SP).

The first record of the species from the State of Espírito Santo.

45. *Strychnos nigricans* Prog.

Brazil: Amazonas: basin of Rio Negro, *Ducke s. n.* Febr. 11, 1947; near Manaus. Matto Grosso: *Caceros, Comiss. Rondon 4510* (SP). Minas Geraes: *Jard. Bot. Rio Jan. 45535* (RB), Rio de Jan. *Jard. Bot. Rio Jan. 51440* (RB), Fed. Distr.: *Mello*

lobes and bracts are narrowly lanceolate and finely acute at the apex.

None of the collections discussed here and presenting difficulty in aligning them with *S. rubiginosa* are referred by us to a district, specific or varietal name as this would not solve the entire problem. For the satisfactory disposition of one or more entities involved, good flowering and fruiting specimens are necessary as well as a thorough review of several species described from the Southern Brazil, particularly *S. fulvotomentosa* which, it is now obvious, should be carefully reviewed, and of *S. Torresiana* which is known to date only from sterile material.

Brazil: Fed. Distr.: Morro do Grajaú, *Mello Filho* 549, 572.

The species has been known hitherto only from two sterile collections from the State of Espirito Santo.

41. *Strychnos acuta* Prog.

Brazil: São Paulo: Cantareira, ? coll. *undesign.* 40213 (SP).

41a. *Strychnos albiflora* Prog.

Brazil: Rio de Jan.: *Glaziou* 4097 (R).

42. *Strychnos parvifolia* DC.

Brazil: coll. *undesign.* 46963 (SP). Ceará: *Drouet* 38337 (SP). Espirito Santo: basin of Rio Doce, *Luiz Emigdio*, *Ernani Bueno* and *Oswaldo Vital Brasil*, "OVB-14", "OVB-44", "OVB-48", "OVB-52", "OVB-60", "OVB-64". Rio de Jan.: *Mus Nac. Rio* 43562 (R). São Paulo: *Hoehne* 25305 (SP), *Rombouts* 40862 (SP).

The first record of the species from the State of Espirito Santo.

45. *Strychnos nigricans* Prog.

Brazil: Amazonas: basin of Rio Negro, *Ducke s. n.* Febr. 11, 1947; near Manaus. Matto Grosso: Caceros, *Comiss. Rondon* 4510 (SP). Minas Geraes: *Jard. Bot. Rio Jan.* 45535 (RB), Rio de Jan. *Jard. Bot. Rio Jan.* 51440 (RB), Fed. Distr.: *Mello*

Filho 456 (R), 461 (R), 537 (R). São Paulo: S. José do Rio Pardo, *Loefgren* 13168 (SP).

Local names: Roseira do mato (Minas Geraes).

The first specimen examined by us from the state of São Paulo.

47. *Strychnos longisepala* Krukoff

Brazil: Amazonas: basin of Rio Juruá, *Ule* 51^{RE} (RB).

59. *Strychnos brasiliensis* (Spreng.) Mart.

Brazil: Minas Geraes: *Hoehne* 2710 (SP). *Fed. Distr.:* *Mello Filho* 463 (R), 535 (R), 536 (R). Rio de Jan.: *Jard. Bot. Rio Jan.* 55680 (RB). São Paulo: *Loefgren* 13160 (SP), *Handro* 46424 (SP), 44417 (SP), *Hoehne* 2547 (SP), *Roth* 48409 (SP), *Santos* 46964 (SP).

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