

A BIBLIOGRAPHY OF GUARANA

by

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LIBRARY  
SCHOOL OF PHARMACY

A Thesis submitted for the Degree of  
GRADUATE IN PHARMACY

UNIVERSITY OF WISCONSIN

1930

Cadet, C. L. 1817

Sur le Quarano

Jour. de Pharm. et de chim, 3, p. 259 (Ibid., 32, p. 515)

Gives an account of drug, its method of preparation, analysis and probable botanical origin.

Spix, J. and Martins, G. 1824

Reise in Brazil

v. 3, p. 1098 (U. S. Dispens., 15 ed., p. 731; Ibid., 17 ed., p. 672; Ibid., 19 ed., p. 605; Bentley and Tumin, Medicinal Plants, v. 1, p. 67.)

Gives a description of the plant, and tells of its use by the natives.

Martins, T. 1826

Das Guarantin, ein neuer Pflangenbildungstheil

Arch. f. d. ges. Naturl., Niirnb, 7, p. 266 (Surgeon General's Library, S. 1, v. 5, p. 639).

The original was not available.

Martins, J. B. 1829

Ueber einige brasilionische Arzneimittel

Buchner's Report d. Pharm., 31, p. 370 (Bentley and Tumin, Medicinal Plants, v. 1, p. 67).

Gives an account of the preparation of Guarana and the name of the plants yielding the seed.

Berthenot, et Dechastelus,

1840

Du guarana, de l'existence de la cafeine dans ce produit

Jour. de pharm. et de chim., 26, p. 518 (King's Am. Dispens., 13 ed., v. 2, p. 965; Surgeon General's Library, S. 1, v. 5, p. 638; Bull. gen. de therap., 19, p. 108).

Extracted the constituents of guarana with different solvents and reports that the constituent known as guaranine is nothing but caffeine.

Dechastelus,

1840

Du Guarana et de son emploi en medecine sous le nom de Pouillinia.

Jour. de Pharm. et de chim., 26, p. 775 (Am. Jour. Pharm. 13, p. 53; Am. Jour. Pharm., 17, p. 83).

Discusses the constituents of Guarana and gives formulas for preparations containing Guarana.

Gavrelle,

1840

Sur une nouvelle substance medicale, le poullinia

Jour. de chimie med., 6, p. 401 (Am. Jour. Pharm., 13, p. 54; Bentley and Tumin, Medicinal Plants, v. 1, p. 67; Bull. Lloyd Libr., No. 18, p. 46).

Gives a description of the drug, early history, constituents, methods of administration and formulas for preparing pastilles, syrups, pills, pouders, tinctures, and pomades.

Virey, J. J.

1840

Histoire naturelle medicale du sur concret, venout du Bresie sons le nom de guarana.

Jour. de pharm. et de chim., 26, p. 514 (U. S. Dispens., 5 ed., p. 1284; Ibid., 6 ed., p. 1287; Ibid., 7 ed., p. 1286; Ibid., 8 ed., p. 1294; Ibid., 9 ed., p. 1368; Ibid., 10 ed., p. 1378; Ibid., 11 ed., p. 1469; Ibid., 12 ed., p. 1577; Ibid., 13 ed., p. 1670; Ibid., 14 ed., p. 1726; Ibid., 15 ed., p. 731; Ibid., 17 ed., p. 672; Ibid., 19 ed., p. 605; Ibid., 20 ed., p. 540; Am. Jour. Pharm., 12, p. 340; Buchner's Report d. Pharm., 31, p. 370).

Gives early history, account of preparation of drug, physical properties and its use by the native Indian tribes in Brazil.

Baillan, H.

1843

(Poullinia Sorhilis)

Hist. Plant, v. 5, fig. 382, 3 (seed) (Bentley and Tumin, Medicinal Plants, v. 1, p. 67)

The original was not available.

Martins, J. B.

1843

(Guarana)

Materia Medica, Brazil, p. 59 (Bentley and Tumen, Medicinal Plants, v. 1, p. 67)

(Discusses the habitat of Guarana and says that the seeds ripen in October or November.)

Schnitzlein, J.

1843

## (Poullinia Sorbilis)

Iconographia, 4, p. 230, fig. 1 (Bentley and Tumen, Medicinal Plants, v. 1, p. 67).

(Gives a picture of the guarana plant showing its characteristics.)

Wood, G. B. and Boche, F.

1843

## Guarana

U. S. Dispens., 5 ed., p. 1284 (Ibid., 6 ed., p. 1282; Ibid., 7 ed., p. 1286; Ibid., 8 ed., p. 1294; Ibid., 9 ed., p. 1368; Ibid., 10 ed., p. 1378; Ibid., 11 ed., p. 1469; Ibid., 12 ed., p. 1577; Ibid., 13 ed., p. 1670; Ibid., 14 ed., p. 1726; Bentley and Tumen, Medicinal Plants, v. 1, p. 67)

Gives description of plant, habitat, history and therapeutic action of the drug.

Carson, J.

1845

## Notice of some Brazilian Drugs - Guarana

Am. Jour. Pharm., 17, p. 83.

Gives description of Guarana, among other drugs.

Daunt, R.

1848

## Clinical Notes

Medical Times, Lond., 18, p. 250 (Surgeon General's Library, S. 1, v. 5, p. 639)

The original was not available.

Hooker, W. J.

1851

(Guarana)

Hooker's Lond. Jr. Bot., , p. 194 (Bentley and Tumen,  
Medicinal Plants, v. 1, p. 67)

(Gives the medicinal properties and uses of guarana.)

1851

(Guarana)

Jour. Bot., , and Kew Gardens Misc., 3, p. 94  
(Bentley and Tumen, Medicinal Plants, v. 1, p. 67)

(Tells of the habitat of the plant and describes the  
flowers and seeds.)

Bergelius, J. J.

1856

Thein (Caffein) (Guarana)

Lehrbuch der Chemie., 5 ed., p. 165.

States that the alkaloid caffeine was extracted from  
Guarana by Martins in 1826.

Debout,

1857

Note pharmacologique sur le guarana or pouilliana

Bull. gen. de therap., 52, p. 497 (Surgeon General's  
Library, S. 1, v. 5, p. 639)

The original was not available.

Herve,

1857

(Guarana)

Brit and For. Med. chi. Rev., 42, p. 192 (Pharm. Jour. 30, p. 221; U. S. Dispens., 13 ed., p. 1670; Ibid., 14 ed., p. 1726; Bull. Gen. de therap. 26, p. ; Proc. Am. Pharm. Assoc., 7, p. 76)

(States that guarana has been used by the author successfully for five or six years for diarrhoea.)

Stenhouse, J.

1857

Determination of the amount of Theine in Guarana

Pharm. Jour., 16, p. 212 (Am. Jour. Pharm., 29, p. 68; Ibid., 49, p. 337; Pharm. Jour., 30, p. 221; U. S. Dispens., 11 ed., p. 1467; Ibid., 13 ed., p. 1670; Ibid., 14 ed., p. 1726; Ibid., 15 ed., p. 731; Ibid., 17 ed., p. 672; Ibid., 19 ed., p. 605; King's Am. Dispens., 18 ed., v. 2, p. 965; Bentley and Tumen, Medicinal Plants, v. 1, p. 67)

Gives data concerning amount of theine in Guarana.

1858

(Guarana)

Ann. de Therap., , p. 70 (U. S. Dispens., 12 ed., p. 1577; Ibid., 13 ed., p. 1670; Ibid., 14 ed., p. 1726; Ibid., 15 ed., p. 731)

(Gives the derivation of the name and tells of the habitat and preparation of guarana)

Editor

1861

Guarana

Chem. and Drugg., 2, p. 50.

Gives botanical source of Guarana and discusses the uses that are made of the drug.

Fournier;

1861

## Sur le poullinia

Jour. de pharm. et chim., 72, p. 291 (Am. Jour. Pharm., 42, p. 558; U. S. Dispens., 14 ed., p. 1726; Ibid., 15 ed., p. 731; Ibid., 17 ed., p. 673; Ibid., 19 ed., p. 605; Ibid., 20 ed., p. 540; Pharm. Jour., 30, p. 221; King's Am. Dispens., 18 ed., p. 965; Bentley and Tumen, Medicinal Plants, v. 1, p. 67)

Gives a list of the constituents that have been isolated from Guarana.

Montigazza, P.

1865

## Del guarana, nuovo alimento nerroso

R. Ist. lomb. di sc. e lett. Rendic. Idr. lett. e sc., mor. e polit., Melona, 2, p. 100 (Ann. univ. di med., 192, p. 99; Surgeon General's Library, S. 1, v. 5, p. 639)

The original was not available.

Pecholt, T.

1868

## Poullinia Sorbilis (Guarana)

Proc. Am. Pharm. Assoc., 16, p. 181.

Gives a report on the constituents of Guarana.

Steines, J.

1868

Die Therapeutische Verwerthung der broschonischen Guarana bei dhon. Mogen und Darmketeuh, inchesonders bei Kindern.

Allg. Wien. Med. Ztg., 13, p. 193 (Surgeon General's Library, S. 1, v. 5, p. 639)

The original was not available.

Cooke, M. C.

1870

Guarana - *Poullinia Sorbilis*, Mart.

Am. Jour. Pharm. 42, p. 558 (Proc. Am. Pharm. Assoc., 19, p. 269; Yrbk. Br. Pharm. Conf., 8, p. 41; Pharm. Jour., 30, p. 221; Urbk. Br. Pharm. Conf., 9, p. 27)

Describes the drug, its medicinal properties and constituents.

Ritchie, D.

1870

## (Guarana)

Edinb. Month. Journ. Med. Sci., N. S., 5, p. 467 (U. S. Dispens., 10 ed., p. 1378; Ibid., 13 ed., p. 1670; Ibid., 14 ed., p. 1726; Pharm. Jour., 30, p. 221)

(Guarana is very satisfactory in the treatment of irritation in the urinary passages.)

Miesner, J.

1870

## Die mikroskopischen Charaktere der Guarana

Wien med. Uchnschr., 20, p. 653 (Surgeon General's Library, S. 1, v. 5, p. 639)

The original was not available.

Fristedt, R. F.

1872

## Om Guarana

Upsala h kauf. F ch 7, p. 424 (Surgeon General's Library, S. 1, v. 5, p. 639)

The original was not available.

1872

Poullinia Sorbilis

Drugg. Circ., 16, p. 180 (Proc. Am. Pharm. Assoc., 21, p. 239)

Discusses the uses of Guarana.

Lisle, F. T. de

1873

Guarana Powder in Sick Headache

Chem. and Drugg., 14, p. 210 (Med. Times and Gaz., 1, p. 586)

Reports some of the results when powdered Guarana is used for sick headache.

Hallowell, J.

1873

Guarana

Chem. and Drugg., 14, p. 90 (Pharm. Jour., 32, p. 773; Drugg. Circ., 17, p. 93; Yrbk. Br. Pharm. Conf., 10, p. 37)

Gives a description of the drug, discusses its properties, uses, and history.

Maddowall, W.

1873

Notes on Guarana

Practitioner, 11, p. 161 (Surgeon General's Library, S. 1, v. 5, p. 639)

The original was not available.

Maskey, E.

1873

## Guarana

Brit. Med. Jour., 1873, 1, p. 115 (Surgeon General's Library, S. 1, v. 5, p. 637)

Tells of two cases where guarana has been used for sick headache. The results were very good, the pain having subsided within a few hours after administration.

William, J.

1873

## Sur la Guaranine

Jour. de Pharm., et de chim., 97, p. 224 (U. S. Dispens., 14 ed., p. 1726; Ibid., 15 ed., p. 731; Ibid., 17 ed., p. 672; Ibid., 19 ed., p. 605)

Reports a method of preparing guaranine from the crude drug.

Wilks, S.

1873

## Guarana in Sick Headache.

Drugg. Circ., 17, p. 27 (Brit. Med. Jour., 1873, p. 421; Surgeon General's Library, S. 1, v. 5, p. 639).

A testimonial letter concerning the value of Guarana in sick headache.

Bronstrup, M. P.

1874

## Guarana

Ecléc. Med. Jour., 34, p. 358.

States that the fluidextract of Guarana is an excellent cure for sick headache.

- Caillant, T. P. 1874  
 Guarana for the Cure of Sick Headache.  
 Med. News and Library, 32, p. 9 (Jour. Mat. Med., 13, p. 118)  
 States that powdered Guarana quickly relieved headache in a number of cases.
- Committee 1874  
 Drug Market - Guarana  
 Proc. Am. Pharm. Assoc., 22, p. 615.  
 Quotes range of prices of various drugs, including Guarana.
- Editor 1874  
 Guarana Poullinia  
 Ecléc. Med. Jour., 34, p. 372.  
 Gives the history of Guarana and tells of its uses.
- MacDowal, W. 1874  
 Guarana in Sick Headache  
 Drugg. Circ., 18, p. 62.  
 Reports results obtained with Guarana in sick headache and epilepsy.
- Pugh, F. B. 1874  
 Guarana  
 Richmond and Louisville Med. Times., 18, p. 388 (Surgeon General's Library, S. 1, v. 5, p. 639)  
 The original was not available.

Von Wyck, J. C.

1874

Therapeutical effects of the Poulliana Sorbilis or Guarana

Pacific Med. and Surg. Jour., 8, p. 375 (Surgeon General's Library, S. 1, v. 5, p. 639)

The original was not available.

Kennedy, G. W.

1875

Elixir of Poullinia or Guarana

Am. Jour. Pharm., 47, p. 300 (Pharm. Jour., 35, p. 88; Yrbk. Br. Pharm. Conf., 13, p. 346)

Discusses the preparation of an Elixir of Guarana which is a very palatable preparation for sick headache.

Kollmyer, A. H.

1875

Guarana

Canada Med. Rec., 3, p. 559 (Surgeon General's Library, S. 1, v. 5, p. 637)

The original was not available.

Moore, J. B.

1875

Extract and Fluidextract of Guarana

Pharm. Jour., 34, p. 462 (Drugg. Circ., 19, p. 154; Yrbk. Br. Pharm. Conf., 12, p. 277; Jour. Mat. Med., 13, p. 366)

Gives formulas for making the extract and fluidextract of Guarana, various remarks on preparing the extracts.

Rawson, E. A.

1875

## (Guarana in Chronic Rheumatism)

Irish Hospital Gazette, v. , p. (Ecl. Med. Jour.,  
35, p. 174; Drugg. Circ., 18, p. 142; Jour. Mat. Med.,  
13, p. 313; Ibid., 14, p. 305; Surgeon General's Library,  
S. 1, v. 5, p. 639; U. S. Dispens., 14 ed., p. 1726)

(Reports on the use of guarana; it removes pain when a  
person is suffering from lumbago or rheumatism.)

Wood, T. J.

1875

## Guarana

Am. Med. Weekly, 2, p. 521 (Surgeon General's Library,  
S. 1, v. 5, p. 639)

The original was not available.

Wiern,

1875

## Zur Onswendung der Guarana

Med. Cor. Bl. d. Würtheb. Ärztl. ver., Stuttg., 45, p.  
238 (Surgeon General's Library, S. 1, v. 5, p. 639)

The original was not available.

1876

## (Disagreeable Effects of Guarana)

Med. and Surg. Reporter, 29, p. (New Rem., 5, p. 339)

(Tells of the disagreeable after effects after taking  
Guarana for headache.)

Editor

1877

## Guarana Chocolate

Drugg. Circ., 21, p. 143.

Describes a method of making Guarana chocolate.

Jones, H. W.

1877

## Guarana

Chem. and Drugg., 19, p. 469.

Describes the commercial product in both the rolled and powdered forms.

Greene, F. V.

1877

## On the Tannic Acid of Guarana

Am. Jour. Pharm., 49, p. 388 (U. S. Dispens., 19 ed., p. 605; Ibid., 20 ed., p. 540; King's Am. Dispens., 18 ed., v. 2, p. 965; New Rem., 6, p. 271; Yrbk. Br. Pharm. Conf., 15, p. 70)

Gives results of tests for tannic acid in Guarana. The acid is not like Galle tannic acids but it is a tannin.

Green, F. V.

1877

## Extraction of Caffeine from Guarana

Am. Jour. Pharm., 49, p. 337 (Am. Jour. Pharm., 58, p. 483; Proc. Am. Pharm. Assoc., 34, p. 107; West. Drugg., 8, p. 363; Pharm. Jour., 37, p. 86; U. S. Dispens., 15 ed., p. 731; Ibid., 17 ed., p. 672; King's Am. Dispens., 8 ed., v. 2, p. 965; Yrbk. Br. Pharm. Conf., 14, p. 131)

Gives a method for extracting caffeine from Guarana.

Editor

1878

## Guarana

New Rem., 7, p. 161.

States that Guarana in the powdered condition possesses some quite valuable properties, but that the Elixir and Fluidextract are worthless.

Hahn, E.

1878

## Guarana

Chem. and Drugg., 20, p. 438.

Gives the formula for a secret medicine containing guarana.

Moisch, J. M.

1878

## Guarana

Proc. Am. Pharm. Assoc., 26, p. 900.

Discusses as to what is the best menstruum for Guarana.

Editor (under notes and queries)

1879

## Elixir of Guarana

New Rem., 8, p. 312 (Ibid., 8, p. 368)

Gives a formula for making an elixir of Guarana which is made from simple elixir and the fluidextract of Guarana.

Stille, A. and Moisch, J.

1879

Guarana

Nat. Dispens., 2 ed., p. 1879; Ibid., 3 ed., p. 752;  
Ibid., 5 ed., p. 800.

Gives origin, preparation, description, constituents,  
and uses of the drug.

Bentley, R and Tumen, H.

1880

Poullinia Sorbilis

Medicinal Plants, v. 1, p. 67.

Gives a description of the plant, its habitat, part used,  
common name, preparation, general characters, composition,  
medicinal properties, uses.

Gardner, R.

1880

Elixirs and Their Preparation

Proc. Am. Ph. Assoc., 28, p. 439 ( New Rem., 9, p. 301;  
Ibid., 10, p. 267)

Gives a formula for making Elixir of Guarana. It con-  
tains ten ingredients and is rather a compound elixir.  
There is a general discussion on all elixirs.

Mueller, G. A.

1880

Guarana in Headache.

Eclec. Med. Jour., 40, p. 219.

Reports several cases where the fluidextract of Guarana  
has benefited people in cases of sick headache.

(Comm.) 1881

(Extract of Guarana and Tincture of Guarana)

Formulary, Holland, 7 ed., p. (New Rem., 11, p. 237)

(Gives formulae for making Extract of Guarana and Tincture of Guarana)

Gehe and Company 1881

(Guarana)

Handekbricht, April, 1881 (New Rem., 10, p. 178)

(States that Guarana has dwindled in popularity, although formerly used a great deal in migraine.)

Feenster, J. H. 1882

Guarana

Proc. Am. Pharm. Assoc., 30, p. 569 (Am. Jour. Pharm., 54, p. 523; Ibid., 55, p. 540; Ibid., 58, p. 483; Proc. Am. Pharm. Assoc., 34, p. 107; Drugg. Circ., 26, p. 147; Ibid., 27, p. 162; West. Drugg., 8, p. 363; Pharm. Jour., 42, p. 362; Chem. and Drugg., 24, p. 441; Ibid., 26, p. 460; New Rem., 11, p. 501)

Gives data on amount of caffeine in Guarana and tells how to carry out an analysis of guarana.

Smith, A. A. 1883

(The Frequent Repetition of Doses)

N. Y. Med. Jour., 32, p. (New Rem., 12, p. 88)

(States that 15 minim doses of the fluid extract of Guarana may be given every fifteen minutes for the relief of headache.)

Wood, G. B. and Bache, F. 1883

Guarana

U. S. Dispens., 15 ed., p. 731; Ibid., 17 ed., p. 672.

Gives a description of plant, the preparation of the drug, and its properties.

Dunstone, William. 1884

Diarrhea in Children

Drugg. Circ., 28, p. 9.

Reports favorable results from using Guarana for diarrhea in children.

Squibb, E. R. 1884

Guarana

Ephemeris of Mat. Med., v. 2, p. 612 (Pharm. Jour., 44, p. 165; Proc. Am. Pharm. Assoc., 33, p. 365; U. S. Dispens., 17 ed., p. 672; Ibid., 19 ed., p. 605; Ibid., 20 ed., p. 540; Yrbk. Br. Pharm. Conf., 22, p. 251)

Gives a description of the drug, its early history, therapeutic properties and methods of assay.

Committee 1885

Guarana

Nueva Farmacopea Mexicana, 2 ed., p. 67 (Am. Jour. Pharm., 57, p. 602)

Gives a description of the drug.

Editor

1885

## Elixir of Guarana

Drugg. Circ., 29, p. 145 (Ibid., 30, p. 279)

Gives a formula for making an Elixir of Guarana.

Kline, M. N.

1885

## The Drug Market - Guarana

Proc. Am. Pharm. Assoc., 33, p. 365.

Reports the range of prices of various drugs, including Guarana.

Klie, G.

1885

## Miscellaneous Notes

Proc. Missouri State Pharm. Assoc., 7, p. 65 (Pharm. Record, 5, p. 254).

Gives a method for extracting caffeine from Guarana and states that a sample analysis, contained 3.35% caffeine.

Bochefontaine and Gusset.

1886

## (Guarana)

Chemisch Technische Central Anzeiger, 4, p. 322 (Yrbk. Br. Pharm. Conf., 23, p. 195)

(Gives directions for the extraction of Guaranine and states that the usual yield is 4.5%)

Lyons, A. B.

1886

The Assay of Nux Vomica and its Colenical Preparations

Durgg. Circ., 30, p. 137 (Proc. Am. Pharm. Assoc., 34, p. 107)

Reports on a method of assaying Nux Vomica and its golenical preparations and tells how this method may be used for other alkaloids, including caffeine in Guarana.

Neville, W. R.

1886

Guarana

Proc. Maryland State Pharm. Assoc., 4, p. 48 (Pharm. Record, 6, p. 226; Chem. &amp; Durgg., 29, p. 237)

Gives a description of the drug and describes the method of manufacture of preparations containing Guarana.

RocheFontaine &amp; Gusset

1886

(Preparation of Guaranine)

Chemischtechnischen Central Anzeiger, 4, p. 322 (Am. Jour. Pharm., 58, p. 248; U. S. Dispens., 17 ed., p. 672; Ibid., 19 ed., p. 605; Ibid., 20 ed., p. 540)

(Gives a method for extracting caffeine from Guarana)

Semler, H.

1886

(Guarana)

Die Tropische Aguikultur Ein Handbuk für Pflanzer and Kaufleute (Chem. & Drugg., 29, p. 811).

(Gives a description of Guarana and tells how it is prepared by the natives.)

Snow, H. W.

1886

Guarana - Methods for its assay and the assay of its fluid extract.

Proc. Am. Pharm. Assoc., 34, p. 107 (Am. Jour. Pharm., 58, p. 483; West. Drugg., 8, p. 363; King's Am. Dispens., 18 ed., v. 2, p. 966; Pharm. Record, 37, p. 342)

Gives method for assaying Guarana and the fluidextract.

Editor

1888

## Elixir of Guarana

Yrbk. Br. Pharm. Conf., 25, p. 460.

Gives a formula and directions for making an Elixir of Guarana.

Kremel, A.

1888

## Guarana - Determination of Alkaloids

Pharm. Post., 21, p. 101 (Proc. Am. Pharm. Assoc., 36, p. 369; Yrbk. Br. Pharm. Conf., 25, p. 93; Ibid., 26, p. 107)

Gives a method for determining amount of alkaloids present in the drug.

Martin, J. A.

1888

## Guarana

Am. Jour. Pharm., 60, p. 244 (Pharm. Post, 21, p. 101)

Gives a method for assaying Guarana.

Rusby, H. H.

1888

## Guarana - Collection and Preparation

Proc. Am. Pharm. Assoc., 36, p. 368 (Am. Jour. Pharm., 60, p. 266; Pharm. Jour., 47, p. 1050; West. Drugg., 10, p. 198; Pharm. Era, 2, p. 256; Chem. & Drugg., 32, p. 789; King's Am. Dispens., 18 ed., v. 2, p. 965; Bull. Lloyd Libr., No. 18, p. 46)

Gives information about growing the plant, collecting the seed, and the preparation of the drug.

King, J. &amp; Lloyd, J. U.

1889

## Guarana

Am. Dispens., 15 ed., p. 101; Ibid., 16 ed., p. 101.

Describe the plant, gives the history connected with the drug, gives the constituents, and gives the medicinal properties and uses of the drug.

Boughton, J. F.

1890

## Guarana in Chronic Diarrhea

Am. Jour. Pharm., 62, p. 69 (Proc. Am. Pharm. Assoc., 38, p. 465; West. Drugg., 12, p. 88; Chem. & Drugg., 36, p. 572; Nat. Dispens., 5 ed., p. 800)

Reports the improvement of a patient in case of chronic diarrhea after taking guarana.

Schor, E.

1890

Über Glykosid - und alkaloidartige Reaktionen bei gewissen relativ indifferentes Drogen. (Herba Cardui benedicti und Posta Guarana)

Archiv der Pharmacie, 228, p. 274 (King's Am. Dispens., 18 ed., v. 2, p. 965)

Tells of experiments concerning color reaction of the constituents of Guarana and gives the results.

Boillon, M. H.

1891

## Poullinia

Dictionnaire De Botanique, v. 3, p. 519.

Gives a description of the plant and the seeds.

Lloyd, J. U.

1891

Examples Illustrating on Alkaloidal Standardizing Methods for Fluid Extracts.

Proc. Am. Pharm. Assoc., 34, p. 128 (Pharm. Record, 11, p. 250)

Gives a method of assaying fluid extract of Guarana for caffeine content.

Valentine, J. F.

1891

## Guarana

Pharm. Era, 5, p. 12 (Br. &amp; Col. Drugg., 19, p. 137)

Reports results of assaying Guarana for caffeine. The commercial products varied considerable.

1891

## (Poullinia)

Tran. Bot. Med. Phaner., 967, fig. 2738, 2739 (Boillon, H., Dictionnaire De Botanique, p. 519)

(Gives a description of the plant and the seeds.)

(Poullinia)

1891

## (Poullinia)

Hist. das pl., v. 5, pp. 361, 416 (Dictionnaire De Botanique, p. 519)

(Gives a description of the plant and the seeds.)

Thoms; H.

1892

## Semenses de Poullinia et pate de guarana

Pharm. Centralhl., 33, p. 453 (Jour. de pharm. et de chim., 137, 214; Proc. Am. Pharm. Assoc., 42, p. 934)

A comparison of Guarana seeds as compared to Guarana paste.

Comm.

1893

## Guarana

Swiss Pharmacopoeia, 3, ed., p. 142 (Chem. & Drugg., 44, p. 288)

Gives botanical source, description, synonyms, directions for the assay and dose of Guarana paste.

(Editor)

1894

## Composition of Guarana

West. Drugg., 16, p. 185.

In reply to a question asked as to composition of commercial Guarana, states that it varies a great deal.

Bocquillon, M. H. 1895

(Extract content of Some New Drugs)

L'Union Pharm., 36, p. (Montreal Pharm. Jour., 6, p.  
; Am. Drugg. & Ph. Record, 27, p. 68)

Gives data on the amount of extract in some new plants.  
Guarana is included among the alcoholic extracts.

Weston, E. 1896

Guarana

Am. Jour. Pharm., 68, p. 536.

Gives data concerning percentage of caffeine in the  
fluidextract of Guarana.

Lane, M. 1897

Botanical Notes

Chem. & Drugg., 51, p. 437.

Tells how Guarana is prepared and how it is used by the  
natives.

LaWall, C. H. 1897

Assay Process for Kola, Guarana and Coffee

Am. Jour. Pharm., 69, p. 350 (King's Am. Dispens., 18  
ed., v. 2, p. 965; U. S. Dispens., 19 ed., p. 605;  
Yrbk. Br. Pharm. Conf., 35, p. 165)

Gives a method for assay in the above drugs and some  
results obtained on the amount of caffeine.

Schaer, E.

1897

## (Guarana - Examination)

Proc. Soc. Germ. Nat. and Phys. , p. (Am. Drugg.,  
31, p. 246; Proc. Am. Pharm. Assoc., 46, p. 837)

(Reports on the adulterants, composition, and other  
points about Guarana)

Kunisse, E.

1898

Beitrage zur chemischen und pharmakognostischen  
Kenntnis der Pasta Guarana.

Archiv der Pharm., 236, p. 122 (Yrbk. Br. Pharm. Conf.,  
36, p. 153)

Gives results of the assay of samples of Guarana. States  
that tannin and caffeine are the chief constituents.

Felter, H. W &amp; Lloyd, J. U.

1900

## Guarana

King's Am. Dispens., 18 ed., v. 2, p. 965.

Gives botanical source, history, preparations, descrip-  
tion, chemical composition, action and uses of Guarana.

Rousseau-Saint-Philippe

1900

Du traitement de Pentew-colite depenteriforme des  
enfants por la poudre de guarana.

Bull. Med. Pocis., 14, p. 519 (Jour. de med. de  
Bordeaux 30, p. 433; Surgeon General's Library, S. 2,  
v. 6, p. 521)

The original was not available.

Dohme, A. R. L.

1901

## Drug Standards and How to Establish Them

Am. Drugg. &amp; Pharm. Rec., 38, p. 219 (Ibid., 38, p. 358)

In discussing standards for various drugs, states that Guarana should be standardized by its caffeine content, which averages 4%.

(Editor)

1901

## Guarana and Elaterium as Crude Drugs

Pharm. Era, 25, p. 206.

Describes crude Guarana as it is imported into this country.

Editor

1901

## Guarana Pasta

Pharm. Jour., 67, p. 220.

Gives a description of the seeds of Paulinia Cupana and tells how the paste is prepared from them.

Dohme, A. R. L.

1904

## Guarana

Apothecary, 17, p. 942 (Dig. Com. U. S. P. & N. F., 1905, p. 182)

Reports on alkaloidal content of Guarana.

Weiss, E.

1904

Vorgeschlagene Alkaloidbestimmungsmethoder für die neue  
Österreichische Pharmakopöe.

Pharm. Post, 37, p. 319.

Comments on the method of assaying coffee and other  
drugs, including Guarana, for caffeine content according  
to the new Austrian Pharmacopoeia.

(Editor)

1905

## Guarana

Chem. & Drugg., 67, p. 59.

Comments on the assay of Guarana as given in the U. S. P.  
VIII.

Lyons, A. B.

1905

## Report of Committee of U. S. P.

Proc. Am. Pharm. Assoc., 53, p. 261 (Dig. Com. U. S. P.  
& N. F., 1905, p. 182)

Points out that in the assay of Guarana provision is made  
for the extraction of other alkaloids. Caffeine is the  
only one known to be present.

(Vanderkleed, C. E.)

1905

## Report of Committee on Adulteration

Proc. Penna. Pharm. Assoc., 28, p. 56 (Dig. Com. U. S.  
P. & N. F., 1905, p. 182)

Reports assaying of 5 samples of guarana, which varied  
from 3.45 to 4.91 percent of caffeine.

Francis, J. M.

1906

## Guarana

Bull. Pharm., 20, p. 54 (Dig. Com. U. S. P. & N. F., 1906, p. 306)

Gives results of numerous assays of Guarana. Never found less than 4% of caffeine in lots representing thousands of pounds.

Lyons, A. B.

1906

## Report of U. S. P. Committee

Proc. Am. Pharm. Assoc., 54, p. 437 (Dig. Com. U. S. P. & N. F., 1906, p. 306)

States that the U. S. P. requirement of not less than three and one-half percent of alkaloids is satisfactory.

Patch, E. L.

1906

## Report of the Committee on Drug Adulterations

Proc. Am. Pharm. Assoc., 54, p. 337 (Dig. Com. U. S. P. & N. F., 1906, p. 306)

Reports results of assays of Guarana.

Puckner, W. A.

1906

A Review of the Literature on the Estimation of Alkaloids for the year 1905.

Pharm. Rev., Milwaukee, 24, p. 228 (Dig. Com. U. S. P. & N. F., 1906, p. 306)

Reviews the literature relating to the assay of caffeine-bearing drugs, including Guarana, and points out that the addition of ether to the residue remaining after evaporating the chloroform is unnecessary.

Vonderkleed, C. E.

1906

## Report of U. S. P. Committee

Proc. Am. Pharm. Assoc., 54, p. 439 (Dig. Com. U. S. P. & N. F., 1906, p. 306)

Claim that it is easy to obtain Guarana assaying above the U. S. P. standard, but the drug is difficult to exhaust.

1906

## (Simpus Guaranae)

Journ. de Pharmae. d'Anvers, 62, p. 537 (Pharm. Zentralhl., 48, p. 599; Yrbk. Br. Pharm. Conf., 45, p. 290)

(Gives a formula and directions for making Guarana Syrup for administering to children)

(Editor)

1907

## Formulas from the Addendum of the New Austrian

Pharmacopoeia - Pulvis Guaranae Composition (Am. Drugg. & Pl. Rev., 50, p. 137)

Gives the formula for compound guarana powder which consists of powdered guarana 5 gm., sodium salicylate 3 gm.; quinine sulphate 2 gm., to be put up in capsules each containing  $15\frac{1}{2}$  gr.

Gane, E. H.

1907

## Report of Committee on Drug Market

Proc. Am. Pharm. Assoc., 55, p. 326 (Dig. Com. U. S. P. & N. F., 1907, p. 262)

Gives result of the assay of Guarana.

Nelson, B. E.

1907

An Analytical Scheme for the Microscopical Examination of Drugs - Guarana.

Merck's Report, 16, p. 220 (Dig. Com. U. S. P. & N. F., 1907, p. 263)

Gives the botanical origin of Guarana and describes the appearance of the drug and its powder; also calls attention to the characteristic appearance of the drug under the microscope.

Patch, E. L.

1907

Report of Committee on Drug Market

Proc. Am. Pharm. Assoc., 55, p. 326 (Dig. Com. U. S. P. & N. F., 1907, p. 262)

Gives results of assays of Guarana.

Puckner, W. A.

1907

A Review of the Literature on the Estimation of Alkaloids for the year 1906.

Pharm. Rev., v. 25; p. 321 (Dib. Com. U. S. P. & N. F., 1907, p. 262)

Reviews literature of 1906, relating to the assay of Guarana.

(Vonderkleed, C. E.)

1907

Report of Committee on Adulterations

Proc. Penn. Pharm. Assoc., 30, p. 88 (Dib. Com. U. S. P. & N. F., 1907, p. 262)

Reports the examination of two samples of Guarana assaying 4.7 and 4.08 percent, respectively. Remarks that it is hard to exhaust.

Wood, G. B., Bache, F. 1907

Guarana

U. S. Dispen., 19 ed., p. 605; Ibid., 20 ed., p. 540.

Gives a description of the plant, preparations, properties, assay, and uses of Guarana.

Beringer, G. M. 1908

Fluidglycerates

Proc. M. J. Pharm. Assoc., 37, p. 56 (Proc. Am. Pharm. Assoc., 56, p. 994; Dig. Com. U. S. P. & N. F., 1908, p. 292)

Gives a formula for making a Fluidglycerate of Guarana. It contains 3.8 gm. of alkaloids in 100 c.c.

Evans Sons Leache & Webb. 1908

Guarana

Analytical Notes, 3, p. 18 (Dig. Com. U. S. P. & N. F., 1908, p. 292)

Reports on a sample of Guarana yielding 4.7% of caffeine.

Röder, P. 1908

(Guarana)

Röder's Jahresbericht, Wier, 1908, p. 84 (Dig. Com. U. S. P. & N. F., 1908, p. 292)

(Reports the results of assaying four samples of guarana.)

Ummy, J. C. & Bennett, C. T

1908

Standards for Alkaloidal Drugs and Their Fluid Extracts

Pharm. Jour., 81, p. 345 (Dig. Com. U. S. P. & N. F., 1908, p. 292)

States that the U. S. P. method for assaying Guarana is very good, and that the alkaloid is obtained in a high state of purity.

(Vanderkleed, C. E.)

1908

Report of Committee on Adulterations

Proc. Penn. Pharm. assoc., 31, p. 88 (Dig. Com. U. S. P. & N. F., 1908, p. 292)

Reports the assay of a sample of Guarana containing 3.66% caffeine.

Weigel, G.

1908

Die neue schwerzenseche Pharmakopoe, 4th Ed.

Pharm. Zontrahl., 49, p. 281.

States that powdered guarana can be identified by the separation of the characteristic caffeine when treated chemically.

Weigel, G.

1908

Neues vom Drogenmarkt

Pharm. Zentralhl., 49, p. 973.

States that guarana seeds are in demand to replace the paste because of the high cost of the paste. The seeds with the seed coat removed contained 5.3% caffeine.

Caesar &amp; Loretz

1909

## Guarana

Geschäfts - Bericht., 1909, p. 30 (Dig. Com. U. S. P. & N. F., 1909, p. 406)

Express the belief that because of the limited supply of the drug in Germany Guarana has been restricted in production.

Caldwell, P.

1909

## Some U. S. P. Criticisms

Bull. Pharm., 23, p. 115 (Dig. Com. U. S. P. & N. F., 1909, p. 406)

Asserts that fluid extract of guarana should be dropped from the U. S. P. because the alkaloid caffeine is used instead.

Dohme, A. R. L. &amp; Engelhardt, H.

1909

## The Assay Methods of the U. S. P.

Proc. Am. Pharm. Assoc., 57, p. 382 (Dig. Com. U. S. P. & N. F., 1909, p. 406)

Comments on the appearance of caffeine resulting from the assay of Guarana.

Fussell, M. H.

1909

## (Guarana)

Trans. Am. Med. Assoc., Sec. Pharm. & Therap., 1909, p. 254 (Dig. Com. U. S. P. & N. F., 1909, p. 406)

"Asserts that guarana is much less efficacious than the alkaloid caffeine, therefore it should be dropped from the U. S. P."

(Lyons, A. B.)

1909

## Report of Committee on U. S. P.

Proc. Am. Pharm. Assoc., 57, p. 806 (Dig. Com. U. S. P. & N. F., 1909, p. 406)

Discusses the official assay of guarana.

(Vanderkleed, C. C.)

1909

## Report of Committee on Adulterations

Proc. Penn. Pharm. Assoc., 32, p. 129 (Dig. Com. U. S. P. & N. F., 1909, p. 406)

Reports on the assay of 5 different samples of Guarana which were all above the U. S. P. standard.

Clark, A. H.

1910

## The Alkaloidal Assay Methods of the U. S. P.

Bull. Am. Pharm. Assoc., 5, p. 124 (Dig. Com. U. S. P. & N. F., 1910, p. 491)

Reports that all samples of guarana examined were above 4% in alkaloidal principles.

Dohme, A. R. L. &amp; Engelhardt, H.

1910

## The New Hungarian Pharmacopoeia

Proc. Am. Pharm. Assoc., 58, p. 1184 (Dig. Com. U. S. P. & N. F., 1910, p. 481)

Reviews the assay process for guarana of the above publication.

Evans Sons Lescher &amp; Webb.

1910

## Guarana

Analytical Notes, 5, p. 35 (Dig. Com. U. S. P. & N. F., 1910, p. 481)

Reports that one sample of guarana tested contained 4.3% of caffeine. Recent research work proves that the seeds of some species of *Poullinia* yield an alkaloid which is not identical with either caffeine or theekomine.

Fluteaux, G. &amp; Gloris, A.

1910

Etat actuel de nos connaissances sur les plantes unferment de la cafeine.

Bull. des Sci. Pharmocologiques, 17, p. 599 (Yrbk. Br. Pharm. Conf., 48, p. 171; Compt. rend. Conge. Internat. Pharm. 1910, Brussels, 1911, p. 151; Dig. Com. U. S. P. & N. F., 1910, p. 481)

Describes the extraction of Guarana, and states that the caffeine is called guaranatin-caffeine.

(Gane, E. H.)

1910

## Report of the Committee on Drug Market

Proc. Am. Pharm. Assoc., 58, p. 743 (Dig. Com. U. S. P. & N. F., 1910, p. 481)

Reports the assay of 4 lots of guarana ranging from 3.7 to 4.5% of caffeine.

Lyons, A. B.

1910

## Progress in Standardization of Pharmacopoeial Drugs

Am. Drugg., 56, p. 102 (Dig. Com. U. S. P. & N. F., 1910, p. 481)

Reports a comparison of the requirements of several pharmacopoeias and their methods of assay of guarana.

Marsden, P. H.

1910

## Guarana

Ann. Trop. Med. & Parasit., 4, p. 105 (Pharm. Jour., 85, p. 577; Dig. Com. U. S. P. & N. F., 1910, p. 481; Chem. & Drugg., 77, p. 87)

Gives derivation of the work guarana, history, preparation, description, constituents, and uses of the drug Guarana.

Schneider, A.

1910

The Microscopical Examination of Drugs, Foods, and Textile Fabrics.

Merck's Report, 19, p. 191 (Dig. Com. U. S. P. & N. F., 1910, p. 481)

States that guarana consists of masses of pasty starch, some sclerenchyma cells, but no wood fiber.

Scoville, W. P.

1910

Some Comments on the Alkaloidal Assay Methods of the U. S. P.

Proc. Am. Pharm. Assoc., 58, p. 822 (Dig. Com. U. S. P. & N. F., 1910, p. 481)

Thinks the U. S. P. assay for guarana is quite satisfactory. Says that it can also be used for Kola and its preparations.

(Editor)

1911

## Therapeutics

Jour. Am. Med. Assoc., 56, p. 1331 (Dig. Com. U. S. P. & N. F., 1911, p. 379)

Tells of the different uses made of guarana and states that a guarana habit can be formed.

Glücksmann, C.

1911

## (Guarana)

Pharm. Prox., 10, p. 456 (Dig. Com. U. S. P. & N. F., 1911, p. 379)

(Discusses the determination of the tannin content of guarana by means of formaldehyde.)

Lloyd, J. U. &amp; Lloyd, C. G.

1911

## Guarana

Bull. Lloyd Libr., 18, p. 46 (Dig. Com. U. S. P. & N. F., 1911, p. 379)

States that guarana was introduced into France in 1817 and gives a short general history of the drug.

Noyes, C. R.

1911

A Fixed Rather than a Minimum Standard for Alkaloidal Drugs.

Proc. Minn. Pharm. Assoc., 27, p. 77 (Dig. Com. U. S. P. & N. F., 1911, p. 379)

Points out that the U. S. P. requires Guarana to contain 3.5% and the Fluidextract of Guarana 3.5% of alkaloidal principle.

Rosenthaler, L.

1911

## Guarana

Ber. der deutsch. Pharm. Gesell., 21, p. 532 (Dig. Com. U. S. P. & N. F., 1911, p. 379)

Describes and illustrates the nature of the material obtained from guarana by pyroanalysis.

Duncan, W.

1912

## Notes and Queries

Chem. &amp; Drugg., 30, p. 517

Gives an example of a prescription in which Guarana is present.

Scoville, W. L.

1912

## On Drug Standards

Jour. Am. Pharm. Assoc., 1, p. 1341 (Dig. Com. U. S. P. & N. F., 1912, p. 300)

Gives results of assays of Guarana.

Stockman, R.

1912

## Stimulant Narcotics

Pharm. Jour., 89, p. 685 (Dig. Com. U. S. P. & N. F., 1912, p. 300)

A description with illustrations of some interesting molded forms of guarana from South America.

<sup>a</sup>  
(Vonderkleed, C. F.)

1912

## Report of Committee on Adulterations

Proc. Pennp Pharm. Assoc., 35, p. 180 (Dig. Com. U. S. P. & N. F., 1912, p. 300)

Gives results of assays of Guarana.

Caesar &amp; Loutz

1913

## Guarana

Jahres - Bericht, 1913, p. 58 (Dig. Com. U. S. P. & N. F., 1913, p. 302)

Guarana because of its scarcity is being held at exceptionally high prices.

Committee

1913

## Report of Committee on Drug Market

Jour. Am. Pharm. Assoc., 2, p. 680.

Gives results of assays of Guarana.

Clyde

Englehardt, H.

1913

## Purity of Chemicals and Drugs

Jour. Am. Pharm. Assoc., 2, p. 165 (Dig. Com. U. S. P. & N. F., 1913, p. 304)

Gives results of assays of Guarana.

French, H. B.

1913

## The Drug Market

Jour. Am. Pharm. Assoc., 2, p. 860.

Gives current prices of Guarana.

Kebler, L. F. 1913

Report of Committee on Drug Market

Jour. Am. Pharm. Assoc., 2, p. 1095 (Dig. Com. U. S. P. & N. F., 1913, p. 304)

Reports results of assays of Guarana.

Patch, E. L. 1913

Guarana

Jour. Am. Pharm. Assoc., 2, p. 680 (Dig. Com. U. S. P. & N. F., 1913, p. 304)

Reports on assays of Guarana.

(Vonderkleed, C. E.) 1913

Report of Committee on Adulterations

Proc. Penn. Pharm. Assoc., 36, p. 96 (Dig. Com. U. S. P. & N. F., 1913, p. 304)

Reports on assays of guarana.

Committee 1914

U. S. P. 9th Revision - Abstract of Proposed Changes with new Standards and Descriptions.

Jour. Am. Pharm. Assoc., 3, p. 359.

Gives description of the powdered drug and tests for identity.

(Committee)

1914

## United States Pharmacopoeia, Ninth Revision

Jour. Am. Pharm. Assoc., 3, p. 384 (Dig. Com. U. S. P. & N. F., 1914, p. 298)

Gives a description of powdered Guarana and describes the crystals of caffeine that can be seen upon examination with a microscope.

Committee

1914

## Proposed changes in the U. S. P.

Jour. Am. Pharm. Assoc., 3, p. 542.

Reports the proposed change of menstruum for Fluidextract of Guarana.

Committee of U. S. P.

1914

## Proposed Changes in the U. S. P.

Jour. Am. Pharm. Assoc., 3, p. 991.

Reports the proposed method of assay of Guarana.

Moines, E. L.

1914

## Ash Content of Crude Drugs

Jour. Am. Pharm. Assoc., 3, p. 425 (Dig. Com. U. S. P. & N. F., 1914, p. 298)

Guarana was found to contain from .89 to 1.18 percent of ash.

Wilbert, M. I. 1914

Variation in Strength of Medicinal Substances.

Jour. Am. Pharm. Assoc., 3, p. 1286 (Yrbk. Am. Pharm. Assoc., 3, p. 182)

Reports results of variations in caffeine content of Guarana.

(Remington, J. P.) 1915

U. S. P. Revision Notes - Guarana

Jour. Am. Pharm. Assoc., 3, p. 984 (Yrbk. Br. Pharm. Conf., 52, p. 312)

Gives the proposed U. S. P. IX assay process of Guarana, with caffeine content at not less than 4%.

Vonderkleed, C. E. 1916

Report of Committee on Drug Markets

Proc. Penn. Pharm. Assoc., 59, p. 119 (Dig. Com. U. S. P. & N. F., 1916, p. 197)

Gives result of assay of Guarana.

Scoville, W. L. 1917

Report of Committee on Quality of Medicinal Products

Jour. Am. Pharm. Assoc., 6, p. 410 (Dig. Com. U. S. P. & N. F., 1917, p. 217)

A sample of guarana assayed 4.32% of caffeine.

O'Connor, D. C.

1918

## Guarana - Dried Paste

Nat. Drugg., 48, p. 402.

Gives description of Guarana Paste, its uses and official preparation made from Guarana.

Tschirch, A.

1918

Über den Bau der Samenschale von Poulliana Cupana Kunth.

Schweiz. Apoth. Ztg., 37, p. 445 (Dig. Com. U. S. P. & N. F., 1918, p. 230)

An illustrated description of the structure of the husks of the seeds of Poullinia Cupana with a description of the drug.

(Ewe, G. E.)

1920

## Report of Committee on Drug Market.

Proc. Penn. Pharm. Assoc., 43, p. 121 (Dig. Com. U. S. P. & N. F., 1920, p. 771)

Two samples of guarana examined were above the U. S. P. standard of 4% of caffeine.

Gane, E. H.

1920

## Revision of the U. S. P.

Am. Drugg., 8, p. 25 (Jour. Am. Pharm. Assoc., 9, p. 366; Dig. Com. U. S. P. & N. F., 1920, p. 271)

Suggests that guarana be deleted from the U.S.P.

Mittelbach, W.

1920

## Report on U. S. P. IX

Proc. Missouri Pharm. Assoc. 42, p. 55 (Dig. Com. U. S. P. & N. F., 1920, p. 271)

States that Guarana could be deleted from the U. S. P. because it is seldom used.

Rusby, H. H.

1920

## Suggestions for the Revision of the U. S. P.

Am. Drugg., 68, p. 26 (Jour. Am. Pharm. Assoc., 9, p. 243; Dig. Com. U. S. P. & N. F., 1920, p. 271)

Discusses the wording of the U. S. P. definition of Guarana. Says it is the kernels and not the seeds.

Ugorte, T.

1920

## (Guarana)

Anal. soc. quim. Argentina, 1920, 8, p. 413 (Dig. Com. U. S. P. & N. F., 1920, p. 271)

("Gives a description of the method used for determining caffeine in Guarana.")

(Ewe, G. E.)

1921

## Report of Committee on Drug Market

Proc. Penn. Pharm. Assoc., 44, p. 80 (Jour. Am. Pharm. Assoc., 10, p. 642; Dig. Com. U. S. P. & N. F., 1921, p. 194)

Gives results of assays of Guarana.

Ugorte, T.

1921

Nouvelle methode de dosage de la cafeine dans le mate, le cafe, le the, la noix le kola et le guarana.

Jour. de pharm. et de chim., 193, p. 387 (Dig. Com. U. S. P. & N. F., 1921, p. 194)

Gives a description of grovimetari method for determining caffeine in the above named drugs.

(Editor)

1926

## Guarana

Chem. & Drugg., 105, p. 557.

Gives a description of the drug, tells how the natives use it and gives the medicinal uses of the drug.

Miko, J. V. &amp; Miko, S. V.

1926

## Gehaltsbestimmung der Guarana

Pharm. Zentralhl., 67, p. 193 (Yrbk. Br. Pharm. Conf., 63, p. 303; Nat. Drugg., 57, p. 410; Chem. & Drugg., 104, p. 856)

Describes a method to assay Guarana quantitatively by the change in color. This method proves there is 4% caffeine.

List of Journals Consulted

- Am(eric)an) Drugg(ist) vol. 13-20; 1884-1891; vol. 73-80;  
1925-1929.
- Am(eric)an) Drugg(ist) & Pharm(aceutical) Rec(ord), vol.  
22-72; 1892-1924.
- Am(eric)an) Jour(nal) Pharm(acy) vol. 1-100; 1829-1928.
- Br(itish) & Col(onial) Drugg(ist) vol. 1-110; 1859-1929.
- Bull(etin) Pharm(acy) vol. 5-42; 1891-1928 (Excepting vols.  
27, 28, 33, & 34.)
- Chem(ist) & Drugg(ist) vol. 1-110; 1859-1929.
- Dig(est) Com(ments) U. S. P. & N. F., 1905-1922.
- Drugg(ists) Cir(cular) vol. 1-72; 1857-1928.
- Eclec(tic) Med(ical) Jour(nal) vol. 12-85, 1853-1925.
- Jour(nal) Amer(ican) Pharm(aceutical) Assoc(iation) vol.  
1-17, 1912-1928.
- Jour(nal) Mat(eria) Med(ica) vol. 1-19, 1859-1879.
- Nat(ional) Drugg(ist) vol. 12-58, 1888-1928.
- New Rem(edies) vol. 5-12, 1876-1883.
- Pharm(aceutical) Era, vol. 1-65, 1887-1928.
- Pharm(aceutical) Jour(nal) vol. 1-122, 1841-1929.
- Pharm(aceutical) Rec(ord) vol. 4-12, 1876-1883.
- Proc(eedings) Am(eric)an) Pharm(aceutical) Assoc(iation)  
vol. 1-59, 1855-1911.
- West(ern) Drugg(ist) vol. 4-50, 1882-1928.
- Yearbook Am(eric)an) Pharm(aceutical) Assoc(iation) vol.  
1-12, 1912-1923.
- Yearbook Br(itish) Pharm(aceutical) Conf(erence) vol.  
4-65, 1867-1928.

### Books Consulted

- Austrian Pharmacopoeia ed., 1907.
- Barillon, H. Dictionnaire De Botanique, v. 3, 1891.
- Bentley, R. & Tumen, H. Medicinal Plants, 1880.
- Coxe, J. R. Am(ericana) Dispens(atory) 1 ed., 1806; 4 ed., 1818; 5 ed., 1825; 7 ed., 1827; 9 ed., 1831.
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United States Pharmacopoeia (O-X) (1820-1920)

and

National Formulary (I-V) (1888-1926)

History

of

Guarana

U.S.P. 1880

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## Guarana

## Guarana

A dried paste prepared from the crushed or ground seeds of *Paullinia sorbilis* Martins (Nat. ord., Sapendaceae).

Sub-globular, or elliptic, or cylindrical sticks, hard, dark reddish-brown; fracture uneven, somewhat glossy, showing fragments of seeds invested with a black testa; odor slight, peculiar, resembling chocolate; taste astringent, bitter; it is partly soluble in water, and in alcohol.

Preparation: *Extractum Guaranae Fluidum*.

U.S.P. 1890

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## Guarana

## Guarana

A dried paste chiefly consisting of the crushed or pounded seeds of *Paullinia Cupana* Kunth (*Paullinia sorbilis* Mortius; nat. ord. Sapendaceae).

Subglobular or elliptic cakes or cylindrical sticks, hard, dark reddish brown; fracture uneven, somewhat glossy, pale reddish-brown, showing fragments of seeds invested with blackish-brown integuments; odor slight, peculiar, resembling that of chocolate; taste astringent and bitter.

It is partly soluble in water, and in alcohol.

Preparation: *Extractum Guaranae Fluidum*.

U.S.P. 1900

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## Guarana

## Guarana

A dried paste consisting chiefly of the crushed seeds of *Paullinia Cupana* Kunth (Fam. Sapendaceae), yielding, when assayed by the process given below, not less than 3.5 percent of its alkaloidal principles.

Usually in cylindrical sticks, about 3 to 5 cm. in diameter, hard and heavy, dark reddish-brown; fracture uneven, often fissured in the centre, pale reddish-brown, showing numerous coarse fragments of seeds and their blackish-brown integuments, odor slight; taste astringent, somewhat smoky and pleasantly bitter, then sweetish.

## Assay of Guarana

Guarana, in No. 60 powder, six grammes . . . . . 6 gm.  
 Chloroform,  
 Ether,  
 Ammonia Water,  
 Normal Sulfuric Acid V. S.  
 Distilled Water, each, a sufficient quantity.

Introduce the Guarana into an Erlenmeyer flask, and pour upon it 120 c.c. of chloroform and 6 c.c. of ammonia water, and insert the stopper securely. Shake the flask at intervals for half an hour, and allow it to stand for four hours. Filter a sufficient quantity of the liquid into a measuring cylinder until 100 c.c. (representing 5 gm. of Guarana) have been obtained, then transfer the filtrate to a flask, and distil off all of the chloroform by means of a water-bath. Dissolve the alkaloidal residue in a mixture of 2 c.c. of normal sulfuric acid V. S. and 20 c.c. of warm distilled water. Allow the liquid to cool, and filter it into a separator, rinse the flask and filter with several small portions of distilled water, add 20 c.c. of chloroform and 2 c.c. of ammonia water to the separator, and shake it for one minute. Draw off the chloroform into a tared flask and repeat the extraction with two portions of 10 c.c. each of chloroform. Distil off the chloroform from the com-

bined liquids, and when the residue is dry, add 2 c.c. of ether and evaporate on a water bath very carefully to avoid decrepitation; continue the heating until the weight of the residue after cooling remains constant. This weight multiplied by 20 will give the percentage of the alkaloidal principles contained in the Guarana.

Average dose - 2 gm. (30 grains)

U.S.P. 1910

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Guarana

Guarana

A dried paste consisting chiefly of the crushed seeds of Poullinia Cupana Kunth (Fam. Sapindaceae) yielding not less than 4% of caffeine.

Usually in cylindrical sticks, about 3 to 5 cm. in diameter, externally dark, reddish-brown, hard and heavy; fracture uneven, often fissured in the center; internally pale reddish-brown, showing more or less coarse fragments of seeds and occasionally their blackish-brown integuments; odor slight; taste slightly astringent and bitter.

The powder is light pinkish-brown; consisting mostly of irregular masses of parenchyma containing more or less altered starch grains; unaltered starch grains occasional, varying from spherical and polygonal to ellipsoidal and broadly ovoid, 0.01 to 0.025 mm. in diameter; occasional fragments with narrow, elongated sclerenchymatous cells; the walls being thick, yellowish and non liquified.

Place on a slide a drop of Hydrochloric acid, add about 0.001 gm. of powdered Guarana, then add a drop of gold chloride T. S. and allow the mixture to stand for a few minutes; beginning at the edge of the mount, crystals of caffeine and gold chloride separate in the form of orthorhombic plates and needles, the latter usually occurring in spheroidal aggregates and finally forming branching groups.

Assay - Introduce 6 gm. of Guarana, in No. 60 powder, into a flask and add 120 mils of chloroform and 6 mils of ammonia water. Stopper the flask, shake it frequently

for half an hour, then let it stand four hours. Again shake the flask vigorously and when the drug has settled, filter the liquid rapidly through a pledget of purified cotton and collect 100 mls of the filtrate, representing 5 gm. of Guarana. Evaporate the clear filtrate to dryness and dissolve the residue in weak sulphuric acid with the aid of a gentle heat. When the liquid has cooled, filter it into a separator and wash the container and filter with several small portions of distilled water. Now add ammonia water until the liquid is distinctly alkaline to litmus and shake out the caffeine with chloroform until completely extracted, as shown by testing with iodine T. S. in place of the usual mercuric potassium iodide T. S. Evaporate the united chloroform solutions and dry the residue to constant weight at 80° C. The weight is the amount of caffeine from 5 gm. of Guarana (see Porximate Assays, Part II)

Preparation - Fluidextractum Guaranae.

Average Dose - Metric, 2 Gm. - Apothecaries, 30 grains,

N. F. V. 1926

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Guarana

Guarana

(U. S. P. IX)

Guarana is a dried paste consisting chiefly of the crushed seed of *Poullinia Cupana* Kunth (Fam. Sapendaceae)

Guarana yields not less than 4% of Caffeine.

Description and physical properties:

Unground Guarana: Usually in cylindrical sticks, about 3 to 5 cm. in diameter; externally dark reddish brown; hard and heavy; fracture uneven, often fissured in the center; internally pale reddish, showing more or less coarse fragments of seed and occasionally their blackish brown seed-coats. Odor slight; taste slightly astringent and bitter.

**Powdered Guarana:** Light pinkish brown; consisting mostly of irregular masses of parenchyma containing more or less altered starch grains; unaltered starch grains occasional, varying from spherical and polygonal to ellipoidal and broadly ovoid, 0.01 to 0.025 mm. in diameter; occasional fragments with narrow, elongated sclerenchymatous cells; the walls being thick, yellowish and non-liquified.

**Test for identity:** Place on a slide a drop of hydrochloric acid, add about 0.001 gm. of powdered Guarana, then add a drop of gold chloride T. S. and allow the mixture to stand for a few minutes; beginning at the edge of the mount, crystals of caffeine and gold chloride separate in the form of orthorhombic plates and needles, the latter usually occurring in spheroidal aggregates and finally forming branching groups.

**Assay:** Place 5 gm. of Guarana, in fine powder, in a suitable flask or bottle, add 120 c.c. of chloroform and shake. Allow to stand five minutes, then add 6 c.c. of ammonia water and shake the mixture continuously during one hour, or intermittently (see Proximate Assays, Type Process A, page 423) during two hours. Allow the mixture to stand over night, again shake intermittently during one-half hour, then allow the drug to settle, or filter off through a pledget of purified cotton, 100 c.c. of the chloroformic liquid, representing 5 gm. of Guarana, and evaporate it to dryness. Treat the residue with 10 c.c. of weak (about 1%) sulfuric acid with the aid of a gentle heat, allow to cool, filter through a small filter into a separator, and wash the dish and filter with successive small portions of distilled water until no test for alkaloid is obtained by acidulating a few drops of the filtrate strongly with sulfuric acid and adding iodine T. S. Now add ammonia water until the liquid is distinctly alkaline to litmus, and completely extract the caffeine with successive portions of chloroform, as shown by testing with iodine T. S. Evaporate the combined chloroform solutions, and dry the residue at 80° C. to constant weight. The weight is the amount of caffeine from 5 gm. of Guarana.

**Preparations:** Elixir Guaranae, Elixir Guaranae et Apii, Fluidextractum Guaranae.

**Average Dose:** Metric, 2 gm. Apothecaries, 30 grains.

Summary of U. S. P. & N. F. data on Guarana

Official in

U. S. P. 1880; 1890; 1900; 1910; N. F. V; 1926.

O. L. T.

Guarana, U. S. P., 1880; 1890; 1900; 1910; NF V;  
1926.

O. E. T.

Guarana, U.S.P., 1880; 1890; 1900; 1910; N.F. V; 1926.

O. Abb.

O. Syn.

Nat. Order or Family:

Sapindaceae U. S. P., 1880; 1890; 1900; 1910; N. F.  
V; 1926.

Sci. Name.

*Poullinia Sorbilis* Mortius, U.S.P., 1880; synonym,  
1890. *Poullinia Cupana* Kunth, U. S. P. 1890; 1900; 1910;  
N. F. V; 1926.

Part or Product used.

A dried paste prepared from the crushed or ground  
seeds, U. S. P. 1880.

A dried paste chiefly consisting of the crushed or  
pounded seeds, U. S. P. , 1890.

A dried paste chiefly consisting of the crushed  
seeds, U. S. P., 1900, 1910.

Guarana is a dried paste consisting chiefly of the  
crushed seeds, N. F. V; 1926.

Approved by W. R. Richtmann

Assoc. Prof. of Pharmacognosy

Date \_\_\_\_\_