

The other alternative is to extract the drug first with ethyl acetate or chloroform, preferably in a continuous extraction apparatus, and with sufficient acetic acid to free all combined cantharidin, and then mix this extract with sufficient alcohol to produce the tincture.

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## BOTANICAL NOMENCLATURE OF THE N. F. IV.\*

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A careful examination of the botanical nomenclature adopted in the National Formulary IV shows that it follows in part the Vienna Code and in part the American Code, with a strong leaning toward the latter as the predominant feature. The adoption of the trinomial system is to be deprecated, as it makes the authors express an opinion which they had never for a instant entertained. The trinomial system under the American Code is the method of expressing a subspecies, the "Code" not recognizing the rank of variety. Yet in every instance where the trinomial is used the author quoted did not publish a subspecies; he published a variety. Geographical names are decapitalized; as they are proper names they should be capitalized the same as is done with other proper names. The following notes and comments may be of service in the next revision:

*Agaricus*.—Derived from *Polyporus officinalis* Fries. This is not the valid name for the fungus producing the white agaric used in medicine. Winter, in the second edition of Rabenhorst's Kryptogamen Flora, uses the above name; Murrill, in North American Flora, uses the combination *Fomes Laricis* (Jacq.) Murrill; Hennings, in Engler u. Prantl's Pflanzenfamilien, adopts both *Fomes* and *Polyporus* as distinct genera, but unlike Murrill refers the white agaric to *Polyporus* as *P. officinalis*. The species of *Fomes* are, perhaps, by most authors regarded as species of *Polyporus*, but whether *Fomes* or *Polyporus*, the oldest and valid specific name is *Laricis*. The proper name under *Polyporus* is *P. Laricis*. The proper name under *Polyporus* is *P. Laricis* (Jacq.) Scopoli.

*Asarum*.—Hyphenated words are rapidly going out of favor, the word being written as either one word or two distinct words; "snakeroot" is the most generally accepted way of writing the word, not "snake-root."

*Cactus Grandiflorus*.—The botanical origin is given as *Cactus grandiflorus* Linné, with the synonym *Cereus grandiflorus* Miller. These names certainly appertain to the drug known commercially as "cactus grandiflorus," but they are only synonyms and should not be used, especially the Linnæan name, for the plant producing the drug has not been classed in the genus *Cactus* by any botanist for nearly a century and a half. The proper name for this drug is *Selenicereus grandiflorus* (Lin.) Britton and Rose. In the third line of the description on page 275 the words "each about 2 mm." would be more accurate if changed to read "5 mm. or less," and the word "spines" after "flexuous" should be changed to "bristles." It may not be out of place to note here that a related Mexican species, the *Selenicereus pteranthus* (Link and Otto) Britton and Rose, has been used as a substi-

\* Reprinted from *The Druggists' Circular*, May 1917.

tute. This drug is distinguished from the true by the absence of the long bristles from the tufts of spines.

*Centaurium*.—The drug is indicated as being derived from the *Erythræa Centaurium* (Linné) Persoon. The oldest generic name is *Centaurium* Hill. There is an older *Centauria* Linné, but as the ending is different and it belongs to a very different family of plants, no confusion can arise from accepting Hill's generic name for these plants, as has been done in our local manuals. The proper botanical designation is *Centaurium Centaurium* (Linné) W. F. Wight.

*Chirata*.—In the U. S. P. 7th Revision the botanical source of this drug was given as *Swertia Chirata* Hamilton. It was changed in the 8th Revision on my advice, to *Swertia Chirayita* (Roxb.) Hamilton, which was retained, also on my advice, in the present 4th edition of the National Formulary. But this combination has never been properly published, and Hamilton did not use this form of spelling. The specific name has been spelled in various ways by various authors, as will be seen from the synonymy given below. The proper designation is as follows:

*Swertia Chirayita* (Roxb.) Farwell (Nov. Comb.).

*Gentiana Chirayita* Roxb. in Flem. in As. Res. XI p. 167 (1810) and in Flem. Cat. Ind. Medic. Pl. 21 (1810.)

*Gentiana Chirata* Wall Pl. As. Rar. III, 33, t. 252 (1832).

*Gentiana Chirayta* Roxb. Fl. Ind. II 71, 1832.

*Gentiana Cherayta* R. Fleming in C. B. Clarke Ed. Roxb. Fl. Ind. 264, 1874.

*Swertia Chirayita* (Roxb.) Karsten Deut. Fl., 1025, 1880-1883.

*Cornus*.—Those species of *Cornus* in which the inflorescences are surrounded by a corolla-like involucre are better considered as constituting a distinct genus. The proper name for the plant under this view is *Cynoxylon floridum* (Linné), Raf.

*Corydalis*.—The proper spelling of the generic name is *Bikukulla*.

*Cypripedium*.—The drug is indicated as being obtained from three species, *Cypripedium hirsutum* Miller, *C. pubescens* Willd., and *C. parviflorum* Salisb.

*Cypripedium hirsutum*.—This name of late years has had a varied career. It was first published by Philip Miller in 1768. Henrietta G. Fox used it in 1895 for the large yellow-flowered ladies slipper and it was later transferred to the large and showy, white-flowered *Cypripedium Reginæ* Walter, which name should supersede *C. hirsutum* Miller in the Formulary. Miller described his *C. hirsutum* as a plant one and a half feet in height, with oblong-oval, deeply veined leaves and reddish brown flower, flowering in May. In so far as my acquaintance with *Cypripedium* goes, Miller's description can apply to only one—the *C. acaule* Ait. This plant may be found in dry, sandy woods, in rocky woods, in rich, moist woods, and in peat bogs; it ranges in height from 3 or 4 inches to 22 inches, well above the limit assigned by Miller. It is certain that Miller would never have called the yellow flowers of *C. pubescens* or the characteristically white flowers of *C. Reginæ* "reddish brown," which color just suits that of the flowers of *C. acaule*. The time of flowering of the latter also agrees with the time given by Miller, while the flowering time of the former is in July, long after *C. acaule* has ceased to bloom. The proper name for the moccasin flower is:

*Fissipes hirsuta* (Miller) Farwell (Nov. Comb.).

*Cypripedium hirsutum* Miller Gard. Dict. Ed. 8, No. 3, 1768.

*Cypripedium acaule* Ait. Hort. Kew III, 303, 1789. The rhizomes and roots of this species could be used as well as those of the others allowed; they probably form part of the commercial drug.

*Cypripedium pubescens* and *C. parviflorum*: The oldest name for the large, yellow-flowered ladies slipper is *Cypripedium bulbosum* Miller, l. c. No. 2. Linnæus had another and older species of the same name, but as that belongs to a very different genus Miller's name is the valid one, and the small, yellow-flowered ladies slipper is *Cypripedium bulbosum* Miller var. *parviflorum* (Salisb.) Farwell.

*Drosera*.—There is some confusion existing regarding the nomenclature to be adopted for some of the species of *Drosera*. If *Drosera Anglica* Huds. were adopted instead of *Drosera intermedia* Hayne, the other names remaining as given, the result would be more in accordance with the rules of priority.

*Euonymus*.—The proper spelling for this generic name is *Evonymus*.

*Euphorbia Pilulifera*.—The proper name for the plant from which this drug is produced is *Euphorbia hirta* Linné; or if considered as a genus distinct from true *Euphorbia*, *Chamæsyce hirta* (Linné) Millspaugh.

*Gossypii Cortex*.—In *Gossypium Barbadense* Linné, the specific name, a geographical one, is capitalized, as it should be; but this is an oversight of the proof-reader, as the intention was to decapitalize all such names. They should be re-capitalized.

*Kava*.—This drug is said to be derived from *Piper Methysticum* Forster. The name is not tenable for this plant because of an earlier and valid *Piper Methysticum* Linné *filius*; also the authority cited should have been Forster *filius*. The proper names and synonymy for the two species are as given below. Both are known as "ava," and as there is a very noticeable difference in the physical appearance of the roots of different lots of drug, it is possible that both species enter into the make-up of the commercial drug.

*Piper Methysticum*, Linné *filius*, Suppl. 91, 1781; and Lam. Ill. I. p. 81 (1791).

*Piper latifolium* Linné *filius* Suppl. 468, 1781, and Forster *filius* Prod. 5, 1786.

*Macropiper latifolium* Miq. Syst. Pip. 218, 1843-4.

The species of the National Formulary is:

*Piper esculentum* (Raf.) Farwell (Nov. Comb.).

*Piper Methysticum* Forster *filius* Pl. Escul. 76, 1786, and Prod. 5, 1786 non Linné *filius* 1781.

*Methysticum esculentum* Raf. Sylva Tellur, 85, 1838.

*Macropiper latifolium* Miq. in Linnæa XX (1847) 130.

*Methysticum Methysticum* (Forster) Lyons. Plant Names 301, 1907.

It is to be noted that C. De Candolle in the Prodrômus vol. 16, part 1, page 354 (1869), and Hooker and Jackson in the Index Kewensis vol. 2, p. 142 (1895) quote *Macropiper Methysticum* Hook. and Arn. Bot. Beech. Voy. p. 96, as a synonym of this species. These citations are erroneous as Hook. and Arn. used the combination *Piper Methysticum*. There is a considerable difference of opinion among botanists as to the generic status of these plants, some retaining them in the genus *Piper* and others in *Macropiper*, the oldest name for which is *Methysticum* Raf.

*Sylva Tellur*, 85, 1838. Under this genus the first species above with synonymy as there given would be:

*Methysticum Methysticum* (Linné *filius*) Farwell (Nov. Comb.) and the other *Methysticum esculentum*, Raf.

*Krameria*.—*Krameria Ixina* Linné should be *Krameria Ixine* Linné. "Ixine" is an old generic name, and was used as a specific name by Linnæus in 1758. In the *Species Plantarum*, 1762, it appeared as "exina," perhaps a typographical error. "Exina" has been in general use, but the older spelling should be restored.

*Kola*.—Said to be derived from several species of *Cola* Schott and Endlicher. *Cola* is not tenable for this genus, there being several older names, the oldest being *Bichea* Stokes. The most important species yielding kola is:

*Bichea acuminata* (Beauv.) Farwell (Nov. Comb.).

*Sterculia acuminata* Beauv. Fl. d'Ow. 1 t. 24, 1804.

*Bichea solitaria* Stokes Bot. Mat. Med. II 565, 1812.

*Cola acuminata* Schott and Endl. Meletem. 33, 1832.

*Leptandra*.—*Leptandra* is said to be derived from "*Veronica Virginica* Linné." This plant is often considered to be generically distinct from true *Veronica* under the name of *Leptandra* Nuttall; the oldest generic name, however, is *Veronicastrum* Heister in Fabricius, 1759. The proper nomenclature, according to rules of priority, for the plants producing this drug is:

*Veronicastrum Virginicum* (Linné) Farwell (Nov. Comb.).

*Veronica Virginica* Linné Sp. Pl. 9, 1753, and *Veronicastrum Virginicum* (Lin. Farwell var. *Lanceolatum* Farwell (Nov. Comb.)).

*Callistachya Virginica* (Lin.) Raf. var. *lanceolata* Farwell Ann. Rpt. Mich. Acad. Sci. XVII, 176 (Reprint 1916).

*Matico*.—The drug is said to be obtained from the *Piper angustifolium* Ruiz et Pavon. The name is not tenable for this species, as it is the valid name for the species better known as *Piper consanguineum* Kunth. *Matico* is derived from *Piper granulosum* Ruiz et Pavon, which is the valid name for the species.

*Melilotus*.—Said to be derived from "*Melilotus officinalis* (Linné) Lamarck;" it should read *Melilotus Melilotus-officinalis* (Linné) Acherson and Græbner.

*Oleum Aurantii, Amari and Florum*.—The botanical origin should read *Citrus Aurantium* Linné; the "amara" between the words "*Aurantium*" and "Linne" is superfluous.

*Oleum Bergamottæ*.—The words "Linné" and "variety" or its abbreviation "var." should be inserted between the words "*Aurantium* and *Bergamia*;" Wight and Arnott described a variety not a subspecies.

*Oleum Cardamomi*.—The proper name for this is *Amomum Cardamomum* Linné. If the later generic name is to be used the correct citation would be *Elettaria Cardamomum* (Linné) Maton.

*Oleum Myricæ*.—The proper author citation for *Pimenta acris* is (Swartz) Kostel; not Wight.

*Persio*.—("Fam. Parmeliaceæ") should be inserted after "lichens."

*Petroselini Radix*.—*Petroselinum Petroselinum* (Linné) Karsten is the valid designation of this product. *Petroselinum hortense* Hoffmann also has precedence over *P. sativum*.

*Phytolacca*.—The proper and valid name is *Phytolacca Americana* Linné.

*Pimenta*.—The valid designation for this is *Pimenta Pimenta* (Linné) Karsten.

*Sassafras Medullæ*.—The valid name for this product is *Sassafras Sassafras* (Lin.) Karsten.

*Succus Citri*.—The words "Linné" and "variety" or "var." should be inserted between "*Medica*" and "*acida*." Bonavia named and described a variety, not a subspecies. The word "medica" is a proper name derived from Media, and should be capitalized; also to distinguish it from "medica" referring to use as a medicine.

*Terebinthina Laricis*.—The proper designation of the species producing this drug is *Larix Larix* (Linné) Karsten.

*Verbasci Folia*.—Besides *Verbascum Thapsus* Linné, this drug is allowed to be derived from "other species of verbascum." Since the genus contains 200 or more species of wide variation in the physical, and probably in the therapeutic properties of the leaves, it would seem to be more appropriate to limit the drug to *Verbascum Thapsus*.

*Xanthoxyli Fructus*.—The generic name should be spelled with an initial Z instead of an X.

In order to restore the earliest family name used and to have them all end in "aceæ" the following changes should be made:

Fagaceæ	to Castaneaceæ	Labiataæ	to Labiataceæ
Moraceæ	to Lupulaceæ	Rubiaceæ	to Aparinaceæ
Polygonaceæ	to Persicariaceæ	Cucurbitaceæ	to Bryonaceæ
Euphorbiaceæ	to Tithymalaceæ	Compositæ	to Compositaceæ
Terebinthaceæ	to Pistaciaceæ	Leguminosæ	to { Leguminaceæ, Krameriaceæ Lomentaceæ
Rhamnaceæ	to Zizyphaceæ		
Sterculiaceæ	to Cacaoceæ		
Araliaceæ	to Hederaceæ	Rosaceæ	to { Pomaceæ, Drupiferaeæ
Umbelliferæ	to Umbellataceæ		
Oleaceæ	to Jasminaceæ	Celastraceæ	to Arillataceæ
Loganiaceæ	to Strychnaceæ	Ericaceæ	to Monotropaceæ

For assistance in bibliography my thanks are due to Dr. N. L. Britton, of the New York Botanical Garden; Dr. F. V. Coville, of Washington, D. C.; Dr. J. A. Nieuwland, of Notre Dame, Ind.; and to Miss Edith Wycoff, of Cincinnati, O.

## ON THE USE OF TRYPSIN PREPARATIONS.

BY J. H. LONG.

Trypsin preparations have found some use in medicine for many years, and mostly in the way of internal administration. This use is greatly limited by the low digestive value of the products that have been available up to the present time, which, with a few exceptions, have been weak.

In the manufacture of digestive ferments the production of trypsin has not kept pace with that of pepsin, the practical isolation of which on the commercial scale has reached a remarkable degree of thoroughness. Indeed, it seems now to be the custom among the leading manufacturers of pepsin to make first a prod-