

None of the three methods would entirely renovate lard under the conditions of the experiment although the rancid odor was diminished in all methods with fifteen to twenty per cent of clay.

SYNONYMS—A VALUABLE ASSET TO THE PRACTICAL PHARMACIST.*

BY OTTO RAUBENHEIMER, PH.M.

"Out of his surname they have coined an epithet for a knave,
And out of his Christian name, a synonym for the devil."—Macauley—On Machiavelli.

The writer for many years has filled the position of a national, in fact "International Pharmaceutical Information Bureau," answering at the rate of about one thousand questions annually by phone, mail or telegraph. May I be permitted to state that this service is rendered entirely free of charge, merely with the good intention of sharing my limited knowledge with my brother pharmacists. These inquiries either come from other retail, wholesale and manufacturing druggists or from pharmaceutical journals—both domestic and foreign—therefore the title "International."

As about 30 per cent of these inquiries pertain to synonyms and foreign names, I have, upon due inquiries, reached the following conclusions:

1. The study of synonyms in the college course is neglected by the pharmacist.
2. The post-graduate study of synonyms is still further neglected by the pharmacist.
3. The library of the average pharmacist does not contain books on synonyms. To my great regret, I am compelled to state that instead of at least a five-foot shelf of books, I find a space of about four inches devoted to this library, which consists of a copy of the U. S. P. and N. F. (sometimes even old editions at that) which two books, according to the law of most states, must be kept on hand.

Common and vernacular names of drugs, chemicals and preparations sold over the counter are in daily use by the public and the sale will be lost if the pharmacist is not acquainted with these synonyms; or has no reference books to look up the meaning. Examples of this sort are the multitude of vernacular names of botanical drugs, which names are entirely unknown in another section of the country. As a concrete example let me point out the following occurrence. During Pharmacy Week I exhibited a Medicine Chest over 100 years old, containing among other articles a bottle labeled "Coxe's Hive Syrup." The manager of one of Brooklyn's largest drug stores admired this display, but never heard of this syrup.

On prescriptions the physician will also use Latin synonyms, especially if he wants to keep the patient in ignorance of the remedy which he prescribes, which is sometimes, but not frequently, the case. Examples of that sort are prescriptions calling for *Aquilla Alba* or *Oleum Palmae Christi*, *Tinct. Macrotys*, *Sal culinare*, *Propenylis Hydratis*, *Ung, Emolliens*. In at least one case the pharmacist needed *Aqua Bullientis* and ordered same from the wholesaler, who promptly sent same in a "Thermos" bottle. Tableau!

The chemical names of the newer or synthetic remedies also cause a great deal of annoyance if not confusion. As the average druggist is not a chemist, he

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is frequently in the dark if the chemical name is given in place of the trade-mark, for instance:

Resorcinol monacetate is better known as *Euresol*; atropine methyl nitrate is *Eumydrin*; diacetyl-dihydroxy-phenyl-isatine is better known as *Isacen*; allyl-iso-propyl-barbituric acid-phenyl-dimethyl-dimethyl-amino-pyrazolon is *Allonal*. While the ignorance of these long chemical names is somewhat excusable, although the pharmacist should be provided with books on Newer Remedies, so as to look same up, a large number of cases have come to the writer's attention, for which there is no excuse, from which I will quote the following few. A prescription called for *Antipyrin Salicyl*. The druggist did not compound it although he had "Salipyrin" in stock. Another one for *Rubrum Scarlatinum* was refused, although "Scarlet Red" was on hand. Another prescription with *Methenamin* as one of the ingredients was delayed for six hours so the doctor could be consulted. Had this druggist consulted the U. S. P. X he would have seen at once that this was the new title for "Hexamethylamine." After all, a little common sense is quite helpful in the deciphering of synonyms or trade names.

In my address as Chairman of the Section of Practical Pharmacy and Dispensing at the Richmond Convention, May 1910 (Proc. A. Ph. A., Vol. 58, page 1091) one of my recommendations was the study of synonyms, especially by the practical and dispensing pharmacist. In an early number of the JOUR. A. Ph. A., I (1912), 173-176, I even started a Department of Synonyms, divided into Latin-English, English-Latin, German-Latin and French-Latin. Not receiving any coöperation from other members, the writer dropped the subject.

In large cities with a cosmopolitan population the customers frequently know the name of the remedy only in their native tongue and the knowledge of a little foreign "lingo" will attract them to your store. The sign "Deutsche Apotheke" still stands for "Reliability." In my own pharmacy we cater to these foreign customers and I will give a few daily examples: Germans will call for *Essigsaurer Tonerde*—meaning Solution Aluminum Acetate; British for *Condy's Fluid* which is a solution of potassium permanganate; French, for *Fleurs de Tilleul*—Linden Flowers; Italians, for *Sanguette*—Leeches; Spaniards, for *Comino*—Cumin Seed; Jews, for *Mailines*—Dried Raspberries.

HISTORY OF SYNONYMS.

In order to make this paper somewhat complete, I herewith include a bit of history abstracted from Schelenz: "Geschichte der Pharmazie," Tschirch: "Handbuch der Pharmakognosie" and LaWall: "Four Thousand Years of Pharmacy," the proper page references being given.

Dioscorides, about 50 A.D., the Father of Materia Medica wrote a book "VO Sa," on synonyms, containing the plant names in Roman, Etruscan, Punic, Egyptian, etc. ("Schelenz," page 132). Under Glycyrrhiza, Dioscorides mentions 12 synonyms ("Tschirch," Vol. 1, page 300). The Greek lexicographer Suidas, about 970, wrote a "Synonymarium." Constantinus Africanus (1010-1087) the "Orientes et Occidentis Doctor," who traveled for 40 years and then had to flee from Carthage to Salerno, wrote a Glossary of Herbs and Drugs ("LaWall," page 129).

The School of Salerno and its lexicographers during the 12th and 13th centuries were authors of many books on synonyms ("Tschirch," Vol. 1, page 300). One

of the first official formularies, "Antidotarium Parvum," written by Nicolaus Praepositus, Dean of Salerno, about 1100, contains an Appendix of synonyms, whose author is said to be Johannes Actuarius ("Schelenz," page 307). Another Table of Synonyms which spread all over Europe was "De Nominibus Herbarum et Specierum et Aliorum, que autonomas ponuntur" ("Schelenz," page 310). Farragius Judæus of Salerno in 1276 published "De Expositione Vocabularum, seu Synonymorum Simplicis Medicinæ" ("Schelenz," page 316). Simon de Cordo Januensis, or Simon of Genua, physician to Pope Nicolas IV, who died in 1293, after studying plants in Greece and the Orient, utilized over thirty years of his life, 1270 to 1303, to write "Synonyma Medicinæ," again published in Parma 1473, Padua 1473, Venice 1514 and Lyon 1534 ("Tschirch," Vol. 1, page 563 and "Schelenz," page 329).

In 1562 there was published in Venice "Mesue Graecorum ac Arabum Opera Omnia," a compilation of Greek and Arabian authors with comments by Jacob Sylvius and John Monardus. This work also contained a chapter on "Succedanea" and a complete list of Synonyms ("LaWall," page 225). The "Luminare Majus," by John Jacobus Manlius de Bosco of Alexandria, also contains a list of Synonyms. This work was published in Venice 1494, 1496 and 1501 and remained an authentic book until the middle of the 16th century ("Schelenz," page 407). According to Schelenz (page 418) the first complete and separate book on synonyms was entitled "Medicinæ Herbariæ" by Johann Agricola, who died in 1570; he was professor of Greek Literature and professor of Medicine at the University of Ingolstadt, Bavaria. He is not to be confused with George Bauer, who latinized his name to Agricola (1490-1555) the father of scientific mineralogy and metallurgy. Caspar Bauhin wrote "Pinax Theatri Botanici," Basel 1623, 1671 and 1735, which contained 6000 plant names ("Tschirch," Vol. 1, page 300).

SYNONYMS IN THE PHARMACOPŒIAS.

One of the oldest official pharmacopœias, the one of Cologne, "Pharmacopœia Coloniense," 1627, contains a separate list of synonyms entitled "Nomenclaturam item chymicorum et abstrusorum vocabulorum cum notis chymicis.

"Pharmacopœia Persica exidiomate Persico in Latinum conversa," by Angelus Sancto Joseph, Lutetiae Parisorum, 1681.

"Nomenclatore botanicus plantarum in terris Danicis," by G. C. Oder, Hafniae 1769.

"Pharmacopœia Amstelodamensis nova," 1792 contains an Index Synonymorum.

As early as 1821 there was published in Berlin a book on the comparative nomenclature of the principal Pharmacopœias by Dr. E. L. Schubarth entitled "Vergleichende Nomenklatur der vorzueglichsten Pharmakopoen der deutschen und angrenzenden Laender." It is a strong coincidence that this year, 107 years after Schubarth's work, there was published a similar book by the Deutscher Apotheker Verein in Berlin, namely "Synonyma der Deutschen Arzneibücher" zusammengestellt und ergänzt by Dr. Alfred Adlung und Dr. Paul Vasterling. This excellent little book of 128 pages, a copy of which I have here for inspection, contains a collection of the Latin, and some German, titles and synonyms of the six German Pharmacopœias and four Ergänzungsbücher (Supplements corresponding to our N. F.). The official titles are underlined and trade-mark names are desig-

nated with a cross (+). The following for examples will give an idea of the thoroughness of this compilation:

Acetum Aromaticum. *Aromatischer Essig, Genürzessig, Räuberessig Pestilenzessig, Acetum anglicum, beroliense, pestilenziale, antisepticum, bizoardicum, prophylacticum, quatuorlatronum.*

Radix Liquiritiæ. *Süßholz, geschältes, auch Russisches Süßholz, Lakritzenholz, Radix Liquiritiæ, oder Glycyrrhizæ Russicæ, Hispanicæ, glabræ, mundata, echinata.*

Veronal. *Diäthylbarbitursäure, Diäthylmalonharnstoff, Acidum diaethylbarbituricum.*

This collection of synonyms will be of great help not only to the practical pharmacists, but also to writers and authors and, last but not least, to the members of the Revision Committee of Pharmacopœias and similar standards.

The German and other Teutonic Pharmacopœias contain in the Appendix a Table of Synonyms, which in D. A. B., VI (1926), occupies five pages and in the E. B., IV (1916), 10 pages. The following examples will serve as illustrations.

D. A. B. VI.

Argilla alba—*Bolus alba.*

Mercurius vivus—*Hydrargyrum*

Weisse Augensalbe—*Ung. Zinci*

Speckstein—*Talcum*

E. B. IV.

Flores Naphæ—*Flores Aurantii*

Oleum Napi—*Oleum Rapæ*

Harlemer Oel—*Ol. Terebinthinæ sulphuratum*

Welters Bitter—*Acidum Picronitricum*

The E. B., III (1906), with a 10-page table also contains real organic chemical synonyms for instance: *Ortho-Aethoxy-Ana-Benzoyl-Amido-Chinolin*—**Analgen**. In this case and a great many others, the trade-mark was coined from the chemical name.

Now let us see what stand the U. S. P. takes on Synonyms. The U. S. P., 1820, contains a Latin Index of Names and Synonyms of four double-column pages, of which the following will serve as illustrations: **Creta**, *vide Calcis carbonas*; **Lytta**, *vide Cantharides*; **Succus Inspissatus**, *vide Extractum*.

The U. S. P., 1820, furthermore contains a four-page double-column Index of English names and synonyms, in which I find: *Blistering Cerate* see **Cerate of Cantharides**; *Citrine Ointment* see **Ointment of Nitrate of Mercury**; *Volatile Salt*, see **Carbonate of Ammonia**.

Now as to the status of the present U. S. P. and Synonyms. Under General Principles to be followed in Revising the U. S. P. X that book makes the following statement on page XLV:4. *Synonyms*.—It is recommended that the use of synonyms should be extended in the next revision, and the synonyms printed in the text of the Pharmacopœia, immediately after the official English name of the substance. When an article is known in commerce under more than one commonly used English name, such vernacular titles may be given as synonyms. A statement shall be made in the Preface of the U. S. P. that substances labeled with an official synonym must comply with the same standards, tests and requirements as are demanded for the article under the official title.

The Preface of U. S. P. X on page XI states:

Synonyms, printed in small type, will be found following some titles. The Convention passed the following resolutions:

Substances labeled with an official synonym must comply with the same standards, tests and requirements as are demanded for the official article. It is understood that a synonym

appearing under the title of a drug applies with equal force to any official preparations made from that drug.

The Preface of U. S. P. IX on page XXVIII gives the same statement, but with the following addition: In a few cases synonyms are enclosed in quotation marks; these names, while not scientifically correct, are so largely used in commerce that it seems wise to include them.

Sorry to say, this explanation was omitted from U. S. P. X which authority, nevertheless, under **Sodii Thiosulphas**, gives the synonym "*Sodium Hyposulphite*."

Under General Principles to be followed in the Revision of N. F. V, the statement on page XV, No. 5, Acceptance of U. S. P. principles also pertains to synonyms.

SUBDIVISION OF SYNONYMS.

I have divided the synonyms into the following classes: (1) Animal, (2) Vegetable or Botanical, (3) Mineral or Chemical, (4) Preparations, (5) Proprietaries, (6) Trade-Mark Names.

As to their language we have the following three subdivisions: (1) English and Vernacular, (2) Latin, (3) Foreign Names.

The English or vernacular or provincial synonyms are generally a great deal of annoyance to the pharmacist and druggist. This is especially true in *Botanical Drugs*, which are known by *entirely different names in different sections of the United States of America*. Matters are still made worse as many synonyms have been erroneously applied. In such a chaos a reliable reference book is needed—and badly needed. The best in my opinion is "Plant Names, Scientific and Popular" by the late Dr. A. B. Lyons, who will be remembered, in fact revered, by most members of the A. Ph. A. This work includes in the case of each plant the correct Botanical Name in accordance with the reformed nomenclature, together with Botanical and Popular Synonyms and many Vernacular, German, French and Spanish Names. As this book contains a very complete Index and a great many vernacular names, I can highly recommend it.

Among the many books on *Chemical Synonyms* I want to call attention to "The Condensed Chemical Dictionary," published by the Chemical Catalog Co., New York City. Besides Synonyms the following information is given: Derivation, Habitat, Constituents, Properties, Constants, Uses, Method of Purification, Grades, Containers, Fire Hazard and R. R. Shipping Regulations. The "P. W. R. Manual," published by Powers-Weightman-Rosengarten Co., Philadelphia contains many chemical synonyms, for instance under **Acid Benzoic**—*Phenylformic Acid*; under **Carbon Tetrachloride**—*Perchlormethane*, under **Pelleterine Tannate**—*Punicine Tannate*. This book could be improved by cross references.

That works on *Pharmaceutical Synonyms* are much in demand can be seen from the publication of books over 100 years ago. As early as 1826 the Philadelphia College of Pharmacy published a "Druggist's Manual" with Latin and English Synonyms and the German, French and Spanish Names of Drugs. (For particulars see "First Century of P. C. P.," page 71.) Several other publications have appeared in the United States to which I will briefly call attention.

Dr. Fr. Hoffmann: "Volksthümliche Deutsche Arzneimittelnamen," *Pharm. Rundschau*, New York City.

Dr. Fr. Hoffmann: "Popular German Names of Drugs and Medicines" (3 editions), Pharm. Review Publishing Co., Milwaukee.

Harold Bruun: "Popular Scandinavian Names of Drugs and Medicines," Pharm. Review Publishing Co., Milwaukee.

A. Graa: "Polyglot Pharmaceutical Lexicon of Drugs, Chemicals and Pharmaceutical Products with their synonyms in Latin, English, German, French and Italian." 1904, Luthin & Laufer, New York City.

A. Graa: "Manual of International Pharmacy." A very extensive Collection of Drugs, Chemicals and Pharmaceutical Products with their synonyms in Latin, English, German, French and Italian. 1911, Anrig & Co., West Hoboken, N. J. The last-named book is a masterwork of 450 pages. Graa, an old Swiss pharmacist, who mastered the five languages, spent most of his life on the compilation of this book, which, however, was not a financial success as the druggists hated to part with \$5.00. In disgust with American pharmacy and, besides, being deprived of his wine by the Volstead Act, Graa went back to Switzerland, where the writer had a pleasant visit with him in Basel during his European trip in 1926. I might also state that the publishers have disposed of the books on hand as old paper and the work is now unobtainable.

BIBLIOGRAPHY.

For those pharmacists interested in this subject of Synonyms I append the following bibliography. The classification is I, Botanical; II, Chemical; and III, Pharmaceutical. I have tried to make this bibliography as complete as possible, or at least to be a fairly representative list of books contained in my own somewhat voluminous private library. In many instances I have added comments.

I. Botanical: A. B. Lyons, "Plant Names, Scientific and Popular," Nelson Baker & Co., Detroit.

J. Rudolph, "Pharmaceutical Directory and Hand Book," New York City. English Botanical, Pharmaceutical and German Names.

J. M. Nickell, "Botanical Ready Reference," Murray & Nickell Mfg. Co., Chicago. Botanical, Common, Pharmacopœial and German Names.

Wren and Holmes, "Potter's Cyclopoedia of Botanical Drugs and Preparations," Potter & Clarke, London, E., 3rd Edition, 1923.

"Standardized Plant Names," a catalog of approved scientific and common names of plants in American Commerce. American Joint Committee on Horticultural Nomenclature, Salem, Mass., 1923.

"Spatula Herb Book," Popular and Botanical Names, Boston.

II. Chemical: "Condensed Chemical Dictionary," The Chemical Catalog Co., New York City.

"The Chemical Age Chemical Dictionary," Van Nostrand Co., New York City.

Wm. Gardner, "Chemical Synonyms and Trade Names," Crosby, Lockwood & Son, London. An excellent book to which a Companion Volume has since been added.

Darling, "Inorganic Chemical Synonyms."

"P. W. R. Manual," Powers-Weightman-Rosengarten Co., Philadelphia.

H. Remy, "Chemisches Wörterbuch," Teubner, Leipzig.

III. Pharmaceutical: C. F. Schulze, "Pharmaz. Synonymen nebst ihren volkstümlichen Benennungen" (also gives historical data), Julius Springer, Berlin, N. W.

J. Holfert, "Volkstümliche Arzneimittel-Namen."

Holfert-Arends, "Volkstümliche Arzneimittel-Namen," Julius Springer.

G. Arends, "Volkstümliche Namen der Arzneimittel, Drogen und Chemikalien," 10th Edition, 1926, Julius Springer, Berlin.

Novak and Roch, "Synonyma Apothecariorum in Latin, German and Bohemian," S. Karger, Berlin.

A. T. Kauhse, "Dictionary Pharmaceutical Names and Synonyms in Latin, Russian, German and French," St. Petersburg, 1903.

L. Wiorogorski, "Lexicon Synonymorum Pharmaceuticorum." Seven thousand medicines in Latin, German, French, English, Polish and Russian. The articles, including newer synthetic remedies, are voluminously treated with regard to vernacular names. Warsaw.

E. F. Anthon, "Handwörterbuch der chem. pharmaz. techn. und pharmakogn. Nomenklaturen" in Latin, German and French. Karl Voigt, Jr., Weimar. Under Mercuric Chloride there are sixty-two Latin, forty-three German and seventeen French synonyms given.

Nemnich, "Neues Waren—Lexikon" in twelve languages—German, Holland, Danish, Swedish, English, French, Italian, Spanish, Portuguese, Russian, Greek and Latin. Hamburg, 1820. An old book, but still very useful.

Dr. Karl König's "Warenlexikon für den Verkehr mit Drogen und Chemikalien," 12 editions, 1911, Vieweg & Sohn Braunschweig in Latin, German, English, French, Dutch and Danish.

Dr. Siegfried Hahn, "Internationales Wörterbuch der gebräuchlichsten Arzneimittel." Latin, German, French, English, Italian. Gust. Hempel. Berlin.

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A. Graa, "Polyglot Pharmaceutical Lexicon," New York City, 1904.

A. Graa, "Manual of International Pharmacy," West Hoboken, N. J., 1911.

A. Graa, "Vocabularium Pharmaceuticum," Basel, 1924.

CONCLUSION.

Let me hope that this paper will arouse a little more interest in the knowledge of synonyms and that the pharmacist, especially the practical and practicing pharmacist, will increase his library with books on this subject. If this object is obtained then the author is well paid for the time and trouble he has taken in the preparation of this paper.

SCIENCE IN EVERY-DAY LANGUAGE.

A Chinese Rhubarb Story.

Prof. Anton Hogstad, Jr., writes in the *Rocky Mountain Druggist*, for March, that "the late Dr. Henry Kraemer—a master pharmacognosist in his day—always delighted in telling his students the manner in which a certain pharmaceutical manufacturing house took great pride in the selection of the Chinese rhubarb that entered into their various rhubarb preparations. "Only the sound rhubarb rhizome and roots were selected, the black-hearted pieces being discarded.

"The cathartic activity of rhubarb depends upon the presence of certain oxymethyl anthraquinones for their activity, the drug being referred to as one of the emodin-bearing group, which group includes Cascara, Frangula, Aloes, Senna, etc.

"These oxymethyl anthraquinones when acted upon by the alkaline juices of the intestines are changed in their chemical composition, the new compounds as formed cause an irritation resulting in catharsis.

"Here is the interesting part of the story. Studies on the black-hearted rhubarb rhizomes and roots have shown them to possess greater cathartic action than the beautiful, sound specimens of drug. No doubt in the rotting process that took place within the drug specimens producing black-hearted samples, a similar change resulted as takes place in the intestines, producing compounds that possess greater cathartic action than the original oxymethyl anthraquinones as found in the drug itself. Thus we are inclined to believe that at times the poorest may be better than the best."