

SUGGESTIONS FOR IMPROVEMENT IN THE TEXT OF THE PHARMACOPŒIA WITH SPECIAL REFERENCE TO THE DEFINITIONS *

BY H. H. RUSBY, M.D.

At the proper alphabetical points in this paper, I have introduced the names of those vegetable drugs which I believe should be included in our Pharmacopœia but which are not there. My reasons for this recommendation have been fully set forth in previous articles (JOUR. A. PH. A., 15, 961 (Nov.) and 16, 528 (June)). My primary reason, and one that I believe to be sufficient, is the fact that these drugs are sold, in bulk, in their crude form, in the number of pharmacies stated in connection with my mention of the different articles. This fact alone calls for their admission, on the principle of "pharmaceutical necessity." It is to be noted further that some of them are represented at present in our Pharmacopœia, in the form of one or more of their preparations, for the manufacture of which they are "pharmaceutically necessary." Even though such preparations are not in the Pharmacopœia, they are largely supplied by pharmacists, and such sales have not been included in my statistics, on which these recommendations are based.

These conditions, as already stated, seem to me to demand the inclusion of such drugs, without regard to the exact degree of their "therapeutic usefulness," no matter where or when or by whom such usefulness is "approved." Nevertheless, I have not failed to refer to this subject of therapeutic usefulness in this paper, when it appears to be important.

As an illustration of a definition perfect in substance, expression and form, we can cite nothing better than that of **Adeps**: "The purified internal fat of the abdomen of the hog, *Sus scrofa* var., *domestica* Gray (Fam. *Suidae*)." The same form is used for that of **Adeps Lanae**, but nearly all other definitions are introduced with the name of the article defined, as "Aconite is the dried tuberous root." Both are equally perfect as definitions, choice relating wholly to taste and convenience. If a general dictionary were to introduce every definition with "—is," the increased cost and inconvenience would be a very serious matter, but these considerations are trifling in the present case. The use of the introductory words adds positiveness and is not likely to be found objectionable to anyone. Being adopted, however, the form should prevail throughout.

The innovation next to be considered appears to me to be indefensible, on either scientific or literary grounds. It is well illustrated by the definition of **Colchici Cormus**; "Colchicum Corm is the dried corm of *Colchicum autumnale* Linne (Fam. *Liliaceae*). Colchicum Corm yields not less than 0.35 per cent of colchicine."

All study of definitions, as a subject, teaches that their object is to state, in the briefest and most concise manner possible, exactly what the thing defined is, in language that omits nothing pertaining to the word and admits nothing else. In the first sentence of this definition, we have a positive statement that this article is the Corm of *Colchicum autumnale*, which is not exactly

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true. In order to be this drug, the corm must contain a specified percentage of colchicine. The use of this title here is special and limited and it does not refer to the ordinary meaning, nor to the botanical meaning of the term, hence the above statement would not be a correct answer to the question, "What is the drug *Colchicum Corm*?" The only correct answer would be "*Colchicum Corm* is the corm xxxxxxx, containing not less than 0.35 per cent of colchicine." If this is the correct answer to that question, then that answer is the correct definition of the title. I doubt whether any careful scholar can be found who would not support this view. I believe that the Pharmacopœia should thoroughly revise this language and incorporate all such qualifying requirements into the respective definitions in a single sentence.

In the case of physiological standards, the conditions are different. Such standards do not refer to what the thing is, physically or chemically, but to a test of what it will do; that is, of its efficiency. To combine these physiological standards with the definitions is not called for and would be impracticable in many cases.

Acacia.—The words "The stems and branches of" are superfluous and therefore out of place in a definition, the wording of which should be limited strictly to the accomplishment of its purpose. The addition of these words is an instance of change made for the mere purpose of change, without regard to being for better or for worse.

Aconitum.—In accordance with principles discussed above, the second sentence printed under the definition should be incorporated into the first thus, "without more than 5 per cent.," etc.

Adeps Lanae.—Would not the word "fatty" appear better than "fat-like," and be equally correct?

Agar.—Here again the second paragraph of the definition should be combined with the first, thus "containing not more than," etc.

Alcohol.—This language cannot be construed by any process of reasoning, as constituting a definition. Why the form used in a previous edition, beginning "A liquid containing," and specifying the amount of water, should have been abandoned, is not clear. On the whole, it seems preferable to the present one.

Aloe.—Since there are two juices in these leaves, and the presence of one of them in aloes spoils it, would it not be more accurate to say the "watery juice?"

Aloin.—Better to say "from aloes, varying in."

Amylum.—The term "the granules" appears indefinite and unscientific. It is better to say "the starch-grains." In ordinary language, this would be using a word to define itself, but this is not so in the present case. What we are defining is not starch grains in the general sense, but the official drug "starch." It is as appropriate to define this as being the "starch grains of" a particular kind as to define *Guaiaci Lignum* as "the wood of the tree," or *Carbo Ligni* as "wood charcoal prepared" as directed. The language of the preceding edition, in this case, appears decidedly preferable to that of the present one.

Apium or Celery Seed.—Include; sold in 69% of pharmacies.

Aqua.—This definition is a model, since its language specifically includes all the following descriptions and test matter as a qualifying part of itself.

Many years ago, I proposed that there be a general statement in the introduction of the U. S. P. stating that all such matter was to be regarded as a qualification of the definition, and as having the same binding force as the definition itself.

Arnica Flowers are sold in 37% of pharmacies.

Asafoetida.—As this definition stands, it includes the exudate of all species of *Ferula*,

even Galbanum, which certainly is not correct. This hyper-inclusiveness can be avoided by saying "some other species," or "one or more undetermined species."

Aspidium.—Not only is this definition faulty in form, but it is incapable of use. When male fern is fresh, the entire inner portion is of a green color. With the passage of time, the outer portions, and successively the inner ones, change to brown, until no green tissue remains. The change takes place in every piece, and different pieces will show all intervening grades. To comply with the definition, each piece would have to be subjected to the peeling or scraping off of all the brown portion, which would be wholly impracticable. It will require some investigation to determine just how to word this requirement, but it would seem fair to require that on the average at least two thirds of the diameter of the cross-fractured surface should have a green color.

Aurantii Dulcis Cortex.—Omit the comma after "fresh."

Balsamum Peruvianum.—The statement here is "Balsam of Peru is obtained from *Tolui-fera Pereirae*." This statement, occupying the position and performing the office of a definition, is absolutely inane! The Pharmacopœia might as well inform us that it is obtained from Central America or from the Western Continent or from south of the north pole; or it might tell us all the places from which it is not obtained. We might obtain a nest-full of eggs or a particular insect from that tree, which would be Balsam of Peru, according to this definition. As a matter of fact, both the bark and the fruits are actually collected from this tree for medicinal use, so these are Balsam of Peru, according to this "definition." Balsam is the proper designation of this substance, and no improvement can be made over calling it "A balsam obtained from" the tree named.

Balsamum Tolutanum.—This proper and classical title should be restored, with a definition framed on the same principles as in the case of the preceding.

Belladonna Folia.—Assuming that a lot of belladonna leaves, of full alkaloidal strength, contains 6 per cent of acid-insoluble ash, in what way would it be objectionable? Would not any amount of ash that was actually objectionable be sufficient to reduce the alkaloidal percentage below the requirement, and if so, might not the ash limit be omitted from most of such drugs? This subject of ash limits will be fully discussed under the title "Stramonium."

Belladonna Radix.—Ash limit; see "Stramonium."

Benzaldehydum.—If Benzaldehyde is *anything* that contains not less than 85 per cent of $C_6H_5.CHO$. then many mixtures might come under this name. By a little stretch we might even apply the title to the container. Unquestionably, there should be some designation of the nature or origin of the substance of which this 85 per cent of absolute benzaldehyde forms the essential part.

Benzoinum.—Benzoin is a balsam, every balsam being a "balsamic resin."

The requirements for purity are well insisted on in this case. There is no possible excuse for most of the impurities, both organic and inorganic, that are so frequently found in Sumatra Benzoin. Even if the efficiency of the preparations was not influenced, simple considerations of economy should forbid the selling of large quantities of added earthy matters to be transported so far, and to pass through so many hands, at steadily added costs.

Buchu.—A great many years ago, this definition included the three species now named, which appears to have been a correct procedure. By two eliminations, it became restricted to one species, and by two others, it has been restored to its original scope. This is an excellent illustration of the folly of making changes on insufficient grounds. By a continuation of this process, we might see this entire cycle again repeated. Since there are certain differences of odor, flavor and color in the different buchus, it would not be out of place, as is done in case of Methyl Salicylate, to require that the species yielding the preparation be stated on the label.

Capsicum.—The substitution of the name "African Chillies" for "African Pepper" appears inadvisable. Although there is carelessness in the use of these names in trade circles, it would appear desirable, all things considered, to restrict the name chillies to the various fruits of *C. baccatum*.

The restriction of the title to the African-grown product doubtless has its merits and should not be lightly criticized, but I have seen Capsicum of first quality produced in South America and Mexico, and even in Florida. In none of these instances could the article of African growth be distinguished. How then can this provision of the definition be enforced?

Cardmom Fruit is sold in 58% of pharmacies.

Cascara Sagrada.—I have elsewhere called attention to the fact that this name is purely Spanish, and that the proper Latin title is *Rhamnus Purshiana*.

Cassia Buds are sold in 34% of pharmacies.

Cataria is sold in 30% of pharmacies.

Cera Flava.—Here again we have a definition that does not offer a statement of what the article is, but of how it is obtained. It is the melted and purified honeycomb of the bee.

Cetaceum.—"Fatty substance" is obtained from the head of the sperm whale that is not cetaceum. This is obtained from "cavities in the head," according to the statement in former editions of the U. S. P., that has been changed inadvisedly.

Chenopodium is sold in 37% of pharmacies.

Chondrus is sold in 54% of pharmacies.

Chrysarobin.—The former expression, "found deposited," is more correctly expressive than the word "deposited." The language would be more in keeping with that used in other and similar cases, by saying "occurring naturally in cavities of the wood."

A question has been raised as to the applicability of the name "Vouacapoua" to some of the species that have been called "Andira." Some technical study is called for to determine which of these names applies to this particular species.

Cimicifuga.—Without claiming any special knowledge on the point, I should think it very likely that a good *Cimicifuga* might at times contain more than 4% of ash. Probably, the Committee has good grounds for fixing this figure.

Cinchona.—I have never varied from my opinion that Red and Yellow Cinchonas should be separately titled. But this question appears to be settled permanently.

However, there seems no justification for making the Compound Tincture from anything except the Red Cinchona, the original procedure. This tincture is used rather as a tonic than an antiperiodic, and the red bark is far less liable to cause cutaneous irritation and associated symptoms than the yellow. The red is sold specifically in 44%, the yellow in 25%, of pharmacies.

Cinnamomum.—The substitution of the indefinite Saigon species for the standard and classical Ceylon is an amazing performance, the rationale of which has never been explained to me. The Ceylon and Saigon are sold equally.

Citrullus or watermelon seed is sold in 30% of our pharmacies.

Cocculus Indicus in 44%.

Copaiba.—The claim is made, apparently on good authority, that African Copaiba of good quality has been imported. If the definition contained a requirement for the amount of its volatile oil, the restriction to "South American species" might be abrogated without risk.

Coriander is sold in 44% of our pharmacies.

Cydonim or Quince Seed is sold in 51% of pharmacies.

Digitalis.—It is not a good procedure to eliminate all requirements regarding purity from this definition. The requirements given at the end of the second paragraph are excellent, but their proper place is attached to the definition.

Elaterium.—This definition, in view of the conditions of the case to which it refers, is positively dangerous. Care in the discrimination between elaterium and elaterinum cannot be carried too far, especially considering the close similarity in names. Elaterium is "a substance obtained from the juice of" this fruit. Thus, so far as the definition states, Elaterium and Elaterinum are one and the same, yet the correct dose of one is liable to prove fatal in the case of the other. The former definition read "obtained from elaterium (which is) a substance deposited by the juice of the fruit." It may be that the elaterinum is sometimes obtained directly from the juice, or even from the fruit, but it can be, and was formerly, extracted from the elaterium, and this specification in the definition serves the very useful purpose of directing attention to an important distinction. The definition "a neutral principle extracted from elaterium, which is a substance deposited by the juice of the fruit," was formulated by a man of rare powers and habits of discrimination, and it should never have been tampered with by anyone less capable and cautious.

Ergota.—So far as I know, no one has ever tested the ergot that develops on the stem and leaves to ascertain whether it has the same properties as that which replaces the grain. It would doubtless be rejected, in any case, and is in fact rarely seen. Still, it does seem as

if the scientifically accurate definition that so long prevailed should have gone undisturbed. This is another case of making changes from a love of novelty. It is as though a geographer were to locate the Amazon River on some other continent because we had been for so long a time locating it in South America that a change seemed desirable!

A more serious error is in stating that ergot is unfit for use after being kept more than a year. If kept properly dry, it is unchanged after 25 years. This statement should be qualified to read "Unless kept perfectly dry and excluded from the atmosphere, it is unfit," etc.

Eucalyptol.—The retention of the name Eucalyptol in this title, even though cineol is the original, and therefore the proper name, is entirely correct, on the ground of "convenience and safety," but wherever used otherwise than as a title, the use of the correct name is desirable.

Foeniculum is sold in 66% of pharmacies.

Gelatinum.—It would seem that some appropriate qualification could be found for the word "product" in this definition, to render it more definite. Even the term "albuminoid" would be of service.

Glycerinum.—This is not a definition at all.

Glycyrrhiza.—I have commented elsewhere on this definition. As there is a difference of opinion as to whether these are distinct species or varieties of one, it seems justifiable to treat them as two, for the purpose of eliminating the absurd association.

Granatum.—The change of wording from "stem and root" to "stem or root" makes matters worse than before. If stem bark and root bark are to be mixed, it should be in a natural ratio, rather than to allow one to use stem bark only and another the thrice more active root bark. Why not specify an alkaloidal percentage?

Illicium is sold in 40% of pharmacies.

Ipecacuanha.—The nomenclature of these plants is still in doubt. It now seems quite clear that the original and correct name of the Brazilian Ipecac plant is *Ervea* and neither *Cephaelis* or *Uragoga*. The Colombian plant is not well enough known to admit of a positive conclusion as to its genuine affinity. However, the agreement of the U. S. P. authorities, in the interest of convenience, to use the incorrect *nomina conservanda* of the internationalists will determine the retention of *Cephaelis*. A page of the appendix of the Pharmacopœia should be devoted to a display of these different names. The first column should contain those titles regarding the botanical names of which there is confusion. In a second column should be the correct name, based on the rules of priority, and in a third, the incorrect names, the use of which has been agreed on for convenience. As it stands now, a careful medical botanist who will use none but correct names is discredited in the minds of the many who do not understand the situation, and who believe him to be in error because his names do not correspond with those of the U. S. P.

With the two ipecacs differing so greatly in their constituents, which constituents differ, in properties and uses, I renew my expression of opinion that they should be segregated under two titles.

Emetine and *Cephaeline* should both be included in the Pharmacopœia and they should be defined as obtained from the Ipecac plant and not from the root only. There is a growing scarcity of this drug, with steadily rising prices. The root probably represents only about a tenth of the total weight of the plant, from all parts of which the alkaloids could be extracted. It is the use of the root for this extraction that has caused the increased demand, which would be greatly reduced by the use of the entire plant for this purpose.

Jalapa.—It is about time that a movement was started to secure a better grade of this article than the 7 per cent resin requirement calls for. Formerly, there was no difficulty in securing Jalap containing 15 to 18 per cent of resin. Our demands have been lowered gradually to 12, 9 and now 7 per cent, and we could procure a much better article if we would insist upon it.

Juniperus is sold in 66% of pharmacies.

Lactosum.—Another instance of a wholly unwise change of title. The term *Saccharum Lactis* was very expressive and, more important, was thoroughly in use, and the substitution of lactose is in violation of all conservative principles.

Lavender Flowers are sold in 35% of pharmacies.

Lobelia.—It would be well to specify the thickness of the stems, as is done in the case of peppermint and spearmint.

Mace is sold in 42% of pharmacies.

Manna.—So far as the language of this definition would determine, it is the alcohol that must be of 90 per cent "by volume." This language is unintelligible.

Matricaria is sold in 72% of pharmacies, and is a very useful medicine.

Mel.—How is a pharmacist, purchasing honey, to know whether the bees gathered it "mostly from the nectaries of flowers?" Or how can the owner of the bees himself know this fact? All that anyone can know is that it is "the saccharine substance deposited in the honeycomb by the bee," and the former definition is but marred by this uncalled-for extension.

Myrcia Leaves are sold in 63% of pharmacies.

Myristica.—The ordinary presence of mold in the cavity of this seed has been referred to elsewhere, and its recognition becomes a legal necessity.

Myrrha.—The term "other species," unless qualified by preceding it by the word "some," opens the way for the inclusion of recognized adulterants.

Opium.—It is to be noted that the fruit of the poppy plant is not a capsule.

Orris is sold in 56% of pharmacies.

Pimento or allspice is sold in 50% of pharmacies.

Piper nigrum is sold in 49% of pharmacies.

Pix Pini.—Here, if anywhere, we have justification for changing an absurd title to a proper descriptive one, yet I believe the committee, in doing so, violated one of the most important of Pharmacopœia principles. The utter absurdity of regarding "a product obtained by the destructive distillation" as constituting a definition has been discussed elsewhere.

Populi Gemmi is sold in 33% of pharmacies.

Prunus Virginiana.—The form of this definition can be improved, and the botanical name is subject to question, in view of recent claims regarding the species that Linne had in hand when describing it.

Quillaia is sold in 42% of pharmacies.

Resina Draconis is sold in 31% of pharmacies.

Rheum.—Here again it would be safer to say "some other species."

Sanguinaria is sold in 40% of pharmacies.

Sapo.—The committee has done well to steer clear of all controversies over this annoying subject, by making its own definition and title clear and unmistakable, no matter what differences exist in commercial usage. Sapo or soap, purchased as an official drug, or for medicinal use, in the broadest usage, must be the article here defined, and in order to secure it, the use of the word "soap" is just as compelling as that of "Castile soap" or "Olive-oil Castile soap;" hence, the medicinal article is fully protected by the present language of the Pharmacopœia, which should not lend itself to contentions regarding non-medical commercial usage. The Pharmacopœia contains a definite statement that its standards are to relate only to the medicinal uses of the articles treated. When one considers the claim that has been seriously and officially made by a witness before the Federal Trade Board that a man advertising as Castile soap an article that was manufactured outside of Castile, should be punished for fraud by being forever denied the use of the United States mails, we may well congratulate ourselves that the Pharmacopœia is completely severed from such complications.

Sarsaparilla.—The Committee has erred very seriously in imposing an ash-limit of four per cent on Mexican Sarsaparilla, and it should exercise the powers conferred on it by an immediate correction. It is possible to produce this article of this quality, as is proved by the fact that such Mexican Sarsaparilla is occasionally seen in commerce, but it is equally well demonstrated that it is impracticable to do so. Enormous losses have been and are being suffered by the most honest and careful dealers, through the rejection of supplies under this requirement. The conditions of collecting and preparing the Mexican variety render this standard practically unattainable.

Sassafras is sold in 61% of pharmacies.

Senna.—Although it is very doubtful whether Alexandria senna possesses the superiority over India senna that is popularly supposed to exist, it is an indisputable fact that this belief is very general. Acting in harmony with official procedure in other and similar cases, it would be well to specify that the label must state the variety. This is particularly desirable here, because this drug is so largely sold in its entire state.

Senna Pods are sold in 38% of pharmacies.

Sinapis Alba is sold in 66% of pharmacies.

Sinapis Nigra.—The very close similarity of various non-official mustards to this and also to white mustard renders it highly desirable that *Sinapis Alba* should have been retained. The description is not sufficiently minute to permit distinction, in all cases, and it should be improved.

Stramonium.—The omission of *D. Tatula* from this definition was a wise procedure. There is no better reason for the admission of that species than for any of the numerous others in the genus, as no definite data exist regarding its constituents and activity. All the plants of this group, no matter how similar, exhibit differences in composition and activity which forbid their indiscriminate substitution for one another.

The most important consideration regarding Stramonium and other drugs in a similar position, relates to its ash limit. Considerable sums of money have been lost during 1926 and 1927, through the rejection by the Bureau of Chemistry, acting under the U. S. P. requirements, of shipments of drugs that were of standard quality except for containing an excess of sand and of insoluble ash, Stramonium being one of the principal articles to which this statement applies. It is true that it is often possible to clean such drugs, but the margin of profit is often so small that this operation will result in loss. Aside from the mere consideration of ordinary cleanliness, there are two specific objections to the presence of earthy matters in drugs, on account of which ash limits should be imposed.

The first is purely a financial one. For each pound of sand present, every dealer along the line, and finally the consumer, is obliged to pay the price of a pound of drug; but, if the amount of sand is known from the beginning, as it can and should be, a suitable deduction can be made, which will correct this objection, in most cases. The effect of this loss, which would affect the collector and original shipper, would be to discourage such negligence, but there are cases in which this would not be true.

For generations it has been the custom for asafœtida shippers to add a peculiar red earth to their product. A regular trade in this adulterant is said to be carried on, and I have known this adulterant to amount to 85 per cent of the whole. Similar operations are almost the rule in preparing papaw juice. Very frequently coarse tapioca is merely dipped in the juice and sold as papaw. In such cases, especially in that of asafœtida, the money waste in transportation and trading is very great, and results in final serious loss, and the requirements can scarcely be too strict.

A second danger is that, with the admission of earthy matters, there may enter impurities of a more objectionable character than that of sand, but in that case, two or three per cent more or less is not going to matter.

The third and most important difficulty is that the medicinal strength of the drug is proportionately lowered by addition of inert matter. In the case of drugs for which there is no chemical standard, this objection is of great importance, but even here it is on the whole better to fix a liberal standard than to impose unreasonable burdens and risks on the dealers. On the other hand, there are some cases, notably that of Stramonium, in which there is a definite and effective way. If a lot of Stramonium containing 8 per cent of ash meets the assay requirement, the only effect of the sand is to limit excessive activity. In some such drugs we have an upper as well as a lower limit of activity, and the effect of this excess of sand would be merely that of promoting uniformity. By this, I do not mean to argue for excessive laxity, but to point out that the harm that may be done by a moderate excess of sand is not so great as that which has been done by the rejection of shipments that were of good quality from every practical point of view. In the case of henbane, this consideration has been acted upon. It is a curious fact, but one that all experience confirms, that shipments of henbane of unusually high alkaloidal strength, more often than not, contain the larger percentages of ash. I am convinced that the assay committee of the Revision Committee should investigate the bearing of these considerations.

Strophanthus.—Here we have a definition that admits both *S. hispidus* and *S. Kombé*, while that of Strophanthin, the active constituent, is referred to *S. Kombé* only. On the face of it, this would indicate that there is no strophanthin in *S. hispidus*. The admission of the latter to the definition of Strophanthus was based purely on physiological evidence, and doubt is cast on the sufficiency of this evidence in various ways. I have myself known of a case where

a life was lost by depending on large doses of tincture of *Strophanthus hispidus*, which had no appreciable physiological effect. In another case, no harmful results ensued from the taking of an enormous over-dose of a similar preparation. Recently, a case has been reported in which a tincture of *Strophanthus*, tested by the official process and found perfect, had to be given in 30 minim doses to secure any appreciable effect, while one made of known *S. Kombé* seeds was highly efficient, in the official dose. All of which goes to show that physiological standardization is still on trial, and that it is very rash for our pharmacologists to use it as conclusive evidence against the teachings of clinical experience.

Viburnum Prunifolium.—Although this drug is sold in comparatively few pharmacies, in the crude state, its preparations are very largely used, and the drug is one of our important articles of commerce. Its deletion from the Pharmacopœia was based on the negative results of experiments to determine its activity on the excised uterus! The pharmacologists performing these experiments have never advised testing the optical effects of atropine on the eye; after decapitation; not yet!

In one instance, I have known a fatal case of poisoning to be averted with the greatest difficulty, the damage resulting from the administration of a dose one-fiftieth of that which guinea-pig experiments had indicated as safe and proper for man.

ABSTRACT OF DISCUSSION.

Albert Schneider said he had contended for the use of the term "micron" instead of the decimal part of a millimeter. **H. H. Rusby** replied that changes in the Pharmacopœia were only made when necessary.

George M. Beringer said Dr. Rusby had performed a very important service for pharmacy and for pharmacopœial revision. The Pharmacopœia is the work of human minds; hence, not perfect; changes in the Pharmacopœia and National Formulary should be prompted by necessity; changes in titles are apt to create confusion. He expressed himself in sympathy with many of the criticisms made by the author of the paper, and said that the Charters' investigation will be of material assistance in future revisions; some revisers are guided too much by their personal belief as to the value of medicaments; he recalled his objection to the deletion of sodium arsenate, because physicians were prescribing it daily in some form. He thought that a definition should be complete in itself, every sentence of it should be studied with that end in view; even in correspondence misconstructions will occur. He was of the opinion that the comments made in the discussion of this paper should be prepared for consideration by members of the Revision Committee.

J. C. Munch said that the bio-assay methods of U. S. P. X are deserving of commendation; there had been increased interest and attention in the potency of drugs to which these are applicable, since the transition from optional to compulsory standardization.

H. V. Army complimented Chairman Cook's efforts and results in bringing about understanding between those who differed.

Chairman Cook expressed appreciation of Dr. Rusby's contribution and regret that the Committee did not have his assistance during the revision. He said that every suggestion would receive careful consideration; that the entire text applied to an official drug or preparation. The Committee welcomes the type of constructive criticism presented by the author and those participating in the discussion.

ABSTRACT OF DISCUSSION ON THE NATIONAL FORMULARY.

Heber W. Youngken complimented the revision of the National Formulary; however, he referred to a few inconsistencies, relating to **Myrica**, **Euonymus** and **Xanthoxylene**. He also contended that micron should be used as the unit of microscopic measurement.

Considerable discussion followed relative to the spelling of *Xanthoxylum*, entered into by Messrs. Scoville, Army, Beringer and others.

J. C. Munch inquired whether the purity rubric could not be more generally used.

Chairman Scoville said that the application of a purity rubric to some articles would cause trouble—whether it is best to add a purity rubric or not, or require a definite standard, are problems with which the members of the Committee labor in the work of revision.