

Those who realize the possibilities of the Pharmacopeia and the need of greater familiarity with it, will agree that there are few objects for which the association could more profitably make a liberal appropriation.

The chairman of the Committee on Anesthesia of the Section on Surgery was written to with the object of ascertaining if the work of that committee could not be of assistance in suggesting and formulating more perfect standards for the important anesthetics of the Pharmacopeia. It was suggested that it would be highly desirable if such subjects as the following could be considered: the physiologic effects of alcohol-free and alcohol-containing ether; the effect of water and of alcohol on the volatility of ether; the effect of ethyl chlorid in chloroform; the admission of nitrous oxid into the Pharmacopeia; the advisability of recommending the admission of certain anesthetic mixtures, etc. The chairman of the Commission on Anesthesia replied, in part, as follows: ". . . We can hardly see our way, for this year at least, to take up the extensive chemical investigations which you suggest. . . . We had hoped that we might turn to your committee for chemical reports on the quality, composition, and value of the various anesthetics."

While most of the pharmaceutical and chemical problems connected with the Pharmacopeia should be left to the representatives of the pharmaceutical profession, there are a few such problems which should be approached from the standpoint of the physician and should be kept in close correlation with clinical and experimental studies.

The members of this committee believe that the chemical laboratory of the association at Chicago should be available for such investigations and recommend that additional assistance and facilities be given the chemist in charge for the more active prosecution of such studies.

It is evident that New and Nonofficial Remedies is being considered as a Pro-Pharmacopeia from which the best will be transferred to the Pharmacopeia. We believe that this work should be so regarded and that the Council should endeavor to emphasize this side of the work, which is largely independent of proprietary medicines.

It is considered especially important that careful consideration be given to the names under which new drugs are admitted to New and Nonofficial Remedies, for it is very desirable that these be brought to the attention of physicians under unobjectionable names suitable for inclusion not only in the United States Pharmacopeia but in foreign pharmacopeias, as the difficulty of effecting a reform in the nomenclature of drugs which have once come into general use has been well illustrated in the case of our own as well as of foreign pharmacopeias. Hence we urge the Council to use its influence with manufacturers to follow a more scientific system of nomenclature and through its corresponding members (the number of which should be increased) endeavor to secure an international agreement on this important subject.

Respectfully submitted,

S. SOLIS COHEN,  
GEORGE DOCK,  
R. A. HATCHER,  
E. E. HYDE,  
W. S. THAYER,  
REID HUNT, Chairman.

NOTE. (January, 1910.) Since the above report was submitted, committees of three sections of the Association, viz., those on Practice of Medicine, Ophthalmology, and Stomatology, have submitted very valuable reports embodying their views as to the revision of the U. S. P. and including drugs which they consider should be admitted to or omitted from it. These reports were published in THE JOURNAL, Sept. 4, 1909, pp. 791-796 (cf. also editorial, October 30, p. 1491, and a letter, p. 1500).

Other sections have appointed committees as follows:

*Obstetrics and Diseases of Women.*—Drs. F. J. Taussig (chairman), H. T. Byford and G. L. Hunner.

*Laryngology and Otology.*—Drs. D. Bryson Delavan (chairman), D. Braden Kyle and Algerman Coolidge.

*Dermatology.*—Drs. Wm. Allen Pusey (chairman), M. B. Hartzell and G. T. Jackson.

It is hoped that these committees will submit reports before the meeting of the Pharmacopeial Convention in May and that the other sections will appoint similar committees.

Dr. J. H. Blackburn, director of the course of postgraduate study for county societies, has recommended that each society arrange for a meeting for the discussion of the revision of the Pharmacopeia.

Prof. J. P. Remington, chairman of the present Committee on Revision, recently wrote to the Secretary of the American Medical Association requesting that this Association present to the next Pharmacopeial Convention a "report on the articles and preparations which, in their opinion, should find a place in the ninth revision of the United States Pharmacopeia." Among the reasons given for making this request is the following: "When I state to you that in 1901 more than one year's time was consumed in settling the important questions of admissions and deletions you can see how much valuable time might be saved by having a report from the American Medical Association." Dr. Simmons replied, stating that as the American Medical Association does not meet again until after the meeting of the Pharmacopeial Convention, he presumed that Professor Remington's letter belonged to the Committee on Pharmacopeia and that he had sent it to the latter. The committee will endeavor, with the help of the reports of the section committees and others, to prepare such a report for the Pharmacopeial Convention.

## THE U. S. PHARMACOPEIA AND THE NATIONAL FORMULARY

DO THEY CONTAIN A SUFFICIENT ARMAMENTARIUM FOR  
THE MEDICINAL TREATMENT OF DISEASES? \*

M. CLAYTON THRUSH, PH.M., M.D.

PHILADELPHIA

THE NEED OF A MORE INTIMATE KNOWLEDGE OF THE U. S.  
PHARMACOPEIA AND THE NATIONAL FOR-  
MULARY AMONG PHYSICIANS

The propaganda in favor of the U. S. Pharmacopeia and National Formulary which was begun but a few years ago has been reaching a higher state of development year after year, and if its future progress continues in corresponding proportions the time is not far distant when we will be able largely to overthrow by effective legislation, and in other ways, unethical proprietaries, secret nostrums and charlatanism.

This propaganda has been carried on vigorously by certain members of our own and the pharmaceutical professions and, of course, more enthusiastically in certain sections of the country than in others.

In order that this propaganda might be carried out effectively, several divisions of the subject became necessary, and each of these contributed its share of the labor and deserves corresponding commendation.

One of these was the formation of the Council on Pharmacy and Chemistry, which has passed on all the various pharmaceutical products on the market—in fact, acted as a clearing-house for the benefit of the medical profession. There is no question but that this Council has done an inestimable amount of good, and that its reports have been read with interest by all conscientious physicians. The influence of the Council can be appreciated when we note the large amount of money expended by certain firms to bring their products up to a passing standard. The medical profession can thank the Coun-

\* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

cil for the formulas of a number of well-known proprietaries which hitherto were kept secret. Its work should be continued; and some arrangement should be effected whereby the knowledge gained by the Council in its investigations should be utilized by the next Pharmacopoeial Convention, which meets one year hence, and this Council should act as an advisory committee to the Pharmacopoeial Revision Committee, and should carry out certain special investigations as they may arise in revising the next Pharmacopoeia.

The time that elapses from the meeting of the convention until the new Pharmacopoeia appears should be materially lessened, as five years is entirely too long a time for this purpose.

#### THE RELATIONS BETWEEN THE MEDICAL AND PHARMACEUTIC PROFESSIONS

Another factor is the relations that should and do exist between the medical and pharmaceutic professions. The more cordial the relations between the two professions, the more quickly will the proprietary medicine evil be eradicated. The interests of scientific pharmacy can be promoted by joint meetings between the branches of the American Pharmaceutical Association and local medical societies, a plan efficiently carried out at present in cities like New York, Philadelphia and Chicago. Such joint meetings should be encouraged, as I know of no better way to acquaint the physicians who are now in active practice with the knowledge of these preparations than to discuss them in common with their neighboring pharmacists. Another valuable plan is the one that has been in vogue in Philadelphia for the past two years, according to which the Philadelphia Association of Retail Druggists mails at various intervals to the physicians of the city small booklets of uniform size, suitable for preservation and binding, containing the names of official preparations arranged in systematic classes. The following was inserted in the cover-page of the first issue and shows the object for which they were sent out:

The foregoing formulas are confidently recommended to the medical profession in the belief that these preparations will meet the needs of the physician, without resort to the use of proprietary medicines.

The following subjects show the character of the booklets, as each contains the most valuable preparations as found in the U. S. Pharmacopoeia and National Formulary under the respective classes:

Non-toxic antiseptics, animal digestants and their preparations, including those used as vehicles and adjuvants, seasonable preparations for ethical prescribing, popular new preparations of the U. S. Pharmacopoeia and National Formulary, intestinal astringents and antiseptics, ethical tonics and alteratives, important vehicles, adjuvants and flavoring agents, the important stomachics, some important U. S. P. and N. F. preparations, diuretics and diaphoretics, the expectorants.

This is the complete list up to the present time. Another important and valuable book in this connection is the "Physician's Manual of the Pharmacopoeia and National Formulary," which is an epitome of all the articles contained in the latest editions of these two works, systematically and conveniently classified. This book should be in the hands of every practicing physician in the United States. It is published by the American Medical Association and sells for 50 cents a copy. Other valuable books in this connection which are published by the American Medical Association are: "The Pharmacopoeia and the Physician," "The Great American

Fraud," "The Propaganda for Reform in Proprietary Medicines" and "New and Nonofficial Remedies."

#### PHYSICIANS OFTEN IGNORANT OF THE PHARMACOPEIA AND NATIONAL FORMULARY PREPARATIONS

Many physicians are not acquainted with the contents, objects and meaning of the U. S. Pharmacopoeia and National Formulary; hence they are too often controlled by motives of convenience in their selection of remedies. Many physicians have the idea that the best drugs and preparations are to be found outside the Pharmacopoeia, and their prescriptions prove this fact.

The medical schools hold the key to the situation, as far as the future practitioners are concerned, as all students of medicine should be required to possess an intimate knowledge of the U. S. Pharmacopoeia and National Formulary as an essential requirement for graduation.

A more thorough course of pharmacologic instruction should be given in our medical schools. This subject was emphasized in a paper<sup>1</sup> which I read before this Section two years ago, in which the small amount of time allotted to this subject in all the various medical schools was demonstrated by a careful examination of their respective catalogues.

#### THE PHARMACOPEIA AS A MEDICAL AND LEGAL STANDARD

The usefulness of the Pharmacopoeia and National Formulary to the medical profession depends on the degree in which they fairly reflect the best tendency of modern prescribing. Their defects in this respect are referable to faults in the organization of the methods of revision—to secrecy, to infrequent revision, to want of responsibility and to a non-representative method of selecting substances for admission. Their cure depends largely on the active interest of the medical profession.

The U. S. Pharmacopoeia has for a number of years been recognized as the representative of the best pharmacopoeias in the world; its standards have been worked out most carefully by men of the highest character; its adoption as a standard by the federal law and the many state laws now in existence is but natural sequence. The Food and Drugs Act, which has proved of great value to the whole country, has furnished all that was necessary in order that the Pharmacopoeia might be recognized as a legal standard. Before the Pharmacopoeia was recognized as a legal standard many manufacturers were indifferent, believing that the standards employed for the purity of the various drugs and chemicals used in their products were variable, and each competitor adopted standards which were convenient to himself. Therefore they often employed drugs of inferior value, and the medical profession had no protection against them, as there was no legal standard on which to base a case for action against them. Soon after the law was passed, however, it was believed by almost all the various interests involved that many of the standards were too rigid.

The passage of the Food and Drugs Act assisted greatly in securing a definite standard for both drugs and foodstuffs, and the persistent endeavor of the proprietary medicine interests, on the one hand, and the manufacturers of foodstuffs, on the other, to obtain permission for the use of certain adulterants, preservatives or admixtures in their products furnishes the best evidence of the importance and necessity of such a law.

1. Thrush, M. C.: A Plea for a More Thorough Course in Practical Pharmacy and Prescription Dispensing in Our Medical Schools, *THE JOURNAL A. M. A.*, Jan. 25, 1908, 1, 254.

## THE SUFFICIENCY OF THE OFFICIAL DRUGS AND PREPARATIONS IN THE MEDICINAL TREATMENT OF DISEASE

And now, returning to the original question of the title of this paper, every conscientious and scientific physician cannot help but answer that we do possess in the drugs and preparations that are recognized by the U. S. Pharmacopeia and National Formulary a sufficient armamentarium for the medicinal treatment of disease. When we consider that the Pharmacopeia contains 958 drugs or preparations and the National Formulary 437, making a total of 1,395 drugs or combinations of drugs, surely this should be sufficient for any one who desires to treat disease. If a physician cannot relieve a given case with one of these, he could not do so if he had a million to select from. There are few physicians who make use of even one-half of the above list in their routine practice, and the majority do not use one-fourth of this number, a fact to which I know every one will agree. Then why should we desire any larger assortment or why should we order proprietary or nostrum preparations in preference? While scientifically treating disease, the amelioration of objectionable symptoms must not be forgotten; i. e., the patient must not be forgotten. Drugs or preparations should be ordered, the exact composition and physiologic action of which are known. Nature must not be left unassisted in her endeavor to overcome disease, and we should be broad-minded enough to employ any means or agents that may be indicated in a given case, without consideration of any "pathy" or school; in other words, we should not be allopaths, therapeutic nihilopaths or any other "paths," but practitioners of scientific medicine.

The Pharmacopeia and National Formulary should be pruned of the useless drugs and prehistoric mixtures which they contain, and they should not be stocked at each revision with rather exact "imitation" formulas of all the various proprietaries which have become popular since the previous revision. This is a rather poor way to combat proprietary medicine evils and stock formula prescribing, is it not?

There should be frequent analyses made by the various state boards of health of the drugs found in the open market to see that they are up to the pharmacopeial standard.

The U. S. Pharmacopeia and National Formulary furnish all of the tonics, digestants, emulsions, antipyretics, hypnotics, nerve sedatives, cough mixtures and external applications that are needed in the medicinal treatment of disease.

## HOW MUCH IS THE MEDICAL PROFESSION RESPONSIBLE FOR THE PREVAILING USE OF NOSTRUMS?

Much deception, prompted by commercialism, is practiced on an unsuspecting profession in introducing new remedies; and various pet schemes, including the giving of stock, commissions, souvenirs, building lots, blotters, literature, etc., are resorted to in order to induce physicians to use such remedies. Often lack of training and discrimination causes physicians to prescribe such remedies, and on solicitation to recommend them to others. Accompanying literature to catch the eye of the laity converts these prescribed semisecret pharmaceuticals into remedies which may be prescribed by the patient. Druggists often aid the laity in the habit of prescribing for themselves; medical journals which admit unethical semisecret remedies into their advertising pages likewise foster this practice. Often physicians thoughtlessly or through laziness or ignorance prescribe secret remedies,

thus increasing and maintaining this evil. The remedy lies in educating the profession in the manner that has been suggested before in this article. Hence I feel confident that I voice the sentiments of every conscientious scientific physician when I say that we possess in the drugs and preparations that are recognized by the U. S. Pharmacopeia and National Formulary a sufficient armamentarium for the medicinal treatment of disease, and for the following reasons:

1. All the various proprietaries and secret nostrums as found on the market are merely mixtures or compounds of drugs and preparations as found in the U. S. Pharmacopeia and National Formulary, and they could be easily compounded by any educated pharmacist.

2. These proprietary preparations are manufactured and sold, not for the benefit of either suffering humanity or the doctor, but for the money that can be made out of them for the manufacturer by fleecing the people who are compelled to pay more for this medicine when made under their special proprietary name than it would cost if dispensed by a reputable pharmacist, and with a legitimate profit.

3. Physicians can prescribe these semisecret proprietaries or nostrums only because of inability to prescribe or formulate a proper prescription through lack of knowledge or for pecuniary returns through financial interest in the company that manufactures the medicine.

4. It is a rare exception when it is necessary to resort to a drug or preparation that is not found in the U. S. Pharmacopeia or National Formulary, as all the best drugs are found in these two books in some form or other. It is ethical and proper to use a certain preparation of such drugs as are official, even if the preparation itself is not official.

5. The valuable drugs that are not official, with but very few exceptions, are found in the list of New and Nonofficial Remedies as passed on by the Council on Pharmacy and Chemistry.

6. It is perfectly proper and legitimate to specify a certain firm's make of an official drug or preparation if the physician so desires, as we may have more confidence in the products of certain firms. There is no question that some manufacturers send out much more reliable and active preparations than others. We should use drugs and preparations from reliable sources only, and the price should be a matter of secondary consideration.

Hence, in conclusion, it is rarely necessary for a physician to prescribe a drug or preparation that is not recognized in some form or other either in the U. S. Pharmacopeia or National Formulary; and in the few instances in which such a drug or preparation should be the one prescribed it would be more rarely when it would not be found in the list of New and Nonofficial Remedies as approved by the Council, provided it possesses any medicinal virtues to warrant its use. For all practical purposes, therefore, we can safely limit our prescribing to drugs and preparations recognized by the U. S. Pharmacopeia, National Formulary or Council on Pharmacy and Chemistry of the American Medical Association.

3705 Spring Garden Street.

## ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. FUSSELL AND THURSH AND ON THE REPORT OF THE COMMITTEE ON THE U. S. PHARMACOPEIA

PROF. JOSEPH P. REMINGTON, Philadelphia, Pa.: If we could have had such an active interest in the Pharmacopeia ten years ago, or twenty years ago, on the part of the medical profession as that shown in this meeting, I am sure that a

great many of the criticisms which have been made on the Pharmacopeia would not have been necessary and therefore I am confident that the Committee on Revision of the United States Pharmacopeia will welcome this active interest on the part of the medical profession. Now the points which were made by Dr. Fussell have been made a number of times before. The one which seems to cause the greatest criticism among the medical profession is that of the nomenclature. Our versatile secretary touched off the question of nomenclature very well this morning, I think, as it affects the medical profession, and I can only repeat that I think the medical profession find a great deal more difficulty in the chemical names than they do in their own. So I don't think they are quite consistent in hammering the Pharmacopeia for its chemical nomenclature. The physicians do not use the nomenclature in their prescriptions. In prescriptions the names of preparations are always abbreviated; even the simple word "tincture" is always "tinct." or "tr.," the entire word "pilula" is never given in prescriptions. I see no reason why physicians cannot abbreviate these long chemical names with equal facility. They particularly mentioned hexamethylen tetramin. There is no reason why the physicians should not abbreviate this word, and write "Hex"; every druggist would understand this. I believe the only exception is in Berks and Lehigh counties, Pennsylvania, where they use the word "hex" in another sense. I think we can all agree that our U. S. P. nomenclature is really not a very serious question. The question of enlarging the scope of the Pharmacopeia by the addition of medical properties comes up at every revision. Certainly there can be no objection if this information can be compressed into sufficient space so as not to make the book too large. If anyone familiar with the subject were to study carefully the pharmacopeias of the world I think that it would be found that nearly all the large pharmacopeias and all the important pharmacopeias of the great countries of the world are books of standards. The U. S. Pharmacopeia is a book of legal standards, especially since it has been adopted by the Food and Drugs Act. It is not intended to express the individual opinions of certain authors as to doses and choice of certain medicines. If it did go into this work to any extent a great outcry would come from all over the country, and there would be far more objection than in keeping it as it is now, a book of standards. I do not suppose that many of us realize the great work that Professor Hallberg is doing as chairman of the Committee on Statistics. It is no small job to compile the statistics for a million prescriptions all over the United States, or even 100,000 or 125,000 and in the short résumé which he gave this morning of the work that has been done I feel very much like telling Professor Hallberg to go ahead and give us by next May, from the large number of prescriptions, an idea of what the country is using, by what the physicians are using. I think that this will be of the utmost value to the next Committee on Revision.

DR. M. G. MOTTER, Washington, D. C.: There is a report of a committee before this Section and some specific action must be taken on it. In view of the fact that the report of the Committee on Pharmacopeia embodies certain resolutions and that they involve a possible expenditure of funds of the American Medical Association, I suggest that these recommendations be forwarded in due course to the Board of Trustees. [Carried.] I am perfectly willing to admit that the medical profession is inconsistent in regard to nomenclature, but the Pharmacopeias are not altogether consistent in this particular. A few weeks ago, while looking through a volume of "The Chemist and Druggist," of London, I came across an article on pharmacopeial nomenclature in which the author, Rudolf, cites the names of several of the quinin salts masquerading in different pharmacopeias and trade journals. He gives the title Quininae hydrochloridum as being in the British Pharmacopeia published in 1898; chlorhydras quinius in the Codex Medicamentarius or French pharmacopeia for 1884. Then he gives the title from four trade lists: Quininae hydrochloras (Howard), Chininum hydrochloricum (Boehringer), Quininae hydrochlorid (Whiffen), and Burgoyne caps the climax with Quininae hydrochlor. It struck me as this question would probably come up here, it might be interesting to run over the pharmacopeial names, and I have arranged them as follows:

U. S. Pharmacopeia, ed. 8 (1890): Quininae hydrochloras.  
German Pharmacopeia, ed. 4 (1900): Chininum hydrochloricum.  
Spanish Pharmacopeia, ed. 7 (1905): Chlorurum quinicum.  
U. S. Pharmacopeia, ed. 8 (1905): Quininae hydrochloridum.  
Dutch Pharmacopeia, ed. 4 (1905): Hydrochloras Chinini.  
Belgium Pharmacopeia, ed. 3 (1906): Chininum Hydrochloricum, Chlorhydras quiniæ.  
Austrian Pharmacopeia, ed. 8 (1906): Chininum hydrochloricum.  
Japanese Pharmacopeia, ed. 3 (1906): Chininum hydrochloricum.  
Swiss Pharmacopeia (1907): Chininum hydrochloricum.  
French Codex (1908): Chininum monochlorhydrum.  
Swedish Pharmacopeia (1908): Chloretum chininicum.

Six out of thirteen pharmacopeias give it Chininum hydrochloricum, while the U. S. P. changed from Quininae hydrochloras, in 1890, to Quininae hydrochloridum, in 1905.

DR. H. C. WOOD, JR., Philadelphia: When I was a resident in the University Hospital I remember we had a case of chronic sulphonal poisoning brought in. My chief, who has now passed to the better world, a man whose name is familiar to you all, a man of great intellectual powers, said to me—like most of these patients with sulphonal poisoning, the woman was suffering from insomnia—"I think for her insomnia we will give a little trional." I said, "Don't you think it is rather contraindicated on account of the similarity of the chemical constitution?" He didn't know anything about the mere substitution of the ethyl for the methyl radical. The trional was given. Now that woman died. Whether it was the continuation of the poisonous sulphone through the ignorance of the physician, or whether she would have died because she was already too full of poison, I cannot say, but at any rate he continued pouring into the woman through his ignorance that poison which killed her. My contention is that those names which approximate chemical accuracy suggest to the physician pharmacologic relations. There is another instance in the great popularity of the proprietary veronal. Most physicians associate it pharmacologically with sulphonal because the name sounds so similar, whereas as a matter of fact we have the ethyl carbonate closely related chemically and equally efficacious for about one-fourth the price.

I think that the practice of specifying drugs of certain firms is not only unnecessary but undesirable. If tincture of belladonna is sold as tincture of belladonna it must contain 1/30 per cent. of alkaloid. If it contains more than the Pharmacopeia percentage it is poisonous; if it contains less the man who sells it is liable to prosecution under the national and state laws. All tinctures of belladonna which are sold in the United States contain the same amount of active ingredient, and there can be no reason for preferring one make to another.

Dr. Fussell used a term which is very common in these discussions; he spoke of the Pharmacopeia "recommending" certain drugs, as the compound acetanilid powder. As a matter of fact, the Pharmacopeia recommends nothing. The Pharmacopeia has been made a fetish and we have been taught that we should prescribe only the things taught in the Pharmacopeia, and if the Pharmacopeia names a drug that is a good reason why we should prescribe it. This is an absolutely erroneous conception of the book. The Pharmacopeia is simply a standard whereby if the physician wishes to use a drug he can know just what his patient is getting. I maintain that if the physician wishes to use a drug, whether the rest of the profession regard it as inert or not, he ought to be at least assured that he is getting what he thought he ordered. I believe that every drug used in medicine, whether of value or not, should be in the Pharmacopeia. Of course, this would make a book so big that we would have to build a special library to hold it. At one of the recent meetings of the Philadelphia County Medical Society Dr. Solis-Cohen suggested that an edition of the Pharmacopeia, once published, should always be a standard until it had been revoked; that when the ninth edition of the United States Pharmacopeia is published, the preface should state: "All substances in the eighth pharmacopeia whose standard is not changed in the ninth shall be considered of the strength and purity which is laid down in the last edition of the Pharmacopeia."

J. W. ENGLAND, Philadelphia: I think it would be entirely practicable for the Committee on Revision to frame contractions of the full chemical names of such compounds that would be as indicative of composition as the full names. Thus, hexamin could be used for the official hexamethylenamin, sulpho-

methane for sulphonmethane or sulphonol, sulphoethane for sulphonethylmethane or trional, and acetphenetin for acetphenetidin or phenacetin. In other words, instead of using the full chemical names, employ contractions, and in a short time the medical profession would come to know what they stood for and use them.

DR. HENRY BEATES, Philadelphia: Many of the points have been well taken, but the discussions are dealing largely with effects and ignore causes. The very question of the necessity for the existence of the National Formulary is raised by its containing elixirs that apparently are imitations of certain valuable proprietaries. Proprietaries of intrinsic value must not be swept away in the effort at annihilation of proprietaries that are worthless, and to be in the position of imitating meritorious proprietaries is not a desirable or wise one.

As to nomenclature, yesterday we heard from one of the papers that phenolphthalein is known under some twenty different names, because of proprietary business, in its bad sense. If these things are to be corrected, the question underlying the practice of the prevalence of such evil must receive serious consideration. I believe that the lax patent and copyright laws of this country supply a great opportunity for this undesirable sort of commercialism to thrive. There is nothing in which the possible usefulness of this Section promises so much good as attention to and correction of these lax laws. Both patent and copyright laws are abused here and abroad, and manufacturers are supplied with exceptional opportunity to indulge in unprincipled commercialism, by which the medical profession is forced to play the cat's paw.

The Pharmacopeia, because of expiration of patent, has in it to-day (under its official name of "acetphenetidin") phenacetin, a useful and valuable medicament, of which the manufacturers formerly controlled the cost, thus robbing afflicted humanity of a valuable remedy except at extortionate prices.

The entire Galenic materia medica is seriously affected by the conspicuous absence of official preparations made according to physiologic standardization. Thus the absence of official standardization, not of a certain percentage, but of a uniform degree of strength, invalidates the entire materia medica. Professor Wood just referred to belladonna. I may be a very poorly informed practitioner of medicine, but I did not know until then that the tincture of belladonna could be regarded as a standardized Galenic preparation, representing 10 per cent. of something, and that any pharmacist who gives more or less than that standard is subject to prosecution.

As to naming manufacturers because of tested reliability in certain remedies, this has its advantages and disadvantages, but certain it is that in our present chaotic condition, those physicians who practice medicine for the best interests of their patients must specify the product of some well-known and tested manufacturer. It is to be hoped that the influence of this Section will focus itself at least on the careful study of the all-important matter of patent and copyright law, so that by 1910, when the Committee on Revision of the United States Pharmacopeia will meet, something will have been achieved by which we can have a common standard of physiologic or therapeutic value, to which we can conform in standardizing Galenic preparations.

PROF. CHARLES CASPARI, JR., Baltimore, Md.: As chairman of the subcommittee on nomenclature it has been my privilege for many years to assist in the revision of the Pharmacopeia. The aim of the subcommittee on nomenclature was to place in the Pharmacopeia names that were truly indicative of the character of the product selling under that particular name, making it as simple as possible and yet not in the least destroying its identity. For that reason acetphenetidin and similar names were introduced where it was not possible to use another name, unless the trade-mark name would be adopted. A great deal has been said this morning in regard to either insufficient or objectionable nomenclature of the Pharmacopeia, and yet I think physicians as well as pharmacists will recognize, if they pay attention to the subject, that the names are as simple as it is possible to make them without encroaching on the field of trade-markism, as we might call it. While phenacetin was still a proprietary product, protected by the laws of this country, it was impossible to introduce that name into

the Pharmacopeia for the reason that phenacetin was selling at an exorbitant price, much above its real value. The object was to place in the hands of physicians an article of identical composition and merit with phenacetin but at a very much lower price by using the term "acetphenetidin"; the former was selling at 85 cents an ounce, whereas the latter could be had for \$3 a pound. Of course, the expiration of the patent on phenacetin has helped the matter largely. I want to assure all physicians in this country that the only object of the Committee on Revision has been to place in their hands names as simple as the particular case would justify and yet truly characteristic of the chemical character of the drug. Objection has also been made by one of the speakers this morning to introducing the elixir of iron, strychnin, and quinin. Perhaps never has a preparation been more largely prescribed than this one by the medical profession. Prior to introduction in the Pharmacopeia probably fifty preparations were offered by various manufacturing houses, no two alike, and often differing greatly in strychnin or quinin content. It was thought desirable to have a preparation so largely used by physicians uniform in composition the country over and have its name indicative of the composition. We have now a solution of true phosphates in such form in the official preparation. There is no denying the fact that the preparation is used in immense quantities; barrels of it are made by manufacturers. While a few physicians still cling to the product of some particular manufacturer, I believe the evil has been abated which required the druggist to carry ten or fifteen brands of the one product, with attendant change, gelatinization, etc., all of which brought pocket-book loss to him and great discredit to the manufacturers and also to the physicians. The fact that the medical schools, unfortunately, do not pay the attention they should to teaching the students of medicine the character and contents of the Pharmacopeia is, I think, recognized. One of the disadvantages under which the medical student finds himself to-day when he leaves the university and starts out in medicine is that he has very little knowledge of the Pharmacopeia and its character, but he is quite familiar in many instances with books which treat largely of prescription-writing and ready-made prescriptions.

DR. JOHN J. TAYLOR, Philadelphia: I feel that I am under the necessity of sounding a somewhat discordant note. I want to say that, in the work of this Section we are not always working along the right tracks. We are not doing what we should to lay the foundation. The place where our preliminary work should be done is before the Council on Medical Education. We want to encourage there a more thorough training of medical students in materia medica and therapeutics. The last speaker has very justly said that, when a medical student passes out of the school, he practically has to learn his materia medica. Students have a little theory given to them, but we have very little training in prescription-writing, whether it be for a single remedy or for a suitable combination of remedies, or in putting up prescriptions. I have observed that those students who have passed a preliminary course in practical pharmacy before taking their medical course have understood the teaching in therapeutics much better than those who have not had such instruction. As physicians we have to deal with real things and we ought to know these things themselves and their peculiar characteristics, so it is not teaching we want so much as training, and that means more than we get in our medical colleges to-day or ever have done. We also need training of the pharmacists. When the physician has prescribed a National Formulary preparation for something which he has heretofore had as a proprietary and gets a muddy conglomeration at a high price instead of a well-made mixture at the proprietary's price, he becomes discouraged and justly so. The National Formulary, as it has developed later, seems to be a list of substitutes for things the physician is already using. I think any substitute for what the physician is using should be eliminated.

DR. L. F. KEBLER, Washington, D. C.: One point made by Dr. Fussell, namely, that certain products should be eliminated from the Pharmacopeia because of their little use appeals to me from one point of view but not from another. When we remember that there are promoters of medicines who take



advantage of every possible situation that presents itself we should be very circumspect about giving any questionable drug standing. For example, *phytolacca*, referred to by Dr. Fussell, is one of the common constituents of a large number of anti-fat remedies, and I also recall its presence in a so-called magic foot-draft remedy. When these people are given hearings and the worthlessness of the drug pointed out, for the purpose advertised, what do they say? "That is recognized in the Pharmacopeia. It is approved by the medical and pharmaceutical profession." While I knew that caffeine was used to a large extent in various combinations I did not think the medical profession was increasing its use. Dr. Hallberg's statement that the use of opium by physicians is apparently decreasing is very gratifying. While the use of opium has not been increasing during the past ten years, judging from the imports, there is still a large amount of opium used improperly, and, moreover, other habit-forming drugs are replacing opium and morphin.

MR. M. I. WILBERT, Washington, D. C.: Where one is absolutely handicapped and has no other recourse for a reasonable standard than the name of the manufacturer, specifying that name may be justified, but where one has a reasonably just standard that can be enforced by law, there is no justification for it. We have at our command the machinery to maintain a standard and every one who is interested in the preparation or use of medicine should be interested in getting that machinery in order and putting the established standards into force. The functions of the retail druggist or of the pharmacist are the preparation, verification, preservation and the dispensing of medicine. For many years he has confined himself largely to the dispensing of medicine and he appears to think that his only function is to dispense medicine on physicians' prescriptions, and the physician, in accepting this limitation, is prescribing preparations of this man's manufacture and that man's manufacture in the mistaken belief that his patient is getting the very best that is to be had. Yesterday morning Dr. Wood showed us that fluid extract of ergot is not fluid extract (Smith) because it comes out of a fluid extract of ergot (Smith) bottle. He showed us that this preparation can be ruined in a few hours and certainly deteriorates in a week or a month, so that if you prescribe any given manufacturer's ergot you are not getting what you think you are getting, but what the pharmacist happens to have in the bottle. Those of you who have seen the Hygienic Laboratory Bulletin on the "Standardization of Digitalis" will appreciate the need of going further than specifying some particular manufacturer's name. You physicians must develop pharmacists in the country, you must develop them to do more than dispense, they must verify and must know how to preserve their medicines. Unless they know how to preserve their medicines and to verify them from time to time you are not getting what you think you are getting because you happen to specify some manufacturer's make. The need for this is becoming more and more apparent and the justice of it is also apparent. The retail druggist is responsible for the things that he is dispensing under existing laws; so that as soon as he removes a cork from the bottle he is responsible for the contents of that bottle, and if he is not capable of verifying it you have recourse under law to compel him to discontinue the business or to improve himself. The medical profession should compel the retail druggists of this country to qualify in such a way that they can verify their medicines and assure physicians they are getting what they are prescribing, and if they confine themselves to the established standards they will get what they expect to get.

PROF. H. P. HYNSON, Baltimore, Md.: The statistics Professor Hallberg is collecting really show very plainly that therapeutic nihilism has not increased; there is still something for the pharmacist to do. Should statistics control the contents of the Pharmacopeia? We have reached that stage in pharmacology where we should seek something higher than that. Its mere local or national popularity does not seem enough to determine whether or not a substance shall be introduced into the Pharmacopeia. It seems to me that it ought to have real pharmacodynamic value. I do not say therapeutic value, because I do not believe therapists have reached a point where they have established standards. When an article's

place in the Pharmacopeia is dependent on its actual pharmacologic action, which has been established or on its adjuvant use or action, then we shall have established a Pharmacopeia which will be a credit to science and to the age.

MR. F. M. APPLE, Philadelphia: From observations in my store I would attribute the increase in the use of caffeine to the commendable custom of the physicians of formulating their own prescriptions in preference to using one of the compound acetanilid mixtures. My experience proves that the caffeine is almost invariably prescribed with acetanilid or some other depressing drug; hence the question arises, can the medical men be justly condemned for the increased use of caffeine?

DR. C. S. N. HALLBERG, Chicago, Ill.: With reference to the mixtures, there is one point as disclosed by elixir of quinin, iron and strychnin which is that a preparation of that kind cannot be successfully made extemporaneously. If physicians prescribe mixtures of that kind they must be made in advance in order to compare with those made by manufacturers, and therefore the recognition of the formulas in the Pharmacopeia and that applies to a great many preparations of a similar character. Besides, the time does not admit of the expenditure of any particular skill or experience in the preparation of many of these mixtures in ordinary prescription quantities when a larger quantity can be made just as well. The criticism of Dr. Taylor in reference to the National Formulary has been largely exploded. It is not true that the National Formulary has substitutes for proprietaries or that it is based on them. The National Formulary is the survival of a collection made by the American Pharmaceutical Association as far back as 1868 by J. F. Hancock of Baltimore, Md. (who is present here to-day), and for forty years we have been collecting formulas and manufacturers have taken these formulas which have appeared in the proceedings of the American Pharmaceutical Association, sometimes changed the color and flavor and vastly extended the claims for their virtue. That credit is what they are entitled to and nothing more. There is scarcely a preparation which is due to any originality on the part of any of the present proprietary pharmaceutical manufacturers.

With reference to the pharmacodynamic and adjuvant effect of drugs the difference between the pharmacologic and the psychologic is a wide one, and yet there is a very close relationship as illustrated this morning with reference to the extended use of the elixir of lactopeptin. It is sometimes difficult to draw the line as to whether it is the action on the heart and respiration, or whether it is simply the gustatory effect, or the effect of the optic nerve that is supposed to produce the medicinal effect.

DR. M. CLAYTON THRUSH, Philadelphia: When the time arrives that every pharmaceutical manufacturing house in this country adheres strictly to the Pharmacopeia and every pharmacist is a reputable pharmacist and adheres to this standard, it will not be necessary to specify a certain manufacturer's drug. For example, every physician in this room knows that there are different qualities of drugs on the market, that some druggists dispense more reliable drugs than others, that some pharmaceutical firms send out better products than others. I know as a reputable pharmacist that eight prescriptions out of ten specify Squibb's when chloroform is prescribed. I am sorry that physicians have to do this. But the fact remains that they do it, and we know why they do it, and it is perfectly nonsensical to say that they do not do it. I know that Squibb's ether, chloroform and ergot are specified eight times out of ten. I will give a beautiful illustration of this. I was ready to operate on a patient, the physician proceeded with the anesthetic, but he could not get the patient under the effects of the chloroform with the usual quantity and he had to use two or three times the usual quantity for the second stage of anesthesia. This occurred every time this particular make of chloroform was used. Fortunately, in refilling the bottle used on these occasions, instead of Squibb's I noticed the pharmacist gave me chloroform out of a large pound bottle that had been opened and allowed to stand, although it was from a firm considered one of the best firms in this country. It was labeled "U. S. P. Chloroform, For Anesthesia Purposes Only." That is simply one illustration of an occurrence that every practicing physician meets frequently. I don't think there is any

basis for the study of medicine more valuable than a good classical education, except a thorough knowledge of pharmacy. Every man who wishes to practice medicine should take a course in pharmacy. There is a great field in the future for our colleges of pharmacy. Almost all our colleges of pharmacy, with the exception of a few of our largest, are connected with medical schools, and I do not see why even our largest could not do as Harvard and others which confer a combined degree of A.B. or B.S. with the M.D. for a certain course which curtails a year or more than when taken separately. Why could not we combine pharmacy and medicine, likewise giving a little more time than we have been, just the same as the combined M.D. degree and classical degree? That would turn out all men having a good practical knowledge of pharmacy as well as of medicine. Every physician who has graduated in pharmacy will tell you that it has been the greatest help to him in the practice of medicine.

PROF. H. P. HYNSON, Baltimore, Md.: What possible difference could there have been in these chloroforms mentioned by Dr. Thrush?

DR. M. CLAYTON THRUSH, Philadelphia: The chloroform as sent out by this particular firm was not up to the official standard. We required three times as much on the average to produce anesthesia.

PROF. H. P. HYNSON, Baltimore, Md.: Do you mean it was diluted with alcohol?

DR. M. CLAYTON THRUSH, Philadelphia: I do not know, as no chemical test was made to determine this point.

PROF. CHARLES CASPARI, JR., Baltimore, Md.: In reply to the remarks made about co-education of pharmacists and physicians, I would like to say that this is, I believe, prohibited by the very charter of your Association of Medical Colleges. I have been informed by very good authority that the simultaneous attendance of students in schools of medicine and pharmacy is positively prohibited. If the association will recede from that position and allow the students to attend lectures in pharmacy then the ideal condition will prevail.

DR. REID HUNT, Washington, D. C.: There has been considerable discussion in the Public Health and Marine-Hospital Service as to what ether should be used; some manufacturers complained that they were discriminated against, since surgeons frequently specified a certain brand and this was supplied. A number of samples of ether from various manufacturers were bought on the open market and examined. All met the requirements of the U. S. P. There were absolutely no difference between them. Either the physicians were mistaken in believing one to be superior or the tests of the United States Pharmacopeia do not suffice fully to determine the value of the ether. As regards chloroform, it is a question whether the percentage of ethyl chlorid may not be important; if it is, the present requirements in the Pharmacopeia are insufficient.

DR. BERNARD FANTUS, Chicago, Ill.: How many patients of Dr. Thrush showed this peculiarity in reference to requiring three times the usual amount to induce anesthesia? My experience shows that some patients, especially alcoholics, will be refractory to anesthetics.

DR. M. CLAYTON THRUSH, Philadelphia, Pa.: It was tried in fifteen cases. In every case this chloroform showed the same result.

**Nutmeg Poisoning.**—At the meeting of the Royal Society of South Africa, Oct. 20, 1909, Dr. M. Wilson called attention to the small number of cases recorded of poisoning by nutmeg, which he thought worthy of special remark since the condiment is so widely used. The explanation offered was that the activity of the poison was due to partial germination of the seed, which was rarely the case in the commercial article. In support of this he directed attention to what he considered an analogous case, that of a fir seed (*Dana pitje*) which was largely eaten by children near Cape Town without any bad results, but after partial germination had caused serious consequences. The nutmeg is generally supposed to be a powerful narcotic when taken in large quantities but we have not seen before anywhere this theory of the poison being developed by arrested germination.

## METHODS OF SERUM DIAGNOSIS IN BACILLARY DYSENTERY (INFECTIOUS DIARRHEA) IN INFANTS \*

W. P. LUCAS, M.D.  
BOSTON

J. G. FITZGERALD, M.D.  
TORONTO, CANADA

AND

E. H. SCHORER, M.D.  
LAWRENCE, KAN.

This article deals with a systematic study of certain methods of diagnosis from the blood serum in infants suffering from dysentery (infectious diarrhea). It is assumed from previous work in this field, and is further evidenced by the present study, that this type of summer diarrhea, denominated in the wards of the Boston Floating Hospital "infectious diarrhea," has direct etiologic relation with one or more of the varieties of organisms now grouped under the species name of *Bacillus dysenteriae*. In all the cases of infectious diarrhea considered, and in the control cases as well, a thorough search has been made in the stools for the dysentery bacillus. It was not deemed advisable, in so far as the serum tests were concerned, to consider varieties of the bacillus beyond the first generally accepted division of these organisms into mannit fermenters (Flexner type) and mannit non-fermenters (Shiga type); a more detailed consideration of the varieties of dysentery bacilli obtained in relation to the clinical aspects of the individual cases will later be taken up by one of us (Schorer).

### SERUM DIAGNOSIS BY W. P. LUCAS AND J. G. FITZGERALD

Two recognized methods of serum diagnosis, namely, the reaction of agglutination and the reaction of fixation, and one new method, the reaction of conglutination, have been tried, as far as possible, with the blood serum of each case in conjunction with both a mannit-fermenting (Flexner) and a mannit-non-fermenting (Shiga) variety of the dysentery bacillus. In many cases these tests have been repeated at intervals in the course of the disease.

The agglutination reaction has been employed by all investigators who have studied cases of bacillary dysentery attentively since the first publication of Shiga, who used this reaction as a proof of the etiologic relation of his bacillus to the disease. The value of the reaction in diagnosis, owing to its delayed appearance and its relative infrequency in the disease, would not, by common consent, appear to be great (Shiga,<sup>1</sup> Lentz<sup>2</sup>). The percentage of positive reactions has varied considerably in the hands of various observers, owing largely to individual differences in technic as well as to the dilution accepted as indicative of a positive reaction. No observers, as far as we are aware, have used as uniform a method as would seem desirable (see below under "Technic"). And apart from individual variations in method the following factors would seem of importance in determining the value of the agglutination reaction in dysentery:

\*From the Laboratories of Serum Diagnosis, Harvard Medical School and of the Boston Floating Hospital.

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1. Shiga: Bacillary Dysentery, Osler's Modern Medicine, II, 781.

2. Lentz: Dysenterie; Kolle and Wassermann's Handbuch der Pathogenen Mikroorganismen, 1909, II Ergänzungsband, 391.