supply the evidence that the task of compiling and revising a book which serves in the several fields of medicine as a standard and formulary for such diversified preparations and compounds, is one which can only be accomplished through the hearty coöperation and combined efforts of all those concerned, governed and regulated by the Pharmacopoeia.

BROOKLYN, N. Y.

A SMALLER UNITED STATES PHARMACOPOEIA.

BY A. RICHARD BLISS, JR.

It is undoubtedly the opinion of the medical profession of to-day that the United States Pharmacopoeia is too large for practical use on the part of the physician, and that a properly applied, intelligent, eliminative process of sufficient scope, having for its object the exclusion of those portions that are generally looked upon as worthless or superfluous in the *practice of medicine*, would result in a *Tenth Revision* that would be more practical, of decidedly smaller bulk, and more generally consulted and actually *used* by the medical practitioner. The continued inclusion and admission of drugs and preparations, rather uniformly looked upon by *medical authorities* as useless or of questionable value, because of the "argument" that *some* physicians use them and that therefore they should be officially defined and recognized, has resulted in bringing about a condition in previous revisions that caused them to resemble rather a manufacturer's catalogue of specifications for numerous drugs, chemicals and preparations, than a book supposedly especially intended for *actual use* by the physician. The general impression concerning the original object of the United States Pharmacopoeia (and a correct impression) is that the book is intended to contain certain necessary data concerning *selected* drugs whose value in *Medicine* has been proved by results derived from extensive general experiences in their intelligent use and by scientific experimentation. Previous revisions have been getting farther and farther away from this object, and what might be called the commercial or manufacturing element has been more and more stressed until to-day, because of this change in the original United States Pharmacopoeial scope, a large number of the members of the medical profession look upon the work as something intended for the exclusive use of the pharmacist and the drug manufacturer. Another immediate result of this apparent state of United States Pharmacopoeial affairs is the tremendous growth and success of the proprietary and the patent medicine industries with their attending evils.

If the eliminative plan, adopted and applied by the Council on Pharmacy and Chemistry of the American Medical Association in the preparation of that valuable booklet entitled "Useful Drugs," were used in the preparation of the coming revision of the United States Pharmacopoeia, the Tenth Revision would doubtless prove as practical, as useful, as widely distributed, as frequently consulted, and as popular among physicians as "Useful Drugs." In fact there would be no need for a publication like "Useful Drugs!"

The writer, as a member of the United States Pharmacopoeia Revision Coöperative Committee of the A. O. A. C., in reviewing the "page proofs" of the proposed

text of the United States Pharmacopoeia X, has been impressed with the fact that some excellent eliminative work has already been carried out by the United States Pharmacopoeia Revision Committee, but believes that there are further opportunities for constructive elimination. No attempt will be made here to discuss all of the possible opportunities for the elimination of drugs that have presented themselves. Instead, one or two points that have possibly not been discussed in the recent literature concerned with the numerous phases of United States Pharmacopoeia revisions will be briefly mentioned.

Next to Preventive Medicine in the order of importance to-day most would undoubtedly place Specific Medicine. Modern chemical and pharmacological methods aim at the separation, the isolation, and the purification of Pure Principles or Active Principles, the exhaustive study of the properties of these principles, the perfect synthesizing of them, and finally possible improvements in such principles. This point is well illustrated by the history of cocaine with the final preparation of such products as beta-eucaine, novocaine, etc., compounds that are superior to cocaine for a number of reasons, the most important being that they are less toxic. The manufacture of ethylmorphine, the isolation and purification of the active principles of chaulmoogra oil, the isolation and manufacture of theobromine, arsphenamine ("salvarsan"), etc., are further illustrations of results of successful work in Specific Medicine. The successful work of Abel with epinephrine and that of Kendall with thyroxin, and the attempts that are being made to isolate the pure, active principles of such "biological products" as sera, vaccines, etc., illustrate similar work in a different field of Specific Medicine. Older than most of the above, however, are the isolations of such pure, active principles as strychnine from nux vomica, quinine from cinchona, morphine from opium, and numerous other principles from crude drugs. In the old days a physician was forced to prescribe a preparation of nux vomica, which contains at least three different alkaloids, when he wanted a strychnine action, opium (containing at least twenty-one alkaloids) or its preparations when he wanted a morphine action, etc., etc. To-day the tremendous advantages of accuracy in dosage, in place of the old approximate dose or guess, and rapid or almost instantaneous effects produced by the hypodermatic administration of pure, active principles are outstanding among other related advantages such as purity, strength, concentration, small bulk, size of dose, etc. Are these evident advantages of pure, active principles being applied as much as they might be in the work of elimination with pharmacopoeial revisions? Would not their application result in assisting in bringing about a smaller Pharmacopoeia? Why not continue the good work done when coca and its preparations were eliminated and cocaine and cocaine hydrochloride alone retained? Application is made below with several well-known official vegetable drugs.

Aloes.—Authorities advise that aloin is the best substance to use when an aloes action is desired. If this is true, why keep aloes in the Pharmacopoeia?

Belladonna Leaves and Root.—Practically every writer makes the statement that the action of belladonna and its preparations is that of atropine. Therefore why continue these crude drugs when there is no necessity for the use of the crude drugs or the galenical preparations as long as atropine can be so readily obtained in the pure state? Some may say that the plaster and the ointment of belladonna are advised and used by some authorities. Careful investigation of medical literature

will disclose the fact, however, that modern thought casts severe doubt on the value of local applications of these two preparations.

Red Cinchona.—Why continue this drug or even cinchona ("Yellow") when we have quinine, quinidine, cinchonine, cinchonidine, etc.? Shall we continue the red variety simply because of the fact that for some unknown reason the red variety is specified as an ingredient of Compound Tincture of Cinchona? Do either of the cinchonas possess any advantages over their pure active principles? Cinchona contains at least 20 alkaloids.

Cubeb and Aspidium.—The oleoresins are practically the only preparations employed to-day, so why retain the unused crude drugs?

Nux Vomica.—This is a drug that contains at least three alkaloids, in addition to numerous other constituents. With strychnine, a readily obtained alkaloid, representing its action, why continue the unnecessary crude drug?

Opium.—Here is another drug in the class with cinchona. It contains at least twenty-one alkaloids—truly a "shot-gun" collection! With morphine, codeine and their derivatives available there is no further need for continuing the crude drug.

Physostigma.—This drug is rarely, if ever, used. The continuation of its principal alkaloid, physostigmine, would suffice.

Pilocarpus.—Another drug practically unused as such. Pilocarpine, its principal alkaloid, is sufficient for all medical applications.

Stramonium.—This vegetable drug is not needed as long as atropine is obtainable.

Strophanthus.—Another crude drug whose galenical preparations are unused.

The following table shows what the adoption of this plan, which was used in the last revision of the United States Pharmacopoeia with the crude drug coca (cocaine and cocaine hydrochloride being alone retained), would accomplish with certain crude, vegetable drugs from the standpoint of the elimination of superflous drugs and their preparations.

Drug.	To be retained.	To be eliminated.
Aloes	Aloin	Crude Drug, Pills and Tincture
Aspidium	Oleoresin	Crude Drug
Belladonna	Atropine and Salts, Hyoscyamine and Scopolamine Hydrobromides	Crude Drugs (root and leaves), Fluidextract, Liniment, Extract, Tincture, and Ointment
Cinchona	Quinine and Salts, Cinchonine and Cinchonidine Sulphates	Crude Drugs (Yellow and Red), Fluidextract, Tincture, and Compound Tincture
ubeb	Oleoresin	Crude Drug
Hydrastis	Hydrastine and its Hydrochloride, and Hydrastinine Hydrochloride	Crude Drug, Extract, Fluidextract, Tincture, and Glycerite
Hyoscyamus	(See *Belladonna*)	Crude Drug, Extract, Fluidextract, and Tincture
Nux Vomica	Strychnine and its Salts	Crude Drug, Extract, Fluidextract, and Tincture

Drug.	To be retained.	To be eliminated.
Opium	Morphine, Codeine, and Salts and Derivatives	Crude Drug (also Powdered, Granulated, and Deodorized), Tincture, Camphorated Tincture, Tincture of Deodorized Opium, Powder of Ipecac and Opium
Physostigma	Physostigmine Salicylate	Crude Drug, Extract, and Tincture
Pilocarpus	Pilocarpine Hydrochloride and Nitrate	Crude Drug and Fluidextract
Stramonium	Nothing	Crude Drug, Extract, Tincture, and Ointment
Strophanthus	Strophanthin	Crude Drug and Tincture

Thus forty-nine (49) crude drugs and preparations would be eliminated.

Further applications might be made to the volatile oil drugs like anise, fennel, etc., and possibly to other groups.

Another possibly feasible modification would be the elimination of Part II, which is concerned with atomic weights, chemical formula, reagents and test solutions, tables, etc. (occupying 161 pages), *from volumes or a special edition intended for the use of the practicing physician*, since this would reduce not only the bulk of such issues but also the cost to physicians.

Lastly might be mentioned the unfortunate tendency, displayed in the revisions of the National Formulary, to include most, if not all, of those drugs and preparations discarded or rejected by the United States Pharmacopoeia. If this practice is continued the "N. F." will become the "dumping ground" of the U. S. P. and will lose its prestige and value.

LABORATORIES OF PHARMACOLOGY,
SCHOOL OF MEDICINE,
EMORY UNIVERSITY,
EMORY UNIVERSITY, GEORGIA.

DOSES PROPOSED FOR THE UNITED STATES PHARMACOPOEIA, TENTH REVISION.

The following list represents changes in the U. S. P. IX doses or the doses for newly admitted substances, as proposed for inclusion in the new Pharmacopoeia. All other doses remain as at present official. These are submitted for the information of physicians and pharmacists. Any comments should be sent to E. Fullerton Cook, 636 So. Franklin Square, Philadelphia, Pa.

Acidum Benzoicum, 1 Gm. (15 grains)
Acidum Citricum, Dose Omitted
Acidum Lacticum, Dose Omitted
Acidum Tartaricum, Dose Omitted
Aconitum, 0.06 Gm. (1 grain)
Antimonii et Potassii Tartras, 0.003 Gm. (1/20 grain)
Apomorphinae Hydrochloridum, Expectorant 0.002 (1/30 grain), Emetic, Hypodermic, 0.005 Gm. (1/12 grain)
Asafoetida, 0.2 Gm. (3 grains)
Aspidium, Dose Omitted
Atropina, 0.0006 Gm. (1/100 grain)
Atropinae Sulphas, 0.0006 Gm. (1/100 grain)
Barium Sulphate, No Dose
Benzosulphinidum, Dose Omitted
Bismuthi Betanaphtholas, 1 Gm. (15 grains)
Bismuthi Subcarbonas, 1 Gm. (15 Grains)
Bismuthi Subgallas, 1 Gm. (15 grains)
Bismuthi Subnitras, 1 Gm. (15 grains)
Bismuthi Subsalicylas, 1 Gm. (15 grains)
Calcii Chloridum, 1 Gm (15 grains)