disease has been due to this cause. In twenty-three laparotomies in cases of true typhoid, done for closing the perforation, recoveries were had in four cases. Notwithstanding this low percentage of recoveries, the operation has been advocated for the reason that without it there is a certainty of fatal result, but that some hopes are offered by this procedure. The advice is qualified by a proviso, that laparotomy should not be resorted to when the pulse is strong and not too frequent.

In view of the great mortality from perforation, notwithstanding what has been offered by surgical operation, advance is demanded in one of two directions, or in both, viz.: Either our understanding of the disease, its successful treatment, or means of prevention, must be so advanced and so widely and practically known as not often to allow the existence of the advanced stage of the disease in which this complication is liable to occur; or, if cases of perforation must sometimes necessarily come, the surgeon's early presence and the improved technic of his operative measures must be such as to materially reduce the rate of mortality of the past.

It is true of enteric fever, as of most other diseases, that the greater success in management depends largely on a knowledge of when, where, and how to act. The knowledge of conditions, means, and methods now available should guarantee results not reasonably expected in former times; and the assurance now is that the better time promised is already at hand.

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THE REVISION OF THE PHARMACOPEIA.*

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It is none too early for the medical profession to begin to discuss the revision of the "U. S. Pharmacopeia," which is to take place next year. While the actual appointment of delegates to the pharmacopeial convention rests with medical and pharmacal colleges, state societies and the three Government medical services, the revision should represent the opinion of the profession at large. This opinion can be expressed only by free discussion in print and in various medical meetings.

Within the last few decades a problem has arisen which successive pharmacopeial conventions have managed to ignore, but which must be faced in the near future. Up to 1860 or 1870, almost all drugs were either standard inorganic chemicals or vegetable substances which could be gathered by anyone with a working knowledge of botany, and which could be prepared for dispensing by very simple means. At present we are departing more and more from the older concept of galenicals, and are forced to adopt drugs requiring an elaborate knowledge of organic chemistry and special appliances for manufacture which can be economically employed only on a large scale. While the older animal drugs are few in number, and with one or two exceptions of little importance, animal extracts and antitoxins have recently increased the relative importance of the animal kingdom in pharmacy and a new departure must here be made by the future pharmacopeial revisers.

In regard to the use of galenicals, especially of the

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vegetable drugs, many physicians have passed through the following stages: 1. They have desired to know the effect and dose of any arbitrary preparation, for instance the tincture. 2. They have wished to have a standard preparation, such as fluid extract. 3. They have asked to know not how much of the crude drug was contained in a given amount of the extract, but how much of the active principle. 4. They have argued: "What is the use of employing the crude drug or a galenical at all? Give us the active principle and we will make our own dilutions." Twenty years ago, the triturate was introduced for the sake of having a 10 per cent. dilution of strong drugs. But, in practice, very few physicians have ever thought of the tablet as an official preparation, and they have ordered the amount of the active ingredient, without reference to whether the triturate contained ten times as much weight of sugar of milk or some other multiple. The abstract was dropped from the last edition of the pharmacopeia simply because those who were anxious for a standardized extract preferred the alkaloid itself, and those who did not were content with the old-fashioned extract of no particular strength. In fact, the day of galenical is waning, and we are aiming more and more at the isolation of active principles. There remain, however, several valuable drugs, like cannabis indica, digitalis and ergot, whose active principles have not yet been satisfactorily isolated for practical use. In such instances, and in many others for convenience or out of deference to the long-established habit, galenicals must be maintained.

Rather for the sake of eliciting discussion than to impress a personal opinion, I will briefly outline what seems to us an ideal treatment of galenicals by the Pharmacopeia. I do not intend, however, to convey the impression that I consider so radical a change from present standards feasible, immediately:

1. There should be one—and only one—active liquid and one solid preparation of each drug, adapted for internal use.

2. These preparations should be of definite strength, either with reference to the crude drug or the active principles. As the maintenance of galenicals is justified, rather because of the existence of drugs whose active principles can not be isolated, it would perhaps be wiser to standardize with reference to the assayed crude drug in all instances, as by adopting the fluid extract and abstract for all plants used internally.

3. All preparations for external use, including ointments, plasters, liniments and certain solutions, should be of safe, maximum strength for application.

4. For ointments, there should be duplicate or triplicate preparations, of the same active content but differing in base, so as to allow an organic fat and a mineral salve to be used at will, as well as, perhaps, an absorptive ointment containing wool-fat.

5. The physician should never be compelled to consult a pharmacopeial list to determine whether such and such a preparation of any particular drug be official. Every galenical should be official for every drug to which it is applicable.

6. Unless required by certain physical and chemical properties, there should be no galenicals or definite simple substances, whether inorganic or organic, with the possible exception of ointments. Whenever volatility or deliquescence or dangerous caustic properties require the use of a solution, it should be as concentrated as possible. This would apply to ammonia, hydrochloric acid, formalin, zinc chlorid, etc.

7. A wider range of vehicles should be adopted. Choc-

olate, in particular, should be more extensively used. Syrups and other vehicles should be simply vehicles, of indefinite dosage. Syrups of active drugs should be abolished, palatable combinations being prescribed extemporaneously as required. The confection should be more often employed.

8. Fine distinctions of terminology, such as between aqua and liquor, spiritus and tincture, as well as qualifying adjectives such as ammonia, alcoholicum, etherum, etc., should be dropped. The exact method of preparation of a galenical is of no interest to the prescriber, and details necessary for the guidance of the pharmacist should not be indicated in the nomenclature.

9. The number of galenicals should be greatly reduced. Most vegetable drugs would be represented by a fluid extract and an abstract. Wherever applicable, there would also be official, ointments, a liniment, decoction—including infusion,—solution,—including aqua and liquor,—spiritus—for organic substances requiring alcohol, ether or both as a solvent. The terms collodion, mel, oleum, etc., must be retained, but these are not galenicals in the true sense of the word.

10. The nomenclature should be revised so as to accord with the best chemical and botanic knowledge, except for some of the newer chemicals whose names are of inordinate length. While arsenic should be known as arseni oxidum, not acidum arsenosum; potassa should be called potassii hydras—or hydroxidum. Vegetable drugs are now sometimes official by the specific, sometimes by the generic, sometimes by a word that is neither the common nor the scientific name. The correct, binominal botanic term should be used in all instances.

11. The Pharmacopeia, in dealing with plants, should choose one of two alternatives: either it should officialize only drugs in common use and of marked value, or it should aim to be a complete list of the activities of plants and should officialize every medicinal plant. Since almost all plants are more or less medicinal, at least to the extent of possessing a bitter or an astringent principle, and since the chemistry and pharmacology of very few plants are known, the latter alternative is at present impossible. Nevertheless, certain general directions should be given for testing, preparing and naming all plants, so that, with the knowledge of the physiologic effect and the dose of a crude drug, it could be prescribed in any desired form, without fear of a variation of the product.

12. Dosage should not be dictated by the Pharmacopeia, though it may be included in the description of a drug as a matter of convenience. As a corollary, it follows that no pill should be official except as a pill-mass, the division into doses being left to the discretion of the prescriber.

In turning our attention to the animal kingdom, we find evidence of a still greater problem that confronts the pharmacopeial convention. How shall it deal with the more or less proprietary preparations of all kinds, that have come into growing favor? The problem, though not unknown to former conventions, has not outgrown the stage of purely abstract desirability. It involves the question as to whether the pharmacopeia of the future is to continue to be a fairly complete guide for the physician and the pharmacist, or whether it is to degenerate into a kind of peerage, containing the names of drugs of respectability and good ancestry, but not by any means representing the active personnel of the physician's aids. I do not wish to be understood as advocating the use of proprietary medicines, but I do hold that the function of the Pharmacopeia is to list

the drugs that the profession actually uses, not those which it ought to use.

The present pharmacopeial list includes some nine hundred titles but, from the duplication of listing galenicals also, only about 550 crude drugs and chemicals are official. It is a matter of interest to know how many of the thousands of available drugs are actually employed. Personal experience may properly be given from the impossibility of securing more general statistics. The writer's practice may be considered fairly representative, for the specialty of digestive diseases involves a wide range of therapeutics. The writer's catalogue of office supplies includes some sixty drugs and chemicals necessary for use in the office, including anesthetics, a few simple antiseptics and dressings left over from general practice and retained for an occasional emergency, reagents and the ingredients of gastric and bowel washes and sprays. Besides these sixty office necessities, about 120 substances are catalogued that are drugs, from the patient's standpoint, including hypodermic tablets, supplies for the pocket-case, a few tablets of favorite drugs for office dispensing, and a rather large variety but very small bulk of comparatively new drugs. No attempt has been made to include the artificial foods, proprietary compounds, etc., with which physicians are so generously supplied. The last 774 prescriptions of the writer included 168 different substances: 121 were strictly official; 24 were definite chemicals, such as salacetol and unofficial salts of official alkaloids or official metals, e. g., the salicylate of strontium, potassium and bismuth; 6 were unofficial improvements on official drugs; 8 were animal extracts, foods and digestive ferments; 4 were galenical preparations of the unofficial plants, cola, cactus, piscidia and condurango; 5 were out-and-out proprietary preparations—compounds of malt, peptonizing tubes, spice plaster, and migrainin. That is to say, 42 of the 47 unofficial substances prescribed are omitted from the Pharmacopeia, not from any ethical grounds—unless in the case of certain new synthetic chemicals—but either because their virtues were not known at the time of the last revision, or because the writer rates them higher than they deserve.

The Pharmacopeia has, thus far, held to its original conception of the pharmacist as going out into the fields at certain seasons and gathering herbs, whose virtues he extracts with such simple apparatus as a stove, a kettle, a percolator, a mortar and pestle. Add to this apparatus a pair of scales, a graduate, a pill-tille, spatula and suppository mold, and the equipment is practically complete so far as the requirements of the official guide are concerned. It is no fault of the Pharmacopeia, neither is it a misfortune, that the science of pharmacy has as far outgrown the back room of the drug store as the shoe trade has outgrown the cobbler's bench. If the Pharmacopeia does not recognize the modern growth of wholesale pharmacy and pharmaceutical chemistry, neither the medical nor the pharmacal profession can afford to give serious recognition to the Pharmacopeia. While, in many instances, the shadow of commercialism and of extortion has hung over the newer remedies, we do not believe that practical advance in medicine need carry us far from the beaten track of ethical pharmacy. By far the largest and the most objectionable class of proprietary medicines, whether those that are openly advertised to the laity or those that tempt the physician to forget how to prescribe and to be the agent of a wholesale drug house, would be excluded by following the simple common-sense rule that polypharmacy should

not receive official recognition. Possibly an exception should be made in favor of a few old favorites, such as the compound cathartic pill, the Dover's powder, the Brown mixture of ammonium chlorid, etc.

Every definite, simple substance, whether inorganic or organic, which has been shown to be of service as a drug or as an office accessory, should be officinal. If our present patent and trade-mark laws cause a conflict with ethics, the Pharmacopeia should, nevertheless, recognize the drug, and the professions of medicine and pharmacy should then unite to secure a modification of the objectionable laws. In the fight against disease and death, no physician can hesitate to see whether his weapons are labeled "ethical," but must seize that which will be the best protection. If we remember rightly, it has been legally decided that neither the scientific nor the common name of an article can be reserved as a trade-mark. The monopoly of a preparation can be secured in one of two ways, either by patenting a method of preparation, which must be fully described and shown to be distinctly novel, or by the use of a trade-mark and keeping the method of preparation secret. The general processes of a science can not be patented, so that the preparation of a drug is open to anyone who can devise a new method, while a secret nostrum, covered by a trade-mark, is at the mercy of an expert analyst. As a matter of fact, almost all the monopolies of the latter class are compounds of no originality and little value.

The Pharmacopeia should adopt as its standard of strength and quality, the highest attainable, even if the competition of retail pharmacists is thereby excluded and the manufacturer is confined to wholesalers with elaborate and expensive equipments. The petrolata, as standardized by the last edition of the Pharmacopeia, are by no means equal to the clear products of several firms. The homeopathic mother tinctures are said to be, in general, far superior to those of the regular profession. Pill coatings of the crudest kind are still officinal. The manipulations of chocolate, gelatin, keratin and salol coatings, are quite unofficial, nor are the cachets, the gelatin bougies for the urethra, rectum, etc., and many other refinements of pharmacal art, recognized by the authority that ought to stand for the best attainable in pharmacy.

It is still too early to discuss in detail the proper regulation of animal extracts, serums, etc., and the improvements and modifications of opinion which will follow within the next few years would render the wisdom of 1900 crude and imperfect long before the expiration of the next decade. The most that can be expected of the next revision is the formulation of some rules of nomenclature and a general recognition of opotherapy.

At the last revision of the Pharmacopeia, the repudiation of the metric system was greatly feared. At the next revision, there seems to be no probability of the reopening of this issue. So far as the body of the Pharmacopeia is concerned, we believe there is no need of mentioning any unit of measure or weight. As we have already pointed out, the separation of any part of an officinal substance into a pill or other dose, is to be deprecated, hence the Pharmacopeia need only designate the proportional parts in ordering the preparation of galenical. We believe that no one will question the advisability of using convenient percentages, whenever possible, and if a very slight change in relative proportions and active strength is allowed, the percentages may always be stated in convenient numbers. After the pharmacopeial preparations are made, the physician

should be free to use his judgment as to whether he will prescribe in grams, grains or pennyweights, or any other unit on which he may agree with his local druggist. Nevertheless, for the country at large, only the metric and the apothecaries' systems can be officialized.

A PLEA FOR THE AGED*.

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One of the saddest commentaries on the medicine of the past can truthfully be said to be the neglect of the aged, as indicated by the scanty literature on the subject and the general apathy existing in the profession relative to the study of the normal changes as well as the diseases peculiar to advanced life. To the profession of France largely belongs the honor of laying the foundation for whatever we possess, fragmentary though it be, of senile pathology.

Prior to the beginning of this century those who wrote on the subject wrote, like Cicero, from a contemplative literary standpoint with the possible exception of the small treatises of Floyer, Welsted and Fisher. It remained for Pinel, in his elaborate treatise on "Clinical Medicine," published in 1815, the result of his vast experience in the Salpêtrière Hospital, to furnish the nucleus of our present knowledge of senile pathology. In 1839 Constatt published his treatise on the diseases of old age. In this work we behold the first systematic effort to bring together the scattered fragments of senile pathology. Charcot, in referring to this work, says: "In it, imagination occupies an enormous amount of room at the expense of positive and impartial observation." Cruveilhier, a few years later, from material gathered during his stay in the Salpêtrière, shed additional light on the pathology of old age in his "Atlas of Pathological Anatomy."

The works of Rastan and Charcot, both eminent clinicians, having access to the wards of Salpêtrière, have contributed much to our knowledge of the diseases of advanced life. To Charcot, especially, are we indebted for a small but valuable treatise. Geist, Day, McLachlan, Cruveilhier, Beau, Humphrey, Fothergill and Loomis are names worthy of mention as able contributors to this much-neglected subject, and be it remembered that "The Twentieth Century Practice of Medicine" was the first of our many excellent works on practice to add *one* chapter on old age and its diseases. The want of interest, as indicated by the scanty and fragmentary character of the literature on the subject, is largely responsible for the apathy existing to-day in our medical schools. The average medical student passes the college curriculum hearing scarcely a reference made to the changes peculiar to age and having little opportunity to become familiar with the maladies prone to overtake the frame as the years speed onward. He scarcely recalls a reference by one of his teachers to old age, unless suggested in mitigation of the failure of some brilliantly planned but misguided operation or equally ill-timed drug treatment.

Surely if the pathology of childhood demands clinical consideration of a special kind such as it now receives in our medical schools, and it be indispensable that it be known from a practical point of view—and this the

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