the chair of practice, and closely correlated with it. This would certainly be of much greater advantage to the student than the crowding of a host of minor specialties into the senior year of the curriculum, a practice now so generally in vogue in our schools. He would come to the day of graduation with his knowledge of therapeutics and practice both equally fresh in his mind, and with a feeling of sturdy independence in regard to the clap-trap literature dispensed by the nostrum vendor.

To sum up the situation, the medical teacher can not escape the reproach of having contributed in one way or another his share to the creation of the existing deplorable state of affairs. This responsibility is, I believe, of a purely negative character.

1. The subject of medicinal therapeutics in general has been subordinated in an undue degree to pathology and diagnosis.

2. In his teachings of therapeutics clinically the medical teacher has contented himself too often with vague general statements instead of recognizing that the subject is essentially one of detail, and entering on its discussion in the most minute way.

3. The teacher has presented the subject of therapeutics at the psychologically wrong moment instead of in direct connection with the subject of practice.

4. The teacher of materia medica has often failed to do his complete duty in not acquainting the student with the situation in regard to nostrums as it actually exists, and by thus sounding a note of warning, sending him out forewarned and forearmed.

WHY THE WORK OF THE COUNCIL ON PHARMACY AND CHEMISTRY IS NECESSARY.*

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When it has been made plain that the public or some section of the public has been systematically outraged for years the question arises, What are you going to do about it?

There was a time when most of the medicines used by physicians were prepared by themselves or by methods with which they were familiar, just as there was a time when every family prepared most of the food which it consumed. But those days are past, and trusting others to manufacture our foods and our medicines has led to gross abuses in which the general public, the physician and the patient all suffer. The food problem and the medicine problem have much in common, and a study of what has been done in the one case suggests what may be done in the other.

Just here it must be remarked that the trouble is not because of lack of supply of good food or good medicine. The reverse is true. In the world to-day there is more good sugar, good meat, good flour and good vegetables than ever before. Agriculture has advanced. So there is more good quinin, good calomel, good opium or good chloroform in the world than ever before; manufacturing pharmaceutical chemistry has also advanced. This is not the difficulty, but it is right here: We are being ridiculed, mystified and sometimes even bribed into believing that the thousand and one new things are so much better than the dozen or fifty old things with which we have been long familiar and the virtues and faults of which we know. The root of the whole evil may be referred back to the advertising mania which has taken possession of this country. It seems to be a

practical truth that any article, no matter how bad it is, may be sold by sufficient advertising. With great gain to the people as a whole, 95 per cent. of all advertising might be dispensed with.

"CONCENTRATED" FOODS.

Indirectly the growth of the science of chemistry is responsible for the acceptance of some false notions. In the early days of physiologic chemistry people were taught to believe in the possibility of certain extracts or concentrated forms of food, and before scientific men could clear up the matter the general public caught the idea and has held it more or less tenaciously ever since. Hence the possibility of convincing a man by blatant bill-board or some other objectionable form of advertising that a pound of a cheap mixture of glucose and toasted bread contains more nourishment than ten pounds of meat. Hence the possibility of persuading a man to think that a concentrated, so-called predigested or otherwise doped-up breakfast food is better than honest oatmeal or bread and butter. Parallel to this blind faith in highly advertised and often very inferior foods is the common faith among physicians in the virtues of the so-called synthetic remedies, especially if they are made in Germany. In too many cases there is little justification for this faith.

But these evils, bad as they are, are being cured, and in spite of the Illinois Food Commission. The able men connected with the Department of Agriculture at Washington and with some of the food commissions outside of Illinois are gradually educating the public. Some day we shall have a national pure food law, and such frauds and misrepresentations as are now frequently heard of will become rare.

THE ADVERTISING OF NOSTRUMS.

But how is it with drugs and medicines? I spoke a moment ago of advertising, and it so happens that the overzeal of the advertiser has suggested the way to begin the correction of the whole matter. The manufacture of standard drugs is a legitimate and long established business which requires no special advertising. Good goods sell themselves with very little booming. They are like wheat. But fake medicines, like fake foods, must be advertised, and widely advertised, to sell. If the publicity can be checked the frauds must fail. The medicine manufacturer naturally looks to the medical journals as his advertising medium. If in the minds of the publishers of such journals the right sentiment against fraud can be created the battle for honesty and decency here is practically won.

But in striving to shut out the advertising of fake medicines there is always some little danger of excluding also a really meritorious article, and occasionally something of the sort appears. The physician can not now be expected to discriminate between the good and the bad which is offered him; that would require far too much special knowledge. The nature of food stuffs and the limitations in the manufacture of foods are pretty well known, and false claims are very easily disproved. But it is not so with most drugs. Some of the newer things are powerful and excellent remedies. With the advance of organic chemistry greater possibilities are developed, and we must admit that we do not know the limitations here at all. Hence when the manufacturer or his agent offers a description of his new ware for advertisement the publisher is not, off hand, justified in rejecting it unless the claim made is on its face inconsistent and absurd. There should be some way of proving the truth or falsity of the claim before accepting

* Read in a symposium on Proprietary Medicines and Nostrums before the Chicago Medical Society.

or rejecting an advertisement, and such considerations were among the first to suggest the value and importance of work like that undertaken by the Council on Pharmacy and Chemistry.

It may be said that the publisher is not responsible for the truth of what goes into his advertising columns. That depends on what he publishes. The daily papers may advertise real estate, or \$10 hats marked down to 39 cents, and the buyer can see for himself. But with the advertising of drugs and medicine the case is wholly different and the responsibility great. This responsibility is very great if the advertising medium happens to be a medical journal, for from such a publication we have the right to expect consistency if nothing more. Until recently few publishers of medical journals gave much thought, apparently, to what went into their advertising columns, since most of these journals carried, and some continue to carry, advertisements of medicines as preposterous as Lydia Pinkham's, Peruna, and Wine of Cardui. This shameful fact points to a peculiar conception of "ethics" in medical journalism and makes us wonder where, in the code of the medical editor, lies the distinction between an honorable profession and a conscienceless trade.

WORK OF THE COUNCIL ON PHARMACY AND CHEMISTRY.

Two or three years ago the editor and others connected with *THE JOURNAL* of the American Medical Association began to talk of systematically controlling the character of the matter in the advertising pages. A number of pharmacists and chemists were consulted as to ways and means. Finally the various suggestions took tangible shape and about a year ago the Council on Pharmacy and Chemistry was organized. This council consists of three committees—one on pharmacy, one on pharmacology and one on chemistry. The men constituting the council are active in different lines of scientific work related to medicine, and with this division of labor it is possible to scrutinize an article from several standpoints. Very often samples of the articles to be advertised have been sent to all members of the council for study. Already some good results have been reached and a number of frauds have been publicly exposed. I recall, for illustration, the acetanilid mixtures, but these are not all. They were merely the beginning of a series, and as the work of the council progresses it will do for medicines what those connected with some of the state food commissions are doing for what we eat. Surely the medical man should know the exact nature of what he is asked to prescribe, and the work of the council is to find out and publish as far as possible the true nature of all articles of remedial nature offered to the physician.

This is a difficult undertaking and haste can be made but slowly. Above all things else, the work of the council must be correct, since great interests are at stake and justice to all must be done. The council does not care to pry into the secrets of the manufacturer's business, but it does insist on knowing the truth about the article manufactured if it is to be used in the treatment of disease. Hundreds of routine analytical and other examinations have been made and a good part of the time of the council has been consumed in investigating and, in some instances, showing up the fraudulent mixtures described as synthetic, which bear about the same relation to real synthetic preparations that a mixture of tacks, paving stones and ostrich plumes would bear to gold watches. Legitimate medicines have nothing to fear, but trash, hiding behind false descriptions, must be brought out into the light.

THE PARASITISM OF THE TUBERCLE BACILLUS AND ITS BEARING ON INFECTION AND IMMUNITY.

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(Concluded from page 1254.)

To return to our subject of focal immunity. This, as contrasted with a general resistance, is probably the chief stumbling block to successful artificial immunization. To bring about the latter the whole body has to be exposed to the immunizing (and toxic) substances, as there is no other way of reaching certain avenues or portals of entry which are exposed to invasion. We might, for instance, cause the inhalation of an impalpable dust or spray of ground tubercle bacilli to increase the resistance of the lungs in the healthy and the diseased, but then the greatest care would have to be exercised not to give an overdose to an affected lung; otherwise a very severe or even fatal congestion due to the local tuberculin reaction might result.

This problem of local immunity and its relation to a general immunity has occupied my attention for a number of years. Beginning in 1898 I carried out a long series of experiments on guinea-pigs with bacilli killed at 60 degrees and 100 degrees centigrade to see how far a focal or local immunity contributed to a general resistance. These experiments have been frequently interrupted and are still incomplete partly because the equipment needed to protect attendants has not been available. So far only dead bacilli have been employed throughout. The animals used were guinea-pigs. No striking results have been obtained, and hence the work has remained unpublished. The experiments bear, however, on the subject before us and I shall briefly refer to them here.

If we inject a certain amount of a suspension of tubercle bacilli in some different fluid, and killed at 60 degrees centigrade, into the peritoneal cavity of guinea-pigs, no immediate effect is produced. There may be at first slight loss in weight or none at all. After four to eight weeks the guinea-pig, outwardly well, is sensitive to tuberculin. An ordinary dose may kill it or reduce its weight considerably. At this time the peritoneal cavity may or may not show any local proliferation. In the omentum some nodules may be found centrally disintegrated, soft, like pus, but consisting only of the usual fatty debris. The inner wall of the nodule is smooth, there are no signs of a progressive disease anywhere recognizable with naked eye or in sections with the microscope.

If we now inject a second similar dose, the guinea-pig within twenty-four hours begins a prolonged tuberculin reaction associated with fever and rapid loss in weight. If we examine the peritoneal cavity after one or more weeks, we now find considerable hyperplasia of the omentum, more rarely eruptions on the peritoneum of the abdominal wall. The omentum may become very large and adhesions may bind it to various organs, especially to the upper small intestine and lead in some cases to intestinal hemorrhage and rapid loss in weight, even death.¹²

This second severe reaction I regarded as due to the rousing of a local immunity by the first reaction. The

12. Since making these observations I have asked myself whether some of the tubercular eruptions of the peritoneum, cured by operation, may not have been due to dead or nearly dead bacilli discharged from an old focus on a promptly reacting, because partly immunized, membrane.