

profuse eruption of herpes appeared on the left side of the neck. Nothing whatever was being done for the eye. With energetic treatment, the eye infection cleared and slowly the other signs disappeared, but the child made an extremely slow convalescence.

DR. MYER SOLIS-COHEN, Philadelphia, said that the Board of Health of Philadelphia does not treat acute spinal meningitis the same as smallpox. It does not establish quarantine, but placards the house and excludes the children from school. The reason for this is that often two children in a family will have the disease. As assistant medical inspector, Dr. Solis-Cohen placarded five houses for cerebrospinal fever in the past ten weeks. In two houses there was more than one case. On investigating the cause for the disease he was unable to find any. In one house two children who contracted the disease had been playing about the dirt while the mother was cleaning the house into which they had moved recently and which they found in a filthy condition. In regard to the necessity of disinfecting the nose, it occurred to him that conditions might be the same as in diphtheria. In diphtheria by disinfecting throat and testing it bacteriologically a few minutes later, one may get a negative result; while in the course of 24 hours one may get a positive culture. In some cases the culture may be negative 24 hours after disinfecting the throat, and yet in another 24 hours the culture may be positive. That is why the city of Philadelphia requires two successive negative cultures before releasing a case of diphtheria. The question in such cases is, Do the germs come from the air or from the throat of the patient? When one culture gives a negative result, and another taken later gives a positive result, is the latter due to infection from the air, or to a few organisms left in the throat, or in the tonsillar crypts, and which later multiply?

MATERIA MEDICA AND PHARMACY IN HOSPITAL PRACTICE.*

M. I. WILBERT, PH.M.

Apothecary at the German Hospital, and Member of the Council on Pharmacy and Chemistry of the American Medical Association.

PHILADELPHIA.

The practice of pharmacy in American hospitals dates back to 1752, when Jonathan Roberts was duly appointed to preside over the recently established apothecary shop in the Pennsylvania Hospital at Philadelphia. This appointing of an apothecary by the managers of the Pennsylvania Hospital marks the introduction of the dispensing of prescriptions by other than the physician or his apprentice, and may, in fact, be considered as the beginning of pharmacy in this country.

The advantage and the importance of this branch of hospital work was further recognized in 1768 by the erection of a special building, or an "elaboratory," in which to prepare the medicines to be used in the treatment of the sick.

That the innovation of having prescriptions compounded by other than the physician or his apprentice had a beneficent influence on the medical staff connected with the hospital is perhaps best illustrated by the subsequent career of John Morgan, the second apothecary at the Pennsylvania Hospital and the father of medical schools in America.

Dr. Morgan was the first physician in this country to restrict himself to the practice of medicine and to have all of his prescriptions compounded by a regularly trained apothecary. He found but few followers until some time after the Revolutionary War, though two of

his associates on the staff of the Pennsylvania Hospital, Drs. Jones and Chovet, are known to have refused to dispense their own medicines and also restricted themselves to the writing of prescriptions.

During the war of the Revolution the thoroughly well developed pharmaceutical departments of the military hospitals of our French allies were not without influence on the medical department of our own army. Without going into detail it may be pointed out that this is perhaps best illustrated by the fact that the army hospital pharmacist, or druggist, at the close of this war and until some time after the war of 1812, was on a better footing than he is now and that the first pharmacopoeia, or book of formulas, to be published in this country was printed in connection with the military hospital at Lititz. As a further illustration of the influence of hospital pharmacy in the earlier periods, it may also be added that the immediate forerunner of our present Pharmacopoeia was the Pharmacopoeia of the New York Hospital, published in 1816.

The appreciation of the hospital pharmacist as a possible factor in the progress of the science of medicine appears to have been of comparatively short duration. At the Pennsylvania Hospital the position of apothecary early degenerated into a form of apprenticeship for medical students, and many of the positions in the drug departments of American hospitals have been used to acquire a knowledge of physic or to assist in defraying the necessary expenses of a course in medicine.

Being so largely used as a stepping stone to a position that was thought to be more advantageous and desirable, there is little wonder that hospital pharmacy in America never attained the recognition or the development to which it has reached in France, or even in Great Britain.

In the one hundred and fifty years of the practice of pharmacy in American hospitals we can only point to one hospital pharmacist who idealized his position and was able to accomplish something that we of to-day may rightfully point to with pride.

This man, the late Charles Rice, was connected with the drug department of Bellevue Hospital, New York, for over forty years, and for more than twenty years was the chairman of the Committee on Revision of the Pharmacopoeia of the United States. It is fair to add that he was the one man above all others who was instrumental in converting that book from a mediocre enumeration of drugs and medicines into a truly representative pharmacopoeia that is, even now, more thoroughly appreciated and admired abroad than at home.

With this single though illustrious exception, the field is indeed barren, but the bleakness of it all becomes even more apparent when we consider what might have been accomplished to aid in the progress of medicine, and what the want of practical pharmacy in our leading hospitals is really responsible for. As a suggestion of what might be done it may be permissible to point out that the special report on "Benevolent Institutions," published by the Bureau of the Census in 1905, states that on the first day of that year there were in the United States no less than 1,493 hospitals and 156 dispensaries, dependent largely on the subsidies from public funds or on the charity of private individuals and thus virtually public institutions.

On this same date there were under treatment 71,530 patients, and in the calendar year immediately preceding no less than 1,064,512 patients had been treated, at an estimated cost of over \$30,000,000. An even greater number of persons 1,611,651, were treated in

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

the public dispensaries, making a total of no less than 2,676,163 charity patients.

If each one of these persons were counted but once, and fortunately they are not, more than 3 per cent. of the total population of the United States would have been the object of a greater or lesser degree of charity during this one year.

Of the 1,649 institutions enumerated in this report of the Bureau of the Census no less than 350 should, and probably more than this number do, employ a pharmacist or person to prepare and dispense the medicines that are used. These figures when compared with the absence of any available evidence of scientific work done in the pharmaceutical departments of even the larger and more influential hospitals need no further comment.

That there is need for a radical change in this connection is perhaps best illustrated by the work that modern hospitals essay to do and the practices that are really followed.

With the introduction of laboratory instruction in the American medical colleges, and with the accompanying appreciation of the advantage of practical over purely theoretical knowledge, there has come a deeper appreciation of the possibilities of hospital experience as a factor in the preliminary training of future physicians. One of the marked shortcomings of practical experience in hospitals manifests itself when we remember that the impressions obtained by students or young practitioners are likely to have an important influence on their future thoughts and ideas.

We not infrequently hear the assertion that the practice of medicine is more than drug giving, and, while this assertion is generally accepted as true, there appears to be a peculiar lack of appreciation of this truism on the part of physicians themselves, and the present day training in the average hospital is certainly not conducive to a true comprehension of the uses or of the limitation of medicines.

On the one hand, we have the ultra restrictions of the hospital formulary, with a limited number of antiquated and more or less complex recipes that are made to fit all cases that present themselves. These recipes are not infrequently numbered or lettered to correspond with the number or letter on a stock bottle in the ward medicine closet. This system is further simplified in the outpatient department of at least one, otherwise admittedly excellent, institution, where the physician is directed to write the number of the recipe and the dose that is to be taken on a special form, and this is subsequently pasted on the vial of medicine that is handed to the patient, thus reducing the necessary thought and labor to a minimum and making the treatment of the patient all but mechanical.

It is needless to add that practices of this kind are distinctly harmful and contribute nothing to either the progress of medicine or the advancement of the individuals directly interested. This is but one of the numerous variations of the practice of pharmacy in American hospitals, and is by no means the worst.

A much more serious proposition is to be found in the dispensing of ready-made pharmaceutical preparations by ignorant and incompetent persons. This is perhaps a phase of the present-day practice of pharmacy that had best be gone over in silence, though all of you have read of, and some of you know of, perhaps added instances in which so-called dispensing tablets of atropin or strychnin were administered for the dose tablets that

were intended. The responsibility for accidents of this kind will, eventually at least, be placed on the medical attendants of the hospital, who are morally responsible for the lives of the patients entrusted to their care and should know of the competence or the ability of persons in charge of the dispensing of potent drugs.

There is still another phase of the abuse growing out of the lack of appreciation of practical pharmacy in American hospitals that is not alone interesting but of tremendously far-reaching importance. This is the use of nostrums and the all too liberal giving of testimonials. Such evidently objectionable preparations like "Burnham's Soluble Iodin," "Waterbury's Metabolized Cod Liver Oil," "Duffy's Malt Whisky," "Ammonol," "Electrozone" and a host of others have been able to secure testimonials from physicians who are officially connected with some of the leading hospitals of this country, and the manufacturers have in turn used these testimonials to dupe countless thousands of other physicians, and not a few of the laity, into believing that these testimonials represent painstaking, scientific observations and that the preparations were not, if used at all, doled out promiscuously, like hospital mixtures, and the conclusions arrived at on absolutely insufficient evidence.

Those of you who know of the composition of "Burnham's Soluble Iodin" will probably appreciate the sarcasm in the title of the little booklet called "A Few Clinical Reports from New York Hospitals," and all of you must be sensible to the shameful reflections on medical institutions that are embodied in the four-page circular consisting of a list of "A few of the prominent institutions where Waterbury's Metabolized Cod Liver Oil Comp. is making a world-wide reputation."

These are but two of a host of nostrums that are being advertised as having achieved wonderful results in hospital practice. As an illustration of the degree of force that is sometimes applied to clinical reports to make them fit in with the views of the nostrum exploiter it is but necessary to call your attention to some of the advertising material recently put out by the manufacturer or the agent of "Pepto Mangan (Gude)."

The first of these to be exposed is the deliberate garbling of the "Report of the Commission for the Study and Treatment of Anemia in Porto Rico."¹ A more recent illustration is THE JOURNAL'S² critical discussion of a report by Dr. Mateo M. Guillen, a former house physician at the Infants' Hospital, Randall's Island, New York. This report is so evidently manufactured that it strongly suggests the use of some other incentive than the desire to compile a scientifically valuable report of clinical observations.

Those of you who know of the direct and implied offers that are frequently made to hospital internes for clinical reports of this kind will appreciate the general good sense and the strength of character of these young men, as evidenced in the fact that these doubtful or even fictitious reports are not more frequent than they really are.

Many of you, particularly those who are connected with hospital clinics and medical colleges, know that manufacturers of proprietary medicines not infrequently offer a very fair remuneration for work of this kind, in addition to supplying practically unlimited quantities of their preparation for experimental purposes. It is perhaps needless to add that it would require an individual of particularly strong character to willingly

1. THE JOURNAL A. M. A., Sept. 16, 1905, p. 934.

2. THE JOURNAL A. M. A., April 6, 1907, xlviii, p. 1197.

forego the expected remuneration for a clinical report and unhesitatingly denounce a preparation that he had been experimenting with.

Rational experiments in therapy and the careful study of the sciences underlying the treatment of disease are recognized as being among the more evident duties in connection with hospital work. In this connection it is fair to suppose that legitimate experimentation with drugs is by no means the least important part of this duty. It is generally conceded that under no conditions can drug action on the human body be more advantageously observed than in the wards of a well equipped hospital under the constant supervision of trained persons. If these experiments are to be of scientific value, however, they must be made absolutely independent from any possible influence of a monetary consideration for the work done, the chemist as well as the pharmacologic properties of the materials used must be thoroughly well known and their identity and relationship to other known substances thoroughly well established.

To be of value experiments of this kind must be conducted under the direct supervision of competent and well trained persons and the results, particularly if unfavorable, should be given prompt and proper publicity as a warning to others engaged in observing the action of the same materials.

It is in this particular field of hospital work, and largely in the capacity of an adviser on the chemistry or the pharmacy of remedies, that the hospital pharmacist can be, and very properly should be, of greatest service. With the ever growing number of studies that are imposed on the medical student there is little or no time to be devoted to the study of details of pharmaceutical technic, and unless the young graduate is given an opportunity to familiarize himself with the possibilities of modern pharmacy during his hospital career he surely will, as many of them do, fall an easy prey to the detail man of the nostrum-maker.

The influence of a thoroughly well equipped and efficiently conducted pharmacy on the medical house officers and on the medical students attending ward classes, in hospitals devoted at least in part to the teaching of medicine, must necessarily be of importance and an educational factor of some moment. With the further development of this particular field of usefulness for the hospital apothecary it is not at all improbable that in future years we may have the introduction of a specially trained class of pharmacists to take up and further develop this particular line of pharmaceutical work.

In conclusion, let me venture the assertion that if every active hospital of a hundred or more beds employed a pharmacist having the necessary preliminary training and the inclination for active work, the science of pharmacy and with it all branches of the science of medicine would make much more rapid progress, proprietary medicines would soon be appreciated at their proper value, and the practice of medicine would thus be relieved of one of the most disgraceful blights of the present time.

DISCUSSION.

DR. W. J. ROBINSON, New York City, paid a glowing tribute to Charles Rice, who, in his opinion, was not only an ideal pharmacist, one of the greatest pharmacists that America ever had, but one of its greatest men, and with all that he was extremely modest and unassuming. He was devoted to pharmacy as few men have been; his entire life was in it. He did not care for any remuneration. His one object in life was to raise pharmacy to the highest standard possible. It was a great mis-

fortune that death took him away at a comparatively early age, because he is responsible, Dr. Robinson said, more than perhaps any one man, for what the U. S. Pharmacopeia is today.

In reference to soluble iodine, Dr. Robinson claimed to have been the first to expose that remedy, which claimed to be a new process of rendering iodine soluble and miscible in water without containing any iodide or alcohol. But, he said, the manufacturers forgot to say that they used a little hydriodic acid to render it soluble and miscible with water.

DR. WILLIAM ROBINSON, Philadelphia, referring to the responsibility assumed in publishing these recommendations from individuals, institutions and hospitals, said that some twenty-five years ago St. Jacob's oil was very much exploited. It was a common thing for the daily papers to come out with columns of advertisements, giving testimonials with the names of prominent people attached. The thing became so intolerable that finally the clergymen, at one of their meetings, elected to have some one prosecute the firm for what they claimed was a libel, using a name without the owner's consent. The case came to trial in due course, the attorney for the defendants, much to the surprise of the other side, said: "It is not necessary to have a jury; we plead guilty as far as using the gentleman's name without his consent is concerned, and the gentleman will please prove what damage he has received as a result of this publication." The clergyman was placed on the stand and he was absolutely helpless; he could give no evidence that he had been damaged in reputation or pocketbook by the publication of his name. Often the hospital is injured by some interne, or some one who has had some official connection with it, bringing disparagement on the hospital as a consequence. Dr. Robinson cited an instance in Philadelphia, where a physician published his name in a testimonial for a syphilitic cure and gave the Marine Hospital as the one he was connected with, whereas it happened he had only a temporary connection with that institution, some thirty or forty years before.

DR. ROBERT A. HATCHER, New York City, recalled the Dr. Mateo M. Guillen episode. Guillen was the house surgeon at Randall's Island and Dr. Stovall suggested that they carry out some studies on iron in anemia. They did so. The first thing Dr. Stovall knew that circular was in print as an advertisement, and Dr. Mateo M. Guillen was in South America.

DR. C. B. LOWE, Germantown, Pa., said that Dr. Osborne referred to the fact that at the New Haven Hospital the students knew less when they came out of the hospital than when they entered, simply from the fact that remedies were prescribed merely from numbers. It would take more time but would give a better knowledge of material medica if the prescription could be written out in each case. Dr. Lowe thought that if that could be done day by day it would be a means of education. They learn absolutely nothing from ordering so many ounces of No. 12, three times a day. It means nothing to them. It might as well be written in Hebrew or Greek. If they could learn prescription writing, they would gain a great deal. Many young physicians, he said, are painfully ignorant of it.

DR. OLIVER T. OSBORNE, New Haven, Conn., said, in explanation, that his statement applied not alone to the New Haven Hospital, but to students in all sorts of hospitals out west, south, east and north, and Dr. Osborne has come in contact with men who have been in hospitals and show a woeful lack of knowledge of prescription writing. Junior students, he said, write better prescriptions than the seniors, and the seniors better than hospital graduates. There is a progressive deterioration as the student remains in the hospital. When the students come into contact with clinical work in dispensaries they do not always apply the personal equation to the patient. In other words, men beginning to practice medicine may become splendid surgeons, they may be able to treat certain kinds of internal disease, but in private practice they must go to work and study their therapy all over, and while they are doing that, they often take up with the first proprietary that comes in. Dr. Osborne heartily agreed with Mr. Wilbert and hoped the hospitals would take note of this matter and give more attention to remedying this evil.

DR. C. B. LOWE, Germantown, Pa., said that he did not wish to bring any reflection on the New Haven Hospital, and as Dr. Osborne qualified his statement, he would like to amend his own by saying the New Haven Hospital and others.

DR. HENRY R. SLACK, LaGrange, Ga., twelve years ago spent some time visiting hospitals and investigating their methods. The internes, the hospital men, were all bright young fellows who spent an hour or two making careful diagnoses by blood counts, analysis of urine, etc., but they did not know what to prescribe. The chiefs, on having their attention called to this state of affairs, said they did not have time to write prescriptions. Dr. Slack found that true in Philadelphia, in Baltimore and in Chicago. That, he said, is the seed, the germ from which these proprietary remedies spring. Bright men pass examinations, take positions as internes and yet they do not know what medicines they are prescribing. The average graduate when he begins to practice snaps up the first proprietary that comes along as a fish does bait. That is the reason the proprietary men have such a rich field. Dr. Slack urged that we teach the young members of the profession to write prescriptions, know what medicines they are using, and not depend on some one else to furnish prepared panaceas for all the ills to which flesh is heir.

INTRAVENOUS TREATMENT OF SYPHILIS.

G. FRANK LYDSTON, M.D.

Professor of Genito-Urinary Surgery and Syphilology, Medical Department of State University of Illinois; Surgeon to the Lakeside Hospital.

CHICAGO.

My clinical experience with the intravenous injection of mercury in syphilis is as yet limited. I nevertheless feel warranted in presenting that experience to the profession. I confess that it was with some hesitancy that I adopted the method. I have, however, been pleased with my experience thus far. I herewith submit a report of ten cases in which I have used the intravenous injection with mercuric chlorid. It will be understood that I do not claim that the intravenous method was the only one available in all these cases, nor am I yet in a position to assert that it should be used as a routine practice. In several, however, it was a most valuable therapeutic resource, and in all of them its action was superior to that of any other method in my experience. In "malignant" cases and lesions that seriously menace the integrity of the nervous system or viscera, intravenous injections would appear to afford a safe and sure method of relief. The speedy mercurialization of the blood with consequent prompt systemic effect of the drug, the relatively large doses permitted, the freedom from the painful effects of subcutaneous and intramuscular injections, and in general the absence of gastrointestinal disturbances, especially commend the intravenous treatment. Judging from the small series of cases herewith appended, bowel irritation is exceptional from the use of large doses of mercury intravenously. There is apparently no tendency to sudden severe salivation from the intravenous use of large doses of the drug, although the mouth reacts promptly in some cases.

CASE 1.—A woman, 30 years of age, in the beginning of the third year of typical secondary syphilis. Pains in the limbs, lowered tendon reflexes, and a sensation of numbness and heaviness of the limbs were complained of at the time I was first consulted, and the patient stated that she had had these symptoms for several weeks. There were no other symptoms suggestive of ataxia. There was a slight apparent loss of muscular power over the lower extremities. I put the patient immediately on intramuscular injections of succinamid, but she proved intolerant of them, the pain being so severe that I was compelled to discontinue their use. Inunctions produced a severe dermatitis, and mercury internally resulted in severe

gastrointestinal irritation, the stomach becoming so sensitive that I was compelled to discontinue medication by the mouth. The indications for radical treatment being urgent, I resolved to try the intravenous injections, giving 25 minims of a 1 per cent. solution at a single daily injection for two weeks. Improvement was noted after the third injection, and the cord symptoms entirely disappeared at the end of ten days. The emergency having apparently passed, and the stomach being again tolerant of drugs, I stopped the intravenous injections and put the patient on the routine administration of protiodid.

CASE 2.—Woman, 23 years of age, with a gummy ulcer of the right ala nasi. Aside from this single tertiary manifestation of the disease, no lesions had been noticed for several years. The nasal ulcer proved very resistant to treatment. It yielded slowly, and when cicatrization had been complete for a few days, the lesion suddenly, without a warning, would recur. Mercury and iodid pushed to the point of tolerance had yielded only temporary benefit. The patient was a large, well-nourished woman, and I began with fifteen drops daily of a 2 per cent. solution of bichlorid. The curative effect of the method was very quickly noted. The ulcer healed soundly within ten days and has remained healed for over a month, during which time the injections have been given twice weekly.

CASE 3.—Young man, 33 years of age. This was a rather unusual case, being one of chancre of the tonsil. The primary lesion was associated with an enormous cervical adenopathy on the left or corresponding side. The faucial inflammation was very marked. Mercury given by inunction and by mouth acted extremely slowly in this case, and as deglutition was very painful, the patient complained very bitterly of his condition. I began intravenous injections of bichlorid in a dosage of 15 minims of a 2 per cent. solution. I did not go beyond the dosage for the reason that I was apprehensive that the large amount of mercury that had already been given in the ordinary way might suddenly take effect and in combination with the intravenous dosage produce disastrous results. Within four or five days after beginning the intravenous injections marked improvement was noticeable, and resolution of the primary lesion and of the bubo in the neck went on very rapidly.

The physiologic effects of the mercury were manifest on the tenth day, and the treatment was discontinued. The improvement, however, went steadily on, and at the end of three weeks the patient was in a very satisfactory condition.

CASE 4.—Patient, a man, 35 years of age, had been under my treatment for syphilis for about five years, the case being a very stubborn, protracted one. Various lesions had appeared from time to time, and had healed only after very large doses of mercury and iodid, long-continued. The patient had been under tonic doses of mercury constantly for a period of six months, during which he had been apparently well. He suddenly reappeared, however, for advice, presenting a gumma of the soft palate. This softened, broke down, and perforated within forty-eight hours. It appeared so malignant that I resolved not to rely on antisyphilitic remedies administered in the ordinary manner, and therefore put the patient on intravenous injections, using 20 minims of bichlorid, 2 per cent., daily. Marked improvement was manifest at the time the third injection was given. A permanent fistula will undoubtedly result in this case, but the destruction of tissue was speedily checked and the process limited to an area very much smaller, in my opinion, than would have been the case with any method of treatment other than the intravenous.

CASE 5.—Woman, 40 years of age, under treatment for locomotor ataxia undoubtedly of syphilitic origin. This case was very difficult of management because of the intolerance of the stomach for mercurials and iodids, and the extreme irritability of the skin, which practically prohibited inunction treatment. Some improvement in the symptoms was noted soon after the routine administration of mercury, but exacerbations of severe pain in the lower extremities continued to be a frequent and annoying symptom, and as it was impossible to continue the treatment for any length of time, the case was especially trying. Intravenous injections of $\frac{1}{4}$ grain doses of bichlorid of mercury produced rapid improvement. The patient is now