many other diseases more or less intimately dependent on impaired vitality.

Past experience proves that the mortality from tuberculosis can be greatly reduced. There are those who go so far as to say that a systematic and energetic fight will render tuberculosis as rare as leprosy. Unless a vaccine comparable to that for smallpox, or some other means producing artificial immunity, can be discovered and universally applied, the above view would seem too sanguine. The problem of leprosy was a relatively simple one. That disease is far more difficult to transmit from one individual to another than is tuberculosis. Its lesions are mainly external and it is thus more easily recognized. The segregation of leprosy carried out during the Middle Ages could thus yield results hardly to be hoped for in the case of tuberculosis, an adverse factor in the attempt to stamp out which lies in that, unlike most of the more acute infections, it can be carried and perpetuated by a number of domesticated animals — cats, dogs, rabbits. The tubercle bacillus is being put on the defensive and we can be sure will fight for his life just as we are fighting for ours. Is it not possible that more resistant and virulent strains may develop, if not wholly, at all events partly, in proportion as we develop immunity? That nature is very careful of the species while seemingly regardless of the individual is as true of a bacillus as of larger organisms. Man has totally exterminated the great auk. The Labrador duck has utterly disappeared since 1860 without any assignable cause. The bison and the wild pigeon have practically disappeared. Animals which breed slowly, are defenseless, and, like the bison, require vast tracts of land coveted by civilized man, are handicapped in the struggle for existence. I am told that the few herds of bison which are preserved only just about hold their own, showing very slight, if any, tendency to increase. The balance of nature is very complex and may be very delicate. It does not seem probable that the disappearance of the wild pigeon, such enormous flocks of which still existed easily within the memory of many of us, can be attributed save in subordinate part to their slaughter by man. The part played by man in the extinction of the bison is probably larger than in the case of the pigeon. The preserved herds of bison are well cared for but can no longer migrate. Why do not they increase under protection as do moose and the white-tailed deer? Is it not possible that these beings had about reached their limit of adjustment to external conditions and that any slight change in the balance against them was too much for them? Our lives, and even the written records of man, are so short, and it is so hard for us, busy with our daily struggles, to project our thought and imagination far enough backward or forward. Man himself is a mere babe in arms in comparison with life on this planet, and his parasites in their present form must be younger still. The destructive moths which have caused so much trouble in these parts of late years find no adequate natural enemies

in this country. In Europe they ordinarily are kept within bounds, but even there they now and then get ahead of their enemies for a time by reason of some change in the balance.

This line of thought may not be practical. It certainly does not materially influence action now or in the immediate future, but it seems to me deeply interesting and wholly pertinent to our subject of the evening. There is no tendency to race suicide in the tubercle bacillus. He finds an acceptable *habitat* in man, whose numbers are increasing and whose tendency in civilized countries to form large communities runs directly counter to some of the measures which he takes to protect himself against the bacillus. We know that we are decreasing and can further diminish the mortality of tuberculosis. Can we correspondingly decrease the morbidity? I doubt it. Tuberculosis seems likely to persist for a long time to come, perhaps indefinitely, in latent, more superficial, milder and more chronic forms. There can be no question that there are many persons — in all probability there are some such in this very room — who have or have had tuberculosis, even of the lungs, and who tolerate or have recovered from it without knowing that they have or have had it. Here again comes in the distinction of Theobald Smith between infection and disease. It is mainly to his suggestion that I owe the above line of thought.

If the master-word in medicine is work, that in the tuberculosis fight is education. Every teacher knows this to involve work — hard work. To paraphrase Talleyrand's definition of the main requirement of the diplomatist we can say, "*De l'éducation, encore de l'éducation, toujours de l'éducation.*"

The effort to compress so large a subject into reasonable limits has not been an altogether easy one. I trust that my sins of omission and commission may not be as obvious to you as they are to me.

Original Articles.

THE DAILY CARE OF CONSUMPTIVES AT A GENERAL HOSPITAL AS AN AID TO SOLVING LOCAL TUBERCULOSIS PROBLEMS.*

BY ARTHUR K. STONE, M.D., AND CLEVELAND FLOYD, M.D.,
BOSTON.

In January, 1905, Dr. E. P. Joslin and myself, in our annual report, made the following recommendation to the Board of Managers of the House of the Good Samaritan who were expecting in the near future to build a new hospital building:

"It is hoped that means will be found whereby women and children will be encouraged to come to the House of the Good Samaritan and spend the day in the open air, receiving a mid-day meal, encouragement and advice, and return to their homes late in the afternoon in time to prepare the evening meal."

At this time neither Dr. Joslin nor myself had any knowledge of a somewhat similar experiment

*Read at the meeting of the American Climatological Association in Washington, May, 1907.

Protection from the high winds.

The Camp in winter.

The Camp from the Samaritan Hospital. Harvard Medical School Buildings in the background.

being tried in the day camps for tuberculosis in Berlin. From long experience in out-patient work at the Massachusetts General Hospital and the Boston City Hospital, we had become dissatisfied with the inadequacy of such treatment as could be offered many ambulatory patients, and I had already urged upon the administration of the Massachusetts General Hospital the development of a roof garden, that should be conducted along lines similar to those outlined above. As yet the necessary funds to carry out these plans have not been forthcoming.

May, 1906, the managers of the House of the Good Samaritan undertook the experiment suggested in the above recommendation and appointed Dr. Cleaveland Floyd to have charge of the out-patients under the direction of the medical staff. It is the story of the year's work at the House of the Good Samaritan which I wish to present to you.

Before beginning upon the detail of the work I will say a word as to the hospital. The House of the Good Samaritan is an endowed institution, managed by a board of trustees, who are largely made up of the personal friends and relatives of the founder, Miss Anne S. Robbins, who devoted her long life to the management of the institution, living and dying within its walls. Her example and enthusiasm are shared by those who now carry on the work. The new building is the first of the group of hospitals which will eventually surround the beautiful new buildings of the Harvard Medical School. There is about an acre of land around the House of the Good Samaritan. The hospital was open to patients more than a year before the opening of the new medical school buildings, and daily clinics were held there. There are accommodations for about 43 patients. Twelve beds are devoted to children's orthopedic cases. The remainder of the beds are divided between cases of advanced phthisis and general chronic conditions. The House of the Good Samaritan is in no sense a "home" but a hospital for the treatment of chronic disorders. The members of the medical staff make daily visits. There is a teaching laboratory and a graduate house-officer in attendance, a Baruch hydrotherapeutic apparatus is in process of installation, and the solarium and balconies provide an abundance of fresh air.

The wards for the tuberculous patients and the non-tuberculous are separated from each other by single rooms, dining-rooms, bathrooms, etc., so that there is no contact between the two groups. Those who are able, however, eat in the same room, but at different tables and have china of different colors. The china of the tuberculous patients is cleansed and sterilized by boiling in an entirely separate room from the general serving-room where the dishes of the non-tuberculous patients are washed.

In passing I may add that, so far as is known, during over forty-six years of the hospital's history, but a single case of tuberculosis has been acquired by any of the hospital staff; many of the

servants have been with the institution over twenty years, and a number of matrons and nurses ten to fifteen years.

The active attention to the care and treatment of advanced cases yields as great satisfaction as do the cases reported by Dr. Bonney last year. Cases are arrested and all traces of bacilli disappear; some improve so much that the State Sanatorium at Rutland is ready to receive them, and others go to pleasant country surroundings among friends. Even those who do not recover, nevertheless amply repay the care that is bestowed upon them by the way in which they respond to treatment, so that their last days are days of comparative comfort.

The nurses employed in the wards are all graduate nurses. They are under the direction of the superintendent and her assistant, both graduates of the Boston City Hospital Training School. There are, including two night nurses, ten nurses to look after the patients and the operating room, etc., the expense for salaries and wages alone being \$7,479.48 a year.

The heat, light and power are furnished by the power plant of the Harvard Medical School, which is designed to furnish similar service to all the other hospitals and buildings which shall be attracted toward this medical center.

The expense of running the hospital amounted last year to \$10.79 per week for each patient, which is, of course, a large sum, as the care for such cases is usually computed; but considering the care and attention and food that the patients receive, the cost is very moderate indeed.

After the new hospital had been in satisfactory running order for the space of six months the medical staff renewed their suggestion that an "out-patient" department should be started. They now had the experience that had been acquired by the successful operation during the previous summer of the day camp conducted by the Boston Society for the Relief and Control of Tuberculosis. It seemed to Dr. Joslin and myself that the expensive plant which was in fine running order could extend its sphere of usefulness greatly at a very small additional cost. The managers generously agreed to try the experiment, even though it necessitated some alterations in the new building to arrange for a dining-room for the out-patients and a separate sink at which their dishes could be washed.

A portable house was purchased which was put up on the south side of the main building and away from the street. This is screened thoroughly on three sides and can be used if the mosquitoes are too thick for comfort or in case of a sudden shower or hard storm. But for the most part it serves as a store-house for chairs and blankets, books and clothes, rather than as a sitting-room. In the stormy days of winter, in case of disagreeable winds, the patients sit upon a cement platform beneath the balcony of the main building, where they are protected on three sides from the weather but having fresh air and sunshine from the open southern exposure. Here there is room for 25 steamer chairs in a row. Whenever

the weather is at all suitable, however, the patients bring their chairs into the open and away from the buildings. During the hot days of the summer the patients move to the eastern end of the building for the sake of the shade. Harvard College has also kindly given the use of some unoccupied ground immediately behind the main building of the hospital on which there are some trees. This is very helpful, as in the summer there is an uneasiness among the patients caused by the heat that can only be alleviated by the possibility of a change in location. In the colder months the patients are contented to stay perfectly quiet in their chairs.

In May, 1906, Dr. Floyd started his day camp limited in numbers to 10 patients. The managers soon allowed him to increase his number to 15, and finding that the expense was not going to be overwhelming, in August allowed him to increase to 25. This is practically the whole number that can be accommodated on the grounds and in the dining-room or can be cared for effectively by a single nurse. It will be seen that by August, 1906, the capacity of the hospital for good had been increased over 60%, as we shall see later, at a very small additional cost.

The regimen of the patients is as follows:

At about 9 A.M. they begin to assemble, coming from their homes in electric cars if they do not live within short walking distance. The nurse is on hand to receive them and hear the report of the night and of affairs at home. She takes and records their temperatures, and helps them, if necessary, with their chairs, wraps, etc. A little after 10 o'clock they go to their dining-room where they have all the bread and milk they can eat, and in many instances it is fully 30 to 40 oz. of milk and several slices of bread. Eggs are added to this lunch in less rather than in greater amount according to the time of year and their expense. They then return to their chairs and remain quietly until 12.30, when they re-assemble for their dinner, which is the regular house dinner, meat or fish, potatoes and another vegetable, and some light pudding, with milk and bread and butter. In some cases an ounce of cotton seed or olive oil is added. For some reason or other the patients cannot be made to enthuse over cotton-seed oil, which others seem to have no trouble in administering to their patients.

Again the patients return to their wraps and chairs or the grass and shade of the trees. Two hours after dinner is a quiet time and no talking is allowed so that any may sleep that wish to do so. At 4 P.M. they are again assembled for another lunch of bread and butter and milk, and between five and six, according to the time of year, they return to their homes.

It is expected that all the patients, in addition to the food received at the hospital, have a breakfast and supper at home, and for the most part this is done; some, however, we fear, get very little besides what they receive from us.

The nurse is on duty all through the day and oversees the patients at their meals, takes note of

those who are not eating well — and later interviews such to see what is the cause. It is part of her business to gain the confidence of the patients, so that they will tell her of their home worries, of their financial difficulties, about their husbands, children or lovers, as the case may be. At the weighing time, which comes for each patient once a week, the nurse is able to inspect the garments of the patients — for they are undressed and weighed in a sheet — and make sure that they are properly clothed. She sees that all who have not bathing facilities at home are tubbed and scrubbed at least once a week. Further they are taught cleanliness of person, and care and protection of those about them, and especially care of their mouths when coughing. Each patient carries on her arm a blue linen bag containing, within, a smaller waterproof bag, and also some sheets of tissue paper, which are used to protect the mouth when coughing, to receive the sputum, which is then placed within the waterproof bag. The papers containing the expectoration are burned each night, and the inner bags are washed in carbolic from time to time. This form of bag has been devised because few women have pockets in which a paper bag can be carried, and it has been found that they will not carry about a paper bag in their hands.

On Sundays the patients remain with their friends and families, and the nurse makes visits to the homes, sees where the patients live and sleep, sees the family who are there assembled, and is therefore able to make a report to the physician as to the home conditions. This inspection of the home and families is of great importance. Sometimes it is repeated on successive Sundays until conditions are made satisfactory, sometimes the conditions are so good that no further visits are necessary. But it is expected that a visit shall be made on every one about once in six weeks after the routine has been established. It goes without saying that this visiting requires tact on the part of the nurse, and not every one, no matter how skillful in the wards in the care of the sick, has the ability to gain the confidence of the patient and become her friend and that of the family as well. As the result of her visit or visits the nurse fills out a report which is filed in the records.

The physician calls each day, hears the report of the nurse, talks to the patients, and makes physical examination of one or more as the case may be, so that there shall be proper records of each case and that he shall have personal knowledge of the pulmonary changes from week to week. Practically all the medication is in the form of rest, food and fresh air. Heroin or codein is used if the cough is distressing, though in small quantities. Tuberculin is used in a number of cases both for diagnosis and for treatment.

The total number of patients treated since we started has been 71, and these have been given 5,900 days of treatment. These patients would be classified as follows: 1st, incipient, 8; 2d, well marked, 29; 3d, advanced, 34.

Of these there have been discharged: Arrested,

10; improved, 4, who went to Rutland, as home surroundings were unfavorable; relieved, 2 non-tuberculous, showing signs of consolidation, but proved to be chronic influenza by sputum and negative tuberculin test; unrelieved, 30, of whom 6 had died; under treatment, 25.

The 10 discharged arrested were under treatment for periods of time varying from three to eight months. Of these 10, only one was from the group of incipient cases and the others from the well-marked group. Since discharge these patients have been required to report to the Samaritan at least once every two weeks in order that there should be no undiscovered relapse. All are doing well and are steadily gaining in weight. Some of them have returned, unfortunately, to their former employment where the disease was contracted, four are taking complete care of their homes and one or two have returned to school or are remaining at home. Of the four improved cases who left us for Rutland two are doing well. One of these was from the incipient and the others from the well-marked class.

Of the cases unrelieved, 7 went to other hospitals, 3 went to Europe having shown no special change, 5 were discharged for insubordination, 5 gave up treatment in from one to six days, and 4 were unable to keep up. The 6 cases who died were all very advanced on admission and the prolongation and comfort of life was all that could be hoped for. Of the 25 cases under treatment at present, all but two advanced cases are doing well and it is expected that 4 will be discharged arrested before the middle of June.

A few striking cases are worthy of mention. A girl of twenty-two years from a poor home and surroundings about four miles from the camp, had well-marked involvement of both apices. The cough was distressing, and expectoration about 3 oz. daily. She began treatment ten months ago, steadily gained weight from the start, and with the constitutional improvement the process rapidly became quiescent. She gained 30 lbs. in six months, her lungs became entirely dry and she was discharged three months ago without a symptom and has remained well since.

A woman of forty years, showing an advanced process involving both lungs, with occasional night sweats and considerable expectoration came under treatment in December, 1906. She could not speak aloud on account of a larynx showing marked swelling and infiltration about arytenoids and false cords. She has gained 27 lbs., her cough consists of a slight attack every morning, her lungs are quiescent, and her voice has almost completely returned. A few weeks will probably add her to our list of arrested cases.

A woman of about twenty-eight years with a cavity in the left upper chest and extensive involvement of the right, after six months' treatment has gained 20 lbs., the general condition shows remarkable improvement, the lungs are rapidly drying up and we hope for cavity contraction.

Complications and emergencies have been very few in number. There have been no severe

hemorrhages on the grounds, and only one patient when at home has had two moderately severe hemorrhages, of about one-half pint of blood each time. One other patient had a slight hemorrhage. Even chills are of rare occurrence, and no cases of pneumo-thorax have occurred. Diarrhea in the summer months and grippe in winter have been the greatest enemies, and while all have been retarded at times by these ailments, only one or two have been seriously affected.

One patient who had an advanced process with a quiescent tuberculous larynx, after five months of treatment gained 20 lbs., cough was dry and the lungs were almost free from râles. The patient caught a severe cold and the quiescent throat flared up. Swallowing became impossible from pain and she died in about four weeks, practically from starvation as the lungs remained quiet. She refused to enter a hospital.

High temperature is not of frequent occurrence, and when it persists the case is required to remain at home for a few days in bed, being visited by the nurse in the meantime until the patient is thought fit to report for treatment. Pregnancy has only complicated conditions in one case and here improvement has been so constant and marked that we hope to escape the almost certain usual termination of this disease following confinement.

Tuberculin has been in constant use both for diagnosis and treatment. We are giving Koch tuberculin T. R. (imported) in about 15 cases once or twice a week. We begin with a dose of .0001 mg. and steadily increase it, avoiding reactions until we reach 1 mg. The arrested cases receive tuberculin weekly when they report. This treatment is only given to selected cases where cavity, fever and hemorrhage are absent. We feel confident that this has benefited not a few cases in quieting tubercular laryngitis and stimulating resistance in cases that improved to a certain point and then remained at a standstill. We have been more ready to allow an arrested case to return to her former employment because fortified with increased resistance by this means.

All the cases are proved to be tubercular by finding tubercle bacilli in the sputum or by the tuberculin reaction. In several cases this latter test has been necessary, and here Koch's old tuberculin in successive doses of .1 to 1 and 10 mg. has been used at intervals of four days. In only two cases have we failed to get a positive reaction where it was required for diagnosis, and these have proved to be cases of chronic influenza.

Our experience has demonstrated that in the climate of Boston an open-air camp can be conducted successfully both winter and summer, spring and fall, — cold and wet and disagreeable days appear to have but little effect upon the attendance. The results of the experiment have been very satisfactory from the clinical side, and it seems that the treatment presents these distinct advantages.

The daily removal from their homes gives the patients a decided mental shake-up. They have the companionship of others, some of whom are

worse off than themselves, they are distinctly doing something to make themselves well — taking the cure in the fresh air — and they are free for the time from the depressing influences and petty annoyances of home environment. The constant presence of the nurse in whom they can confide and talk over their family difficulties is of great assistance, and, at the same time, she deters them from conversation about their symptoms. The daily visits of the doctor, to whom trivial, but to the patient important and perplexing, questions can be referred, all tend to keep up the general morale of the patients. The responsibility for their own actual condition is shifted to the shoulders of the nurse and doctor and not carried in doubt by themselves. On the other hand, the constant supervision of the nurse enables the detection of unfavorable symptoms to be made early, as well as wrong-doing and recklessness. With the wards of the hospital always at hand to help out in cases of emergency, such as the appearance of a sudden rise of temperature, hemorrhage or other unexpected event, there is a sense of security not otherwise felt.

To those who still believe that temperature taking and the daily booking of symptoms are not desirable things for the majority of patients to do, this form of treatment must appeal; while those who think that it is a desirable feature in treatment can add it to the régime.

Many patients cannot be removed from home, and have even a small sum paid for their board without great discomfort to the whole family. In order that the mother may go to a sanatorium often the children have to be put away in "homes" or boarded. By our method the home is kept intact and as soon as possible the patient allowed to participate in the light home work during the mornings and evenings, often to the great advantage of all concerned. The daily education at the hospital is carried back to the homes with the result, we believe, that the other members of the family will lead a much more hygienic life than they otherwise would. The one disadvantage that we can see is that connected with the going to and coming from the hospital. There is necessarily a certain amount of wear and tear upon the patients during this time that is undesirable. To obviate this we are trying to have our patients, as far as possible, from the district immediately about the hospital. When this is accomplished, as it will be in the course of time, the House of the Good Samaritan will become a center for this particular portion of the city; and the ease of administration on the part of the nurse, and the one disadvantage to be urged against the scheme, will be reduced to a minimum.

As to discipline there is very little to say. There are so many applicants that if patients are neglectful and do not come regularly and punctually they are warned that if they persist they will be dropped from the rolls and their places filled by others. Naturally there are a number who come who do not like the restraint and discipline and quickly give up. Some are soon found to be too weak really to undertake the daily

journey, but beg to be allowed to try and in a short time have to remain at their homes or enter other institutions for care and treatment. Most of the cases are, however, selected from patients presenting themselves at the general medical clinic of the Massachusetts General Hospital, where Dr. Floyd is also on duty, and it is here that he is able to make his selection of patients living in the vicinity of the hospital.

Incidentally, I may say that our experiment has aroused no interest among the doctors in the vicinity. When we started our experiment we invited all the doctors of the neighborhood to a tea at the hospital to explain to them our purpose and ask their co-operation, but no one came excepting one or two who were specially identified with the tuberculosis crusade, and had no need to be present, knowing well all about the work beforehand.

At the end of the year it is well to look over our books and consider whether in reality the experiment has been an economic success.

The first cost of the undertaking was defrayed by special gift to the hospital for this purpose, and nearly \$1,000 was spent. With this money the portable house outside was purchased and set up for \$324, and the necessary changes in hospital were made, to provide a new dining-room for the hospital help, and to provide water installation for separate dish-washing in the old dining-room that was to be used by the out-patients. Fencing and grading had to be done. In addition, chairs, blankets, comforters and hot-water bottles had to be purchased. These latter are not expensive and can be used for some time without renewal. These changes are in the way of permanent investment, and should not therefore be put into the general cost of maintenance, for the necessary changes in any other hospital would be entirely different and would depend on the local conditions. The cost of blankets, chairs, etc., depends on the quality. We have used the Allen camp chair, costing \$1.75. It is light, easily handled and comfortable. Gray blankets have cost \$4 per pair. Comforters are also useful in the winter and cost less than \$1. Stone water bottles costing about 25 cents apiece are used, as they keep the heat longer than rubber ones, and do not leak as easily.

At the beginning of the experiment it was not found necessary to employ a special nurse for this service, but as the numbers increased the whole time of one nurse has been required. An additional maid was employed from the first to care for the dishes in the dining-room and assist the cook to serve the meals. These have been the only additions to the administrative staff of the hospital that has been required to care for the 25 patients. The remainder of the expense has been for their food. It is impossible to estimate exactly the cost of this food as a certain part is bought with the general supplies of the hospital — milk, butter, eggs and flour, the principal items, can be told exactly, but vegetables, meats, etc., can only be approximately estimated by comparison with the previous monthly expenses of the hospital.

Milk costs a trifle less than 7 cents per quart. Eggs vary from 50 to 20 cents, and are used accordingly. Butter costs on the average 28 cents. Flour has been \$5.50 to \$6.00 per barrel. The total cost of the experiment for extra service and food for the year has amounted to rather less than \$2,000. For this amount there have been given 5,900 days' treatment, making a cost of 33 cents per day for each patient.

In the beginning, when there were only 6 to 10 patients, the actual cost of the total hospital expenses was less than it had been during the preceding year when the hospital was first opened. This was due to economies that had been introduced during the year. This is only mentioned as it was a great encouragement to the managers to find that the hospital bills rather decreased than increased during the trial period of expansion.

In conclusion, all that remains to be said is that the House of the Good Samaritan has apparently made an experiment which can be adopted by many communities to assist them in solving their local tuberculosis problem. Many towns and cities have small hospitals whose beds cannot from the nature of things be used to care for the cases of tuberculosis of the town or city. In the smaller places practically all the physicians are interested in these hospitals and therefore can co-operate in having a large portion of tuberculous patients who come under their care congregate at the hospital. This real knowledge of the patients and their home surroundings by the physicians themselves is an advantage that the physician of the large city does not possess and for the most part has to learn second-hand through the eyes of his visiting nurse. It is perfectly possible for ways to be devised so that each patient shall return to his or her own physician for treatment or advice, or the work can be delegated to a visiting man, as may be deemed wisest. Those who support the hospital by their contributions can be educated to the need of such a day-sanatorium by lectures and the organization of a committee on tuberculosis and thus still greater interest in the hospital aroused in the community. Such patients as can should pay a small fee for their care at the hospital. It may be possible later either to get a special pavilion built for the care of the very advanced cases of tuberculosis or to get the city authorities to take action and provide beds to which the stigma of pauper is not attached for this much-deserving class of sufferers. To the community having a hospital in active operation that will attempt to follow this experiment we feel that more can be done to help the sufferers from phthisis and at a much less relative cost and trouble than by any other means yet suggested to fight tuberculosis.

MRS. RUSSELL SAGE has given \$125,000 to the Association for the Relief of Respectable Aged Indigent Females in the City of New York. The home of the Association, at 104th Street and Amsterdam Avenue, is being extensively enlarged, and when the addition is completed its capacity will be increased from 90 to 270 beds. — *Medical Record*.

ON NEUROLOGICAL AND PSYCHIATRIC DIAGNOSIS.*

BY LEWELLYS F. BARKER, M.D., BALTIMORE.

ON taking up the subject allotted to me, "The Historical Development and Relative Value of Laboratory and Clinical Methods in Diagnosis, with Especial Reference to Neurological and Psychiatric Diagnosis," I must confess to have experienced some difficulty in deciding how to treat it. It was not entirely clear to me how sharply to separate clinical from laboratory methods.

If one means by a clinical method a procedure which is carried out at the bedside of the patient and by a laboratory method one which is applied in a room, building or workshop, especially fitted with suitable apparatus for conducting investigations in diagnosis, he is making a distinction where there is not always a difference, for the bed-room, at any rate in hospitals, is a room so fitted and is a laboratory. If by laboratory methods are meant those which cannot be applied at the bedside, then we have relatively few laboratory methods of diagnosis in neurology and psychiatry, though the recent development of biological reactions and complex metabolic studies give promise of more in the near future. Most physical, chemical and psychological methods of diagnosis can be used at the bedside, though it is not always convenient to use them there. Or if by laboratory methods we mean methods which are generally or more conveniently used in special rooms not occupied as the bed-room of the patient, then the field of laboratory diagnosis is wider, especially if instead of limiting the examinations in these rooms to the study of materials removed from the patient we take the patient himself there, as we often do, for the making of certain tests. But if the patient himself is removed to the laboratory for examination, the physician is at his side, and the method remains clinical. Thus it is obvious that bed-rooms are used as laboratories, and that laboratories are used for clinical work, and no sharp line can be drawn between the work and methods of the two places.

Nor is it feasible to distinguish clinical methods as methods of simple observation from laboratory methods as methods of experiment. For we make relatively few observations that are simple, unaided registrations of sense-impressions. On the contrary, the great mass of so-called clinical observations are observations under particular conditions modified at the will of the observer; that is to say, are experiments. Moreover, in all our clinical work — in the collection of facts, in the arranging of them, and in drawing inferences from them — the results of researches in laboratories are continually being utilized. Our observations, our arrangements of facts in sequence, and our conclusions are practically all based upon knowledge which at one time or another has been gained in special laboratories.

Thus while there are clinical methods in neu-

* Read before the Congress of American Physicians and Surgeons in Washington, May, 1907.