

THE HOSPITAL IN RELATION TO
MEDICAL SCIENCE*WILLIAM H. WELCH, M.D.
BALTIMORE

The formation of a section to be devoted to the consideration of hospital problems is to be welcomed as meeting a real need of the profession. Hospitals have played an important part in the past and are destined to play a much greater one in the future in the advancement of medical science and art and in the promotion of medical education. In recent years they have assumed interesting and significant sociologic functions, and it is possible that it may hereafter be deemed wise to add the subject of medical sociology to the title and functions of this section. Certainly there should be some section in which this important subject may receive proper consideration, and it does not seem desirable to multiply the sections of the Association more than is absolutely necessary.

The various activities of the hospital may be classified as humanitarian, scientific and educational. Although included in the foregoing, it may be well to specify also the sociologic activities. The most widely useful hospitals are those which recognize and give their proper share to each of these functions.

The position held by the superintendents of many of our hospitals is, I believe, peculiar to American hospitals. This position is one of much larger influence and authority and of more varied functions, not only on the administrative but also on the professional side, than any corresponding one in European hospitals. As a rule the superintendent comes into much closer relations with the trustees or managers of the hospital than do members of the professional staff. His opportunities and power for good, as well as for harm, are very great. For the position of hospital superintendent, as it has developed in this country, at least in the larger general hospitals, it seems to me most desirable that a medical man of good administrative capacity should be chosen. The career has become a highly specialized and in many respects an attractive one. A medical superintendent should be the one most likely to appreciate and further the needs of medical science and education.

The care of the sick and injured is the primary and essential purpose of a hospital. The welfare of the patient should always receive the first consideration. The plea for scientific and educational uses of a hospital could not be justified if it could be shown that such uses interfered with the patient's welfare. As a matter of fact, however, one of the strongest supports for this plea is the demonstration, based on experience and sound argument, that the interests of patients are best served in hospitals which likewise recognize fully the needs of medical education and of scientific research. The best and most famous hospitals are of this character, and such hospitals serve the community more broadly and effectively than institutions which limit their activities merely to the care of patients.

The most urgent problems of medical education to-day relate to the teaching of the clinical subjects. It is the so-called theoretical or laboratory subjects which are now taught most practically, whereas the practical branches are taught most theoretically. In the past, hospitals and medical schools have developed in this country for the most part quite independently of each

other, and as a result it has become a matter of great difficulty to bring them together in some such relation as that existing in Germany between university and hospital. The need of such affiliation is now widely recognized and efforts to solve this perplexing problem have in some instances met encouraging success. The solution does not in general lie in the direction of universities securing hospitals of their own, although they are fortunate if they possess them, but rather in the establishment of the proper relations between the universities and municipal or privately supported hospitals, whereby such hospitals can be made freely available for the training of students and physicians and the cultivation of scientific medicine.

We can scarcely point to-day to the existence in this country of great medical and surgical clinics comparable to those of most German universities, nor shall we have them before there has been considerable reorganization of the professional service in most of the teaching hospitals and until we recognize that the head of such a clinic cannot conduct it properly as a mere incident of a busy outside practice. It is a curious fact that, whereas every other branch of the medical sciences has now assumed the position of a science to be cultivated by those devoting their lives to the subject, clinical medicine, the main trunk from which all these branches have sprung and the most important of all the medical sciences, has not yet assumed this rank of an independent science requiring for its cultivation and teaching the single-hearted devotion of those who pursue it.

The heads of the departments of medicine and surgery in the university should of course be the heads of the corresponding clinics or services in the hospital, and in my judgment these positions should go to those who are willing to give most of their time to the care of patients within the hospital, to teaching and to the supervision or conduct of investigations relating to their science and art. They should be provided also with a resident staff superior to the ordinary interns and comparable to assistants in laboratories, who are appointed for longer periods and are in training for academic careers or the higher walks of medicine. Under such a system the hospital and the patients will be better served, medical education will be improved, and the art and science of medicine will be advanced far more than under the prevailing conditions. It is not enough that we should ask ourselves whether our medical schools and hospitals turn out as good doctors as those of Europe; we should also inquire whether they are contributing their share to the world's progress in the art and science of medicine. The problems of clinical medicine are of an interest and importance surpassing those of any other branch of medical science. For their solution the hospital ward should be the laboratory, but at present the organization of work in the ward bears so little resemblance to that of a scientific laboratory that a comparison between the two is only misleading.

A tendency at the present time to separate scientific research from the work of teaching has certain advantages, but has, I believe, even greater dangers. Scientific investigation in medicine during the last three decades has led to results of such vast importance as regards our power over disease that this makes an appeal to the public and to philanthropists much stronger than does medical education. Hence it is that large funds are available for institutes of research and for research hospitals which have no connection with education. Hospitals are often more eager to contribute to scientific medicine than to participate in the work of medical edu-

* Remarks made by invitation at the opening of the Section on Hospitals of the American Medical Association at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

cation, and in a number of instances have been provided with funds and laboratories intended solely for scientific research. While there is room for such independent endowments and institutions, the roots of fruitful scientific work lie in the educational system, and if the latter is neglected, the former will suffer. The traditional home and the most favorable environment for productive research is the university, and hospitals in affiliation with universities offer, I believe, the best opportunities for the promotion of medical science and art. Above all the teacher should also be an investigator.

The provision of laboratory equipment has become a necessity of the modern hospital. Modern methods of diagnosis require in ever-increasing measure trained experts and the necessary rooms and equipment for biologic, physical and chemical diagnostic procedures. Development along these lines has greatly improved the quality, both scientific and practical, of the work of our hospitals, and leads naturally to the desire to combine scientific investigation of the problems of disease with the practical aims of the hospital. This is a line of progress which should be encouraged by our hospitals, and which increases the service of the hospital to the profession and the public.

I think that a special plea is needed at present for the cultivation of pathologic anatomy, which has not, as some seem to suppose, exhausted its possibilities of usefulness in the advancement of scientific medicine. It is not necessary to decry the value of experimental and physiologic methods in order to give to pathologic anatomy its proper place in the study of the problems of disease. Every effort should be made to secure post-mortem examinations of those who die in hospitals, and in my experience such efforts, if properly made, are generally successful. Both hospitals and the public—I might add, even the profession—should be educated to a realization of the importance of such examinations, so that they are understood to be a matter of course in the conduct of the hospital.

Although but little appreciated as yet by the community, medicine is destined to play a leading part in the solution of many of the industrial, economic and social problems of the world, and in these newer activities, to which I referred at the beginning as sociologic, there is a place for the helpful cooperation of our hospitals; but I must leave this aspect of the subject to your consideration with this bare mention.

In conclusion, permit me to express my best wishes for the success of this new section, which opens with a program indicative of much useful work.

A CLINICAL VIEW OF THE SPECIAL DIET*

HORACE D. ARNOLD, M.D.
BOSTON

The average hospital to-day is inadequately equipped to feed patients properly according to modern dietetic principles. The chief fault lies with the medical staff rather than with the administrative department of the hospital.

These are sweeping statements, but I believe they are justified. If true, the statements should not be interpreted as indicating neglect of patients, either on the

part of the institution or on the part of the members of the staff, but merely as evidence of the fact that scientific dietetics is a subject of recent development with which the profession at large is not yet thoroughly familiar. But these principles are now known, and the time is not far distant when the hospital or the physician who feeds patients in the old way will justly be accused of neglect.

Up to a short time ago the feeding of patients was a matter of empiricism. By experience we found that certain articles of food disagreed with patients suffering from a given disease. Such articles were forbidden in that disease. Likewise we recommended certain articles of food because some patients had done well on them. Thus were developed a set of empirical rules, very general and indefinite in character; the diet was ordered according to the name of the disease, with little consideration for the needs of the individual patient; the rest was left largely to the judgment of the nurse or to the appetite of the patient. We did not bother ourselves with the composition of food, nor with its nutritive value. We may have tried to look up the word "protein" in the medical dictionary, and failed to find it. Perhaps we wondered if a calorie was not some article of food used by the French, instead of a convenient unit for measuring the nutritive value of foods.

Many physicians of middle age or older, even of such eminence that they are on hospital staffs, are asking these or similar questions to-day. Worse still, many of them are not sufficiently wide-awake to ask the questions at all. As the older men commonly direct the action of the staff, it is but natural that the staff has not, as a rule, been very active in advocating reform in this direction. There have been, of course, notable exceptions, but I am speaking of the average hospital of the country. It is interesting to observe that in some instances in which improved methods have been adopted the initiative has come from the trustees, chiefly laymen, who were forced into the consideration of possible economies by the increased cost of food-supplies.

While perhaps it is too early to attach definite blame to the medical staff for its indifference, the profession can take little credit to itself for what has been accomplished so far in this direction. As the feeding of patients is properly an important part of the treatment of all patients, and is essentially the whole treatment of a considerable number, it should be the duty of the medical staff to see that the hospital dietary is placed on a satisfactory basis. Because of this obligation it seems to me that the staff, rather than the management of the hospital, is responsible for the present unsatisfactory state of affairs.

Any discussion of a satisfactory diet at the present time must take account of its nutritive value, as expressed in calories, and of its content of the three nutritive constituents or foodstuffs—protein, fats and carbohydrates. For ease in calculation it is better to express the amounts of these foodstuffs in grams. Even the general or "house" diet—designed for the average patient during recovery from accident or operation or during convalescence from disease—should be estimated and planned in this way.

The limits of this paper will not allow a description of the methods by which these calculations are made, or a discussion of the reasons for the standard here suggested. For an average patient in bed the standard for a "house" diet may be placed at the following daily amounts: protein, 100 gm.; fats, 80 gm.; and carbohydrates, 300 gm., furnishing approximately 2,300 calories. By means of suitable tables on the composition

* Read in the Symposium on Relation of the Hospital to the Physician in the Section on Hospitals of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.