

subject. Science has been back of the march of medicine, and science has also made a complete transformation in the environment in which our people live. Science has not only changed the speed with which we go from place to place, and the way in which we light our homes; but it has compelled a reorientation of our hereditary thought processes in connection with religion and human conduct. Astronomy and geology have changed the mental attitudes of millions. Individually and in the mass we lack anchorage. This has given us a sense of insecurity, increased our difficulties in the domain of the mind and helped to fill our psychiatric institutions. In some ways many of the people of practically all the nations of the earth seem to be a little crazy at the present time. There could well be developed a better hygiene for world international relations. At any rate there is a good place for sound medicine and the stable sane doctor to guide not only the individual in the care of his body and his protection from disease, and the community in its various quarantine and other public health measures, but to assist in the broad understanding of human relations.

The medical school, too, now faces the problem of how it should handle the question of what is called "social medicine." The development of the social service, the increasing costs of hospitals, the changes from rural life to city life and a thousand other forces have impinged upon the whole easy, rather shabby organization of medicine with its illy defined relationships of the financial responsibility of doctor and nurse to the patient and to various governmental units. Since it is inevitable that there will be many social and economic changes in the future, the medical school must give the young physician the opportunity of knowing just what the forces are that lead to change. Unless he is trained to accept leadership in the field of the relationship of medicine to our economic life, he will be compelled by inevitable developments to take a secondary position—when he *should* lead, and where his help is vital if an adequate solution is to be discovered.

The medical schools of the country have for the most part been brought under the wings of the university by the simple and necessary process of evolution. The preliminary requirements for the study of medicine have naturally fallen to the universities. The laboratory led to the capture of the medical school by the universities. The broader training now required for the modern physician means that at least some of those who are going into medicine must not only understand biology but also anthropology and eugenics. Likewise they must have knowledge of sociology, including a broad consideration of man's environment. Modern physiology has developed relationships to chemistry and physics that require years of training if we are adequately to understand such questions as diet and nutrition and to treat many diseases. Almost any solid work is good preparation for medicine, since mental training is more important than the details of any subject learned. A usable mind that is disciplined can do the work; but it must be adjustable and have a good "universal joint" to meet the wide responsibilities entailed in the care of the sick.

It has been a difficult task to select some of the scientific and social subjects that are the core of the work which we call the medical curriculum. Even when this curriculum is once selected it can not be allowed to become static. Each year modifications must be met. The medical curriculum must not only be kept alive, but it must be modified with the same rapidity with which medicine grows.

There is no ease in the march of medicine. Thousands of ardent workers are pushing out into new fields; lives are to be saved, pain relieved. To keep the doctor up to date and bring the medical student abreast by the selected information he needs is both the function and the duty of such organizations as this. It is a delight to take part in seeing the city of Syracuse and this part of the state give support to such a medical center as we now have as a national possession in the College of Medicine of the University of Syracuse.

## THE FRUITION OF THE CLINICIAN<sup>1</sup>

By Dr. HENRY A. CHRISTIAN

HARVARD MEDICAL SCHOOL

To you, Chancellor Graham; to you, Dean Weiskotten; to you, members of the Faculty of Medicine of Syracuse University; to you, students and graduates of this School of Medicine and to you, friends of Syracuse University and its School of Medicine here

<sup>1</sup> Address at the dedication of the Syracuse University College of Medicine building, November 22, 1937.

assembled, I give greetings for and from the medical profession.

This splendid building to house your medical school, that to-day you dedicate, is one of a group which in the years to come will provide the soil whence will grow in varying perfection plants that will bear fruit of different sorts and of different qualities. The better

this foundation soil, the better will be the product. The spirit of those who here in this building will tend the beginnings of these plants more than anything else will determine the quality of the final fruit; these buildings will fail of their purpose unless into them are gathered men who from the beginning can inculcate into the students, who gather here, the will to reach the highest possible level of attainment in whatever branch of medicine they may select for their life work.

I would say to you, who have the selection, see to it that only men of the highest quality are chosen to fill your posts; select young men of great potential force, character and ability and see to it that nothing hinders their continued progressive development; by and large the young man of fine possibilities will accomplish far more in nurturing the proper spirit among your students than will the older man of proved merit but waning enthusiasm; provide a way for the early translation of your professors into other paths of usefulness that they may not block the rapid advancement of your young men.

From the soil here provided will grow a variety of plants and you of the school will watch with eager solicitude their fruition. To-day I will consider in the remaining time allotted to me the growth, development and final fruition of one of these, the clinician; I will address myself chiefly to the young generations, medical students, hospital internes and beginning practitioners of medicine.

You, young men, stand now at the entrance way to a pleasant path, which you will follow in its winding course throughout your professional life, a path leading toward the goal of attainment, which is the aim of almost all of you, your fruition into a finished clinician, the highest attainment of a medical career. The path is a long one, over which you can not race. As it meanders along, the turnings of your path may be abrupt; what is just around the corner always is uncertain; haste will close vistas that open before you now on this side, now on that, vistas which bring enlightenment to the clinician. Year by year you will follow such a path until a day will come, some fifteen or twenty years hence, when suddenly from some elevated point you catch a glimpse of broad expanses of hill and dale and plain with snow-capped peaks in the distance; until this panoramic view comes before your eye, you have not developed into a real clinician.

The studies which now you pursue in the medical school lay a broad foundation on which in later years you can build. Your curriculum has been wisely selected by men, who themselves have trod the path and so know what sort of a foundation you will need as a basis for a development into those qualities of mind and soul that make the clinician. However, remember that, with all diligence in learning, within

the medical school course you can but plant the roots. When you complete this course and are pronounced graduates in medicine, you are very far from being clinicians, perhaps actually not very much nearer that goal than when you graduated from college, though far better fitted now to take the necessary next step.

The important next step is securing an internship in a well-equipped hospital possessed of a staff of able clinicians who spend much time within the hospital in the study of patients. What information should you seek in determining the hospital for your internship? I would suggest the following: (1) The ratio of patients to house officers; this should be small, for too many patients make impossible that careful study of each patient that is essential to the best development of the interne; each patient carelessly studied adds a deteriorating influence on the interne; hospitals commonly have too many patients in proportion to the number of house officers; I know of no hospital in which there are too few. (2) The ratio of autopsies to deaths; the most desirable hospital for internships is one in which the autopsies are 50 per cent. or more of the deaths; a percentage of 25 per cent. may be regarded as the minimal requirement to constitute a hospital as being desirable for an internship; without an autopsy soon the physician may acquire a false certainty of his diagnostic ability that will be fatal to progress. (3) A senior visiting staff that daily spends considerable time in the wards examining patients and dictating notes of their findings with comments on the probable diagnosis; remember that for surgeons, time spent in the operating room is not a satisfactory substitute for time spent in the examination of new patients; the visiting physician or surgeon too busy to spend time in the wards is a liability to the hospital. (4) The positions held by previous internes of the hospital; the attainments of past internes is a safe measure of the quality of the training offered by the hospital; curiously, few hospitals in any way make this knowledge available to prospective internes. (5) A hospital that has a super-interne staff of assistant residents and residents. (6) Absence of salary; do not select a hospital that offers you a salary; a salaried internship rarely is one to seek; salaries for internes usually indicate a lack of educational opportunities in the hospital; salaries mean that the hospital knows it has not enough to offer to attract internes, and the salary is a sort of hush money to conceal this fact. (7) A long rotating service or a shorter, straight service in medicine or surgery; never a service in a specialty except after completion of a general service.

After completion of an internship, further residence in a hospital in some capacity should be sought. If one expects to qualify before one of these newer boards of certification this becomes a necessity. A

minimum of two years of this type of super-interne service should be taken. Perhaps one of the greatest influences in sound post-graduate education in clinical medicine and surgery at present lies in what is represented by the positions of assistant resident and resident in our hospitals. Men holding these posts teach much of great value to the internes, while they themselves are learning much of the greatest importance in their subsequent development.

At some time in his training the prospective clinician should spend one or two years in one of the laboratories of the medical sciences. A position combining opportunity for teaching students with investigation is very ideal. Just which of the medical sciences is followed is relatively unimportant, though personally I believe pathology offers the best preparation for the future clinician.

It may not be possible for every student to have as much training as I have outlined. He should have as much as possible, planned in general along the lines indicated. With this completed, then the prospective clinician has been thoroughly grounded in the fundamental knowledge that he will need. From now on, all will depend on his own effort. How the man daily carries on the clinical work that comes to him determines what sort of a clinician eventually will he become. It is very important that he should record ample histories and full notes on the physical examination of his patients. To depend on memory is notoriously untrustworthy. Many a tragedy of bad treatment has resulted from a failure to make notes. With such a foundation, as I have suggested, each patient whether in hospital or home, can be studied just as thoroughly as is possible to any one.

So far I have said nothing about reading. To-day often the complaint is made that so much is published that one can not keep up with it. This is but the excuse of the lazy. It is surprising how little daily reading is needed to keep one well informed in medical literature. Books and journals are necessary to the making of a clinician. Etymologically, clinician appears to mean he who sits by a bed, but the meaning of clinician, as we understand it to-day, has greatly broadened from that early meaning. Assuredly he, who merely sits, will never become a real clinician, and yet hours by the bedside of patients is a necessary part of the training of the clinician but not hours of merely passive sitting. Observation by the bedside reveals more and more in proportion to the observer's knowledge of the observations of other clinicians as recorded in books and journals. The developing clinician needs to record carefully, accurately, in great detail what he observes and then to check his observations with those recorded in medical literature. A good way to do is to observe your patient, then read

all you can find about the things you have observed and finally reobserve your patient in light of what you have read.

Clinical work, though it entails years of training before one becomes an accomplished clinician, is never a dull existence. There is ever in medical work that uncertainty of what is just around the corner that makes of exploration and investigation a great appeal to men. Each new patient is like the uncharted sea or the unmapped land; in advance it is not known what is to be revealed. The new patient may present phenomena never before witnessed by you, perhaps never before described by any medical man in all time. New diseases still are being discovered, new methods of treating them are being developed, but the new is not appreciated by the physician of small experience, not cognizant of what already has been written in medical literature. The more one knows, the more one sees that is new; the greater the experience and the learning of the clinician, the greater his pleasure in his work.

Just how long it takes to make a clinician obviously varies with the industry and ability of the individual. However, fifteen to twenty years after graduation seems to me a reasonable period of time to set as the minimum for development into a clinician. My experience has been that there is at about that time a rather abrupt change in your medical mental attitude, marking the time when one first realizes that he has acquired certain powers that go to make up a developed clinician. Quite suddenly a certain vision is acquired that enables you to see in patients relations of things that hitherto have been missed. Prior to this time this power has been lacking. Not until it is acquired can you be considered a developed clinician.

Fifteen or more years seem to you now a very long period of time, but little do you realize how rapidly these years will speed by. Your pathway to the ultimate goal of your medical development is a pleasing one. Many pleasures await you as you tread this path. There is the consciousness of a developing knowledge of medicine. There are happy associations with colleagues and patients. There is the satisfaction of a task being well done. There is the reward of an earned income more than sufficient to meet your actual needs in life. Your influence on patients and associates can be of great usefulness. There is the pleasure of doing your part in the community life that surrounds you. As you go along, you can by your work contribute to the store of medical literature observations that will be helpful to other physicians and surgeons. Finally, when you have attained your goal of becoming a clinician, all these rewards of your work will continue with an ever-growing increment, and there will be added the very great satisfaction of being

able wisely to guide younger men along their path of development. As the years go on, diligence in following the path you have chosen increasingly will have its reward in bringing you closer and closer to the goal of your endeavor, fruition into a perfected clinician.

Do not gather from what I have said that medicine and its practice is all a matter of mind. Much, too, of its success lies in its soul. The medical man should be an exemplar in his community of the worthy life. His dealings all must be upright and honest. He must be fearless to espouse the right; his habits free from criticism. He will need the support of a true religion. A simple faith in God and his ways should emanate from all true physicians. If he believes not, this will not be possible. The believing physician often can bring into perfection a cure not otherwise attainable. There is no place in the profession of medicine for the agnostic, the atheist. Man needs a religion and particularly when he is sick. Religion is not a matter of form but of simple faith. With it physician and patient meet the trials of life and ill health with chin up and a winning smile. I would say to all of you and especially to you, young men, have a religion of faith and belief; it will help you over many a hard place.

As one who for nearly forty years has been following this path toward fruition into a finished clinician, I welcome you to the joys of its meanderings. To me the journey has been a very happy one. I have never

held in high regard the medical man who constantly tells of how hard he works rather than speaking of the joy he gets from his work. I have enjoyed a simple faith in God. I look back in memory on many pleasing vistas, on meetings with delightful companions, on friendly helpful guidance and inspiration from men of great attainment in our profession who were treading the same path in advance of me and on the opportunity of giving a helping hand to a splendid group of younger men, to whom it has been my good fortune as their chief to be a guide as they in their turn have entered on the beginnings of this clinical path. For me there are not many more turnings in the path to take. At the end of next academic year my active steps along the path will end, and I will retire from active medical work to watch the way of those coming after me, joyous that I have had the pleasures of pursuing the path that leads to fruition into a clinician. Many of you, doubtless, will get farther along the way, but none, I am sure, will find more happiness in it than have I. I can do no more than wish that each of you will have such happiness in treading the pathway as has been my lot, blessed with guidance from notable teachers, in contact with delightful colleagues and looking back on a succession of eager, capable pupils in the pursuit of their goal of a clinical fruition. I say unto you: the life of the clinician verily is a happy one.

## OBITUARY

### GEORGE ELLERY HALE

GEORGE ELLERY HALE died at Pasadena at 1:30 o'clock on the afternoon of Monday, February 21, as the final result of a nervous collapse which had completely incapacitated him since the summer of 1936. In the words of Harlow Shapley, "All astronomers of the world join in mourning the passing of the greatest builder of American astronomy." But the mere tribute of astronomers will not fully satisfy those who worked with George Hale in the upbuilding of the National Academy of Sciences, in the establishment of the National Research Council, in the starting of the *Astrophysical Journal*, in the founding of the Yerkes Observatory, in the building of the Mount Wilson Observatory of the Carnegie Institution of Washington, in the development of the California Institute of Technology, in the promotion of the Huntington Library and Art Gallery, in the organization of the Pasadena City Planning Commission, in the creation of the plans for and the construction of the 200-inch telescope which in a few years will be exploring the far reaches of the universe from the top of Palomar Mountain, 93 miles southeast of Mount Wilson.

The mere enumeration of these projects illustrates

the ceaseless activity, the extraordinary versatility, the prodigious energy of the man. He suffered no end of mental torture because of his endowment of an exceedingly active and inquiring mind and a relatively frail body. A born leader, a consummate promoter, a conscientious, painstaking and devoted scientist, he worshipped first and foremost, from early youth up to the very end, the goddess of scientific research, but he added to that love and devotion a very keen sense of his public responsibility. He was conscious of his own powers as a promoter and organizer of research, and he deliberately kept at it, although he knew full well that his body would probably break down under the strain, as it actually did. But he never let his promoting activities divert him from his individual research enterprises. The discovery of magnetic fields in sun-spots and of the general magnetic field of the sun are his most well-known personal contributions, and the way he worked during the last five years of his life to verify this last effect, which is so small as to be almost outside the limits of measurement, was a marvel to all his friends. That the very recent plate measurements by a new technique check so well the earlier work which gave rise to the announcement of the exist-