The Resident and Neurosurgery

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THE fact that the chairmen (or their designates) of 94 of the 95 approved residency training programs in neurological surgery in the United States and Canada are here today attests to the seriousness with which we take our responsibility to the resident and to the extent which we are aware of the need to take stock at this time. As I began to prepare this paper, I looked through the literature for factual information, I spoke with program directors for a consensus, I listened to residents for suggestions. However, it soon became apparent that there are no facts, there is no consensus, there are suggestions, but without plans. Consequently, I shall present to you, my colleagues, my own thoughts, as opinions, the thoughts of just one person, just one program director. These thoughts will be expressed as questions concerning the resident, neurosurgery, the university. I shall present no answers since I have none, and I shall resist the temptation to formulate theories. The optimism which permeates the soul of every neurosurgeon will not be repressed, and so, I shall have some hopes to offer. There can be little doubt but that the perspective which the resident has of neurosurgery is quite different from that which neurosurgery has of him. He sees general neurosurgery as being highly disciplined, completely compartmentalized, intellectually and technically well within his grasp. Early in his training he superimposes the figure of a teacher onto that of a practitioner, seeing the entire field as one in which teaching and learning are experiences common both to the professor and to the resident. The acquisition of technical skills, accepted initially as a challenge soon becomes a privilege and then, all too quickly, a right, as accomplishment and excellence become identified with the performance of what is currently considered the most difficult of operations, whether it be the resection of a meningioma, the removal of an angle tumor (without sacrificing the seventh nerve), the clipping of an aneurysm. Time spent in the laboratory whets his appetite for investigative work, and contact with medical students, interns and junior residents exposes him to the experiences of the teacher. The resident is well on his way to becoming a neurosurgeon, to completing his training, and to entering his chosen professional world. By the time this occurs the process of natural selection has funneled most residents off into private practice, many into institutional neurosurgery, some into an investigative career, and a few into the ethereal world of academic neurosurgery. No goals have, as yet, been defined by the resident, by the program director, or by the university. No consideration has, as yet, been taken of man-power needs or individual aptitude. No relationship has, as yet, been struck between the training which the resident has received and the role which he will fill in the neurological world or the manner in which he will serve the needs of his society.

As we define our goals for the education of a neurosurgeon, we must look to the neurological needs of our society, to the neurosurgeon's responsibilities to his patients and students, to the obligation which each practicing physician has to become competent in all phases of his field of activity, to the aptitudes and desires of the individual resident, independent of the service needs of the parent institution. We must look upon the resident as a postgraduate student, for this is what he is. I find it particularly fitting that the leitmotif for this talk is specialization, as it pertains to the resident and neurosurgery, since he, the resident, is a very special person, and, when successful, his relations with
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his chief are very special indeed. They are often life long, and they go beyond the learning situation.

Some of the very pressing questions demanding answers at this time concern neurosurgery itself. Specifically, what comprises the field of neurological surgery today? What areas within this field are developing, and what areas are passing into oblivion? What effect does the administrative position of neurological surgery in universities and hospitals have upon the resident, upon his access to patients and facilities? Is each neurosurgeon, each program director, each training program necessarily able to offer all things to all residents . . . should they? Apparently not, for there is pressure being exerted to institute change in the form, content, and duration of graduate educational programs in the medical and surgical specialties. This comes from medical students and the Council on Academic Societies today, and will come from the resident and the neurosurgical training programs tomorrow.

Presently, we are engaged in the task of defining our goals for the education of a neurosurgeon. Major consideration will be given to the identification of the field of neurological surgery and the specialties within it, to an evaluation of the surface and in-depth knowledge (cognitive and technical) which the neurosurgical resident must acquire in his field of activity.

The development of areas of primary activity (specialization) within the field of neurological surgery may be compared with those which occurred within the field of general surgery during the first 50 years of this century, so that now men are concentrating their activities within limited, well defined areas. The trend towards institutional (full time) medicine, with the creation of centers as in the Veterans Administration system, such legislation as Titles 18 and 19, the ever increasing need of special equipment and facilities to treat special problems, the success of the clinic type of practice, cause us to focus our attention upon specialization within our field. Today, the neurosurgeon considers accessible to his theoretical and technical competence everything within the confines of what I shall, for the sake of clarity, refer to as general neurosurgery. His training prepared him to diagnose and treat all surgical diseases of the central nervous system, and provide him with the theoretical background to understand the anatomical, physiological and pathological ramifications of the disease and its treatment. His certification by the American Board of Neurological Surgery attests both to his having satisfactorily completed this training and passed an examination designed to measure his competence in the field: If seen in perspective, the residency program and the Board Examination occur as integral parts of the development and recognition of the professional capabilities of today's neurosurgeon.

However, both neurosurgery and the neurosurgeon are continually undergoing change, as social and scientific progress are realized. The elimination of charity institutions dedicated to the care of the indigent, the organization of research and clinical centers for the study and treatment of special disease problems, an ever increasing number of full time neurosurgeons, and an almost unbelievable accumulation of new information, encourage the trend toward specialization. These pressures for individuals to devote themselves primarily, or exclusively, to an area of specialization gain momentum from such diverse socio-economic factors as an increasing urbanization of the nation's population, and the opinion of the citizenry that the utmost in medical care is the right of all and not the privilege of a few.

As areas of specialization develop within the field of neurological surgery, the specialists serve as a focus point for the teaching of precise concepts and techniques to students and residents. Examples of such developing fields in neurosurgery are traumatology, microscopic surgery, stereotaxic surgery, pediatriug surgery, and aneurysm surgery. All of these would qualify as specializations by classical standards. However, today's student may consider them artificial . . . based upon etiology, technique, instrumentation, age range, or disease entity. For him specialization entails an intellectual exercise which is, in essence, a project oriented activity directed toward answering specific questions with a specialist being master in all phases of knowledge pertinent to this field. Examples would be movement, blood flow, neoplasia, cerebrospinal fluid dynamics, etc.

The questions which I would raise then,