Harvey Cushing*
General Surgeon, Biologist, Professor

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Today I would like to look at some of the non-neurological aspects of Cushing and his work, viewed in the perspective of a younger generation that never worked with him or knew him, 75 years since his graduation from medical school, 57 years since he became Moseley Professor, 50 years since he commenced his Life of Osler, and 30 years since his death. I can claim no special knowledge or insight as a basis for discussing Cushing's work merely because I live on the same street, use the same office, conduct the affairs of the same department, or sit at the same desk in the same figurative Chair, looking out the same window at the same street scene while I contemplate many of the same problems. Ours is a generation that came to Harvard Medical School 2 years after he left, and I met him only once and then by a curious mischance that might be worth the telling.

In the fall of 1932, I was a sophomore at Harvard College. A friend's father, a doctor in Wisconsin, had told us by all means to look up his old buddy Dr. Cushing when we came to Boston. One Sunday afternoon we telephoned and with surprising cordiality, Mrs. Cushing said, "Why yes, this is Sunday afternoon and won't you come over." After we had been there a few minutes we noticed that there were preparations under way for a rather large tea party. Several men a good deal older, actual medical students, arrived in large numbers. In the course of our conversation, though Dr. Cushing was very courteous, it became clear that sadly he had never heard of my friend's father. Furthermore, it became increasingly and painfully evident that Dr. and Mrs. Cushing had set up a series of Sunday afternoon receptions in preparation for his retirement, and thought that we were first year medical students! After a little while, we sneaked quietly out. As soon as we got to our room we consulted
the phone book again. There were three Dr. Cushings. One was Dr. Hayward Warren Cushing. He was my own great uncle so that was obviously not the man. Then there was Dr. Harvey. Finally, there was Dr. Arthur Cushing, a distinguished practicing physician in Brookline. Ah yes, his father had said something about Arthur. So, being mistaken for someone we weren't and thinking he was someone he wasn't, we had tea with Dr. and Mrs. Harvey Cushing.

To make this topic manageable, I will divide it into three parts: first, the surgical and technical studies; second, Cushing's physiologic research and endocrinology; and third, his Departmental Chairmanship.

In the years between entering medical school in 1891 and the end of the war in 1918, Cushing studied, wrote, and lectured on a wide variety of topics. These included basic surgical technique (the Halsted tradition was considerably refined by Dr. Cushing for handling the delicate tissues of the central nervous system), cardiac surgery (in which he was 40 years ahead of his time), saline solutions and tissue electrolytes, surgical bacteriology of the intestinal tract, electro-surgery, blood pressure regulation, local anesthetics (surely he was influenced by his boss on that one!), diseases of animals, typhoid fever, hibernation, and Raynaud's Disease. If we just stopped there in describing the "impact of Harvey Cushing on American surgery" we would have indicated quite a considerable splash and a very big crater.

He was literally into everything, and wherever there was controversy he was almost always right. That certainly aroused antagonism. One of the best examples of this was the great blood-pressure episode. He had published a paper stating that it was sound practice to measure and record the blood pressure of patients while they were being operated on. This was a further extension of the work he had done as a medical student on anesthesia charts.

"There has been a long-felt want in the surgical operating room, possibly even more than in the clinic, for some practical form of apparatus which will give with facility numerical equivalents for variations in pulse tension, and by means of which consecutive observations on this quality of the pulse may be diagrammatically charted. "During a critical operation the hearsay dependence which the surgeon must place on the palpating finger of the anesthetist for a knowledge of the cardiac strength of his patient may be oftentimes one of his most trying responsibilities. Were it possible, therefore, under such circumstances for him to be told with definiteness. . . ."

His article implored surgeons to use the Riva-Rocci apparatus, or rather to see that their anesthetists were equipped with it, was written in 1903. Now, there is nothing that the practicing surgeon enjoys less than being told to do something in every case that he is not doing in any case. So this aroused a storm. As you might predict, a Committee was then appointed. This Committee was composed of some of the most prominent members of the surgical staff of the Massachusetts General Hospital. After very careful study they came up with their report that during operations there was no utility to be gained from measuring the blood pressure of patients. This epic report was followed within months by the widespread adoption of the practice, and, of course, the members of the Committee never forgot the episode.

Cushing's articles on cardiac surgery included experimental and clinical notes on chronic valvular lesions in the dog and the possible relationship of their attempted repair to some future surgery of the cardiac valves in man. At a meeting only a few years ago, I unexpectedly encountered a whole subculture of cardiac surgeons who were totally unaware of this remarkable work. Cushing and his colleagues at the Hunterian Laboratory at Hopkins had examined a dog with ascites and anasarca, made the diagnosis of cardiac valvular disease, probably tricuspid, attempted to do a valvotomy, and then—in the best Cushing tradition—described the whole affair in detail in the literature.

"We wish to mention briefly some attempts which have been made in the Hunterian Laboratory to reproduce chronic valvular lesions, to record certain cases of spontaneous valvular disease in the dog which have come under our observation; and finally to comment on the possibilities of future surgical measures in man directed toward the alleviation particularly of the lesion characterizing mitral stenosis."

"In November, 1905, there was brought