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DR. WELCH'S INFLUENCE ON MEDICAL EDUCATION

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Dr. Welch's influence on Medical Education could readily be shown by a list of his positions and accomplishments. But I take it that within the general theme of Dr. Welch's influence there will be room for surmise and speculation as well as demonstrable fact and direct inference. At any rate, I shall begin with the recital of some relationships, any one of which would deserve mention as an important influence on medical education. To this simple recital of facts I shall then add surmise, speculation and opinion in gradually increasing amounts in the hope of formulating a general concept that might indeed be applied to all of today's exercises.

As one of the earliest of his influences on medical education, Dr. Welch shared with President Gilman the task of finding and attracting to the new Faculty of Medicine of a young university these professors—Osler, Halsted, Mall, Abel, Howell and Hurd. Osler was forty at the time of his appointment, the others were all in their thirties, as was Welch. Gilman's performance, and Welch's share in it, was remarkable because it is harder to pick first-raters in their thirties than later when limitations as well as abilities have declared themselves. As I hope to point out later, Welch not only discerned the individual merits of these men: he accomplished still more because he brought them together and kept them together harmoniously at work.

Perhaps more personal and individual an influence on medical education is to be found in Dr. Welch's selection and training of a group of pupils. To the volume in honor of Dr. Welch's fiftieth birthday in 1900 there were 38 contributors. To read all their names would exhaust your patience without greatly deepening your conviction that the list of Dr. Welch's pupils could itself present a powerful argument for his influence on medical education—Councilman, Mall, Halsted, Barker, Abbott, McCallum, Flexner, Opie, Thayer, Nuttall, Howard, Carroll, Lazear, Walter Reed, Gorgas and in a later generation Whipple and Winternitz and Goodpasture. That is a list of men singularly influential in American medicine.

But to list only the men trained by Dr. Welch is to ignore a still larger number of young men who were placed in important positions entirely or partly because of Dr. Welch's recommendation. Of this group Dr. Rufus Cole, the physician placed in charge of the Hospital of the Rockefeller Institute, is a sample from what must be a long and significant array. And then, of course, there is the still larger roster of graduates of the Johns Hopkins Medical School and the students of the School of Public Health, who, if they heard even but once Dr. Welch at his best, remember the experience as one of the passages of excellence in a journey through a world of comparative mediocrity. Welch not only placed his well trained pupils: one of his greatest services was that he had much to do with creating the demand for their services by the reputation that grew up around what he was building in Baltimore for the medical sciences.

In still another capacity Welch was destined to serve medical education; namely, as the President of the Board of Scientific Directors of the Rockefeller Institute from 1901 to 1933 and as a Trustee from 1910 to 1933. During those years the role of the Rockefeller Institute as a source of trained medical scientists was extraordinary. For the very reason that it was successful in staffing many other centers, it could hardly be expected to continue just this form of leadership forever. Consequently, no one institution exists today with an equal distinction of current pioneering. American universities that had no long tradition of adding to knowledge were startled and at times exhilarated by the single-minded devotion of the Rockefeller Institute to research. Simon Flexner credits the Rockefeller Institute with having been a considerable factor in the creation of the Kaiser Wilhelm Gesellschaft. In that way one might claim Welch's indebtedness to German science was in generous measure paid, for Welch was Flexner's most far-sighted and influential adviser.

In an advisory capacity Welch served also the Carnegie Institution of Washington as a member of the Board from 1909 to 1934 and as Chairman of the Executive Committee for the first seven of those years, the Milbank Memorial Fund as Chairman of the Advisory Council from 1922 to 1932, the Rockefeller Sanitary Commission and its successor, the International Health Board of The Rockefeller Foundation, for 18 years, beginning in 1909. He was President of the

National Academy of Sciences from 1913 to 1916. It was during his presidency that the National Research Council was organized—certainly an event of profound influence on medical education as well as science generally. Besides these stipulated advisory services, Dr. Welch's advice was sought informally by Abraham Flexner, Wallace Buttrick and Frederick T. Gates of the General Education Board.

Out of his contact with officers of the Rockefeller Boards came Dr. Welch's membership on the Board of Trustees of the Peking Union Medical College which began in 1915 with a visit to Japan and China and continued till 1931. In the work of that medical school, staffed and equipped as no other medical school in the Far East, Welch's wide horizons in medicine were soon and long an influence for medical education of a superior range and quality.

Two further contributions to medical education were made by Dr. Welch when he was already at an age when few men undertake new enterprises. At 68 he witnessed the opening of the School of Public Health with a faculty selected by himself and Howell. ^{at Johns Hopkins} ~~The School opened with the same number of students—17—as had entered the first class of the Johns Hopkins Medical School 25 years before.~~ Welch was its leader. He had planned or influenced the planning of probably every important aspect of its policy. In this enterprise, as in the Peking Union Medical College, Dr. Welch's influence went far beyond the United States. In large numbers the traveling fellows of The Rockefeller Foundation and other foreign visitors found in Professor William H. Welch an unforgettable Patriarch of World Medicine. They venerated him, and they carried back a vivid memory of him to all points of the world—or nearly all.

Then in 1930, after three years of preparation for a quite different enterprise, Dr. Welch had the satisfaction at the age of 80 of seeing his hope for an Institute for the History of Medicine assured, and two years later the appointment of Professor Sigerist dispelled any misgivings he might have had as to the life expectancy of this child of his old age. The older he grew, the more Welch got ahead of his contemporaries: not a common phenomenon. One has the impression that Dr. Welch was more deeply delighted by the success of this last institutional project than by almost any other undertaking he had laid his hand to. Perhaps this delight expressed the all-too-under-

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standable impatience of an old man, or perhaps Welch's natural reserve in expressing his enthusiasms had diminished by the time he was 80. But I think the chance equally likely that Dr. Welch's extraordinary range of curiosity and erudition found in History the breadth and inexhaustible riches of the World and of the Past—dimensions and distances and a universal relatedness more satisfying to his mind than any one field of medicine had ever offered him. Besides, as we all near the status of the great majority, it is natural that their accomplishments fall into the far more mellow and tolerant perspectives of one about to join their number, even if not confident of their company. . . .

Such, then, were the major directions in which Dr. Welch influenced medical education in what was to him as well as to his immediate juniors an almost unbelievably rewarding age in medicine. I have not mentioned some thirty-three other associations, mostly in the field of medicine, in which he was an officer or an active member. That these services were appreciated by his contemporaries seems clear from the number of honorary degrees, decorations and honorary memberships given him—forty-one honorary memberships, eighteen honorary degrees and twelve decorations and medals. The breadth of his interests and his erudition, and his skill as an adviser and negotiator made him more impressively effective among his contemporaries than he could later appear to anyone but a close student of his life and times.

These are facts—not all the facts—but some of the facts about the imprint of an evidently extraordinary man. Are there any circumstances which might help to explain more clearly the exceptional influence that this man exerted over his contemporaries, his juniors and even today their successors? I could name two such circumstances but I hope at no risk of being accused of trying to detract from the accomplishments of a great man. But his very impersonality in appraising others prompts a comparable response in this appraisal of his own influence.

It seems to me that we all owe a special debt first to the circumstance of Welch's remaining a bachelor, and second to the fact that he lived to attain a patriarchial status. By so much as the companionship of a wife would have shortened his time available for conver-

sation or reading at clubs, for travel, for work, for committee meetings and for study, her non existence has been the gain of his friends and medicine everywhere. Perhaps this is only the old argument for a celibate priesthood but I feel that Welch was far more effective and happy as a bachelor . . . and perhaps I should promptly rest my somewhat delicate case by noting that he seems to have had the same opinion. On the point of his living to the age of 84, there will be perhaps less difference of opinion. If you live until your devoted pupils and juniors have themselves become elder statesmen, you are almost assured of a legendary status while still alive: Welch became a living, genial legend. In civilizations as competitive as ours, old age, though not always honored, is usually respected if there be no signs of petulance, garrulousness, vanity or failing health. Instead of petulance Welch showed good-natured tactful generosity; though he liked to talk, it was always with a suave impersonality and from a well exercised and thus wonderfully rich memory; instead of vanity Welch showed a more modest estimate of his work than almost any man of his station in life; and his health and alertness of mind gave no cause for anything but admiring wonder even into the last year of his life.

It may be claimed, and plausibly enough, that Dr. Welch happened to live at a time in American history and in the development of medical science that would have made demigods out of mediocrities anyhow. That I do not believe: the only machinery for turning mediocrities into demigods is dictatorship, the ballot box or the law of primogeniture, and even such machinery needs the services of public relations experts to keep running smoothly. Admittedly, the growing wealth of America extended Dr. Welch's influence in directions and to distances that would otherwise not have been possible. And certainly the fundamental medical discoveries of 1880 to 1900 offered further research opportunities to persons who would have remained unknown if they had been born twenty years earlier. But neither of these factors explains the situation.

What explains more completely the magnitude and extent of Welch's influence on medical education is the remarkable combination of personal qualities he possessed. To match, and perhaps to protect him from, his hospitable generosity and general kindness, he had an aloofness, a detachment and an impersonality that enabled him to be a

shrewd judge of men. He was able in his thirties to select a faculty with extraordinary discernment. Then came into play his remarkable ability as a conciliator. Inclined himself to take the middle path and follow the golden mean, he could mediate, buffer and persuade more naturally than utter ultimatums or mutter imprecations. In contentious matters he rarely took an extreme or irrevocable position. He must have had an unusual sense of timing and a keen conviction of its importance, for he would neglect everything for the sake of pushing some one matter at exactly the appropriate moment. And as a natural corollary of a good sense of timing, he had both patience and tenacity. To me his most impressive traits were, first, that he seemed to regard the faculty of memory as something calling for constant exercise and, second, that he assumed his companions to have the capacity to be interested in great themes and fine endeavor. With great natural dignity he elicited the interest of others by the high quality of his own curiosity, wonder and delight at knowing a subject thoroughly enough to be able to relate it to all manner of other aspects of living. Ingenuous himself, he drew out the best there was in others—the best. Hardly a more satisfactory combination of traits could have been found for the small collection of superior persons that was the Johns Hopkins of his day. I would repeat—the small collection of superior persons.

If I have made a convincing case for believing that Welch had a considerable influence on medical education, I owe some time to the task of describing in what directions this influence pointed. Remember that influence is not always triumphant—it sometimes meets defeat from opposition or apathy or unfavorable circumstance. None the less, it is influence and not without issue. In at least four directions Welch influenced medical education in this and other countries.

By conviction and by example Welch saw the tremendous gain it would be to medicine if travel, interchange and merit (regardless of point of origin) were to become characteristic of medical education and the criteria for promotion and praise. He opposed the parochialism and the clannishness that still smoulder in narrow minds in whatever washrooms they congregate. First a Connecticut Yankee, later a New Yorker, in going to Baltimore he went himself, as later he sent his pupils, to new environments—adventurously.

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small collection of superior persons

Welch exemplified as well as insisted upon the importance to medicine of science, of scientific methods, of scientific thinking and modes of expression. He championed the construction and the maximum use of laboratories and especially he worked for the creation of careers for young men who wanted to become full-time medical scientists. And he was a medical scientist when that was a suspicious sort of thing to be, with little but youth and logic to support its future. The significance of Welch's convictions is brought into sharp relief by Lester Carr's account of Professor Loomis standing on the platform lecturing to medical students in New York and saying derisively, "People say there are bacteria in the air, but I cannot see them,"—a witty remark in 1884 and greeted with a burst of applause from the students. Welch, who had just returned from Europe convinced of the truth of the germ theory, remarked when told of Loomis' witticism, "That's too bad. Loomis is such a nice man." In some ways this insistence on the importance of what we now call the medical sciences was Welch's most significant contribution to medical education. If so, it is because more evident success attended it than met two other of Welch's influences.

I refer, of course, to the fact that Welch's weight was in favor of treating students as though they were mature—as though they could wisely be given full liberty even though such an attitude seemed to the student like studied neglect. One could hardly prove that Welch was permanently successful in inducing maturity in the average American medical student, but I imagine that few of his pupils were unaware of the tonic value of this method of teaching—and there is even some evidence that they have practiced it on subsequent generations of students with memorable effects. It was, however, new in its time—"a voice crying in the wilderness" . . .

"But the greatest influence that appears to me from the sum total of Welch's impact on medical education seems to have been his influence in recognizing the comprehensiveness of medicine, the fascinating interrelatedness of an almost unlimited number of ascertainable facts. It was the man's horizons as well as his adventuresomeness that were so startlingly grand, horizons that seem to have lifted apparently with every one of 83 years. To Dr. Welch, I believe, American Medicine owes, unconsciously, a peculiar debt—namely, a debt for being shown that the horizons of medicine *can* be almost

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limitless. Dr. Welch had Vision—and would entertain a Vision with the hospitality and the patient alertness he would bestow upon a chosen guest at the Maryland Club. He *entertained* Visions. He had the wit to know that unless thus entertained, Visions slip out of town sedulously resolved never to return. Finicky things, Visions: high infant mortality, embarrassingly dependent on human beings, never seem to care who they visit, but *they never overstay their welcome. ...*

Let me begin the final section of this paper with a rather stark question. Can you think of some part of the world where there is a college or a university but where the establishment of a six-thousand-dollar fellowship without closely defined objective but tenable for six successive years would almost certainly be an inexcusable waste of money? If you can think of such a university, you will agree that there are, on the other hand, universities where such a fellowship would be magnificently used. What is the probable principal difference between a university that could not safely be given such a fellowship and another university that would be able to use so much money to the greatest advantage? I think it is that the first university lacks what I would call the heritage of excellence and the second has it.

" I must admit that in the phrase "heritage of excellence" I am inventing a name for what I have sensed but never seen. I am sure it has been recognized, but has it ever been described? Though I believe it is a psychological reality, I shall introduce it as a hypothesis—as befits this audience.

I suggest that something extraordinarily precious comes out of the close but entirely free association of really superior people. To this emergent quality I give the name—the heritage of excellence, mostly because it lasts so long and because it never comes from, nor appeals to, mediocrities. I doubt if a human being can maintain really close relationships with more than six or seven people. Therefore large numbers of excellent persons are not necessary to create it. By really superior people I mean persons so spirited and yet so balanced, so gifted and yet so incomplete, so mature and yet so eager that they can remain in close contact with but a few of their kind and yet experience no surfeit, boredom or friction.

The exact nature of the contacts between a few absolutely first-rate people is completely unpredictable except in point of its astonishing quality. All you can know about it in advance is that it will be memo-

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rable and that it will spread outward and afterward. This almost unearthly and certainly intangible product of the interchange between superior persons cannot be seen but it can be felt and truly like an atmosphere, it can be breathed. Indeed, it is an inspiration.

Have you ever sat in with three or four really witty people who knew that to play ball you have to catch as well as pitch and that enchanted listening and attuned response invite and fully reward inspired talking? The result for you was almost certainly a memorable evening—an evening that transcends your abilities at description. That is a bit of what I mean by the heritage of excellence. But think of what this heritage of excellence would mean if applied not merely to wit but to the fields of friendship, of scholarship, of all medicine and of aspiration for the future.

What Welch and his colleagues did and believed and wrote is not as important now—nor anywhere near as important—as the heritage of excellence their contacts with each other have left us. We are met today to talk about Dr. Welch and his influence. What we are talking about is not Dr. Welch alone but the quality of interchange among a relatively small number of first-rate human beings—an atmosphere in which Dr. Welch was Popsy—a relationship whose larval form was eager work and whose imago I have tried to name as the heritage of excellence. It does not depend on numbers; it depends on the quality of the participants in the life of the university. Subjects may come and subjects may be removed from the curriculum; professors may turn out to have been egregiously mistaken, but if they were first-raters and in eagerly honest relationships with each other whether at work or at play, the result is the heritage of excellence.

In this sense Johns Hopkins is enviably rich. The legend, the heritage of excellence that came from the unflagging interchange between Welch and Osler and Halsted and Abel and Howell and Mall and a few others—in this you have what makes a generous fellowship a safe investment here at Hopkins, safer than in a university that has never witnessed the contagious companionship of excellence. What more do men of superior character and capacity require for their association than freedom, responsibility and expectation? The wisdom of the university is to provide those three—freedom, responsibility and expectation. It is the interaction of such men that attracts great young men, leads to great living and itself lives on long afterwards as a heritage of excellence ready at any time to burst into bloom again.