

William Henry Welch

AND THE

Heroic Age of American Medicine

BY

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COURTESY HOLLINGER

William Henry Welch

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the formal exercises the professors came and sat among the students like one of them. Prof Waldeyer, with whom I study microscopy, came and drank my health, as if we were life long friends. I do not think that the professors lost at all in dignity or in the respect of the students by thus mingling with them. The prevailing tone of the occasion was what the Germans call *Gemüthlichkeit*, for which we have no equivalent in English, good nature and jollity come as near to it as anything, but they do not express it."

Welch would have liked to stay in Strasbourg another term, studying microscopic pathology with von Recklinghausen, but the professor accepted only more advanced students; Welch reluctantly searched for another university that would give him the work he needed. He decided on Leipzig.

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On his way there, Welch took a three weeks' walking tour through Switzerland, northern Italy, and Bavaria, with an Irish medical student named Geoghegan.¹ They climbed the Piz Languard, a mountain of more than 10,000 feet, "without a guide, although one is recommended; but there was very little snow and ice to cross, and the ascent, although toilsome, did not seem dangerous, if one has a steady head." Welch amused himself by pretending he was a Swiss, since Americans were charged four times as much as natives. "They speak such an abominable German dialect in Switzerland that we actually succeeded in making many believe that our native tongue was some other abominable German dialect. After paying our bills it was often great delight to tell the landlord, 'Ich bin ein Amerikaner.'"

"For a person interested in art," he reported, "Munich must be an earthly paradise." He revelled there in the picture galleries, the quaint streets, and the opera. In Nürnberg he enjoyed the sensation of having stepped back many centuries.

When he arrived in Leipzig late in August 1876, he was delighted by the university, "the oldest and largest in Germany," he wrote home, "having been founded in 1409 and now number-

ing over 3,000 students. . . . There is one part of the city called the medical quarter." And again: "If you could visit the handsome and thoroughly equipped physiological, anatomical, pathological and chemical laboratories and see professors whose fame is already world wide, with their corps of assistants and students hard at work, you would realize how by concentration of labor and devotion to study Germany has outstripped other countries in the science of medicine. There is much less feverish energy and haste and consequent friction, far more repose here than with us in all departments of life. Men do not grow old so soon."

On enrolling in Professor Ernst Wagner's pathological institute, where he studied microscopical anatomy, Welch was pleased to find that the King of Saxony assumed all the expenses of instruction, but he was soon complaining that the professor did not pay enough attention to his pupils, since he "forms an exception to most pathological anatomists in Germany in carrying on a very large practice"; Wagner, indeed, was soon to succeed to the professorship of medicine. Welch considered him much inferior to von Recklinghausen. However, in February Welch reported that he had learned a great deal. "My work this winter in Prof. Wagner's laboratory has been of a general nature, as I thought it best to obtain first a general review of the morbid anatomy of the different tissues and organs, before working upon any special subject. My collection of microscopical sections numbers about five hundred of which over four hundred and fifty are from diseased organs, the remainder (made in Strasburg) from normal anatomy. Most of the specimens, I think, are of considerable value; a pretty good evidence of which being that Prof. Wagner has asked me to give him duplicates of a large number for his own collection. I believe that I can demonstrate from my collection under the microscope most of the pathological changes which occur. . . ."

"But what is of greater importance I have acquired a knowledge of methods of preparing and mounting specimens so that I can carry on investigations hereafter wherever I have the material. As you say in your letter," he continued to his father, "It is a great thing to accurately interpret what is seen in

the dead body under the microscope.' The science of pathology is still very unsettled and imperfect, but nevertheless without our knowledge of disease is mostly guess-work. Prof. Wagner is very kind to me, as in fact are all of the professors whom I meet here. He has given me a case to work up especially and I shall probably spend the next three or four weeks on it. It is an extremely interesting case of Lympho-Sarcoma extending by continuity from the glands of the neck into the lung. He thinks that a careful study and examination of the case may throw some light upon the very obscure nature of the class of tumors called Lympho-Sarcoma." Welch's report on the microscopic appearances of these tumours impressed Wagner, who asked the young man to revise it for publication in one of the leading medical journals.

In later years Welch was to say that it was not the opportunity to study with Wagner which had brought him to Leipzig, but rather his wish, inspired by his admiration for Seguin, to specialize in neurology as soon as he could manage it after his return to New York; a specialist, he knew, would have more time for pathology than a practitioner. Johann L. O. Heubner's course in nervous diseases was the loadstone that attracted him to the Saxon city. On his arrival, however, he discovered that Heubner was now giving all his attention to the diseases of children and so, in order to fill the time left over from his study of histology, Welch entered the physiological laboratory* of Carl F. W. Ludwig. Thus another of the major influences of his life, an influence that may well have changed his whole career, was, as Welch explained later, a matter of pure chance.²

Ludwig, at their first meeting, proved to be "a rather elderly formal but very kindly gentleman who took me into his private room, and asked me what I had studied. When I left him he said, 'If I could only talk English as you can German.' . . . He said that if I was particularly interested in microscopical work, he could direct my physiological work in that direction."

Writing his sister a month later, Welch confided that Ludwig

* Physiology is the science of the normal functions of living things, as compared with anatomy, which is the science of their structure.

"is my ideal of a scientific man, accepting nothing upon authority, but putting every scientific theory to the severest test. His laboratory is a model of its kind. . . . Only those can work with him who are able to undertake original investigations, he receives no students simply for practice. Consequently the number is always small, and consists almost wholly of doctors. At the end of each year those whose work has resulted in making some contribution to science publish their results in a volume. These 'Contributions from the physiological laboratory in Leipsic' have probably added more to science than any similar work of the present day, and of course the credit is to be divided between Prof. Ludwig and his students. Prof. Ludwig, of course being interested that as many discoveries as possible should be made in his laboratory, gives to each individual's work a great deal of personal advice and supervision. The subject which he has given me to investigate is one which he personally worked up about thirty years ago viz. the microscopical study of the nerves and ganglion cells of the heart, and he thinks that I may be able to find out more than is yet known about the subject by employing new and improved methods. The laboratory is equipped with every appliance necessary for complicated experiments. . . ."

"Prof. Ludwig spends the whole day in his laboratory and besides has very competent assistants. Here in Germany it would be considered ridiculous for a man to be at once professor of physiology and at the same time try to keep in practice. With us in America the professor is so poorly paid that he must earn his living by practice; in fact a professorship in a medical college is generally sought as an advertisement in acquiring practice, rather than as an opportunity for study and investigation."

On February 25 Welch reported: "My work with Prof. Ludwig has been very profitable, especially in giving me an insight into the apparatus and methods of modern physiology, which is by far the most exact of any of the branches of medicine, this position of exactness having been obtained more through the efforts of Prof. Ludwig than of any living man. He and the great Frenchman, Claude Bernard, are undoubtedly the two greatest living physiologists. Bernard is a more brilliant genius, but Ludwig sur-