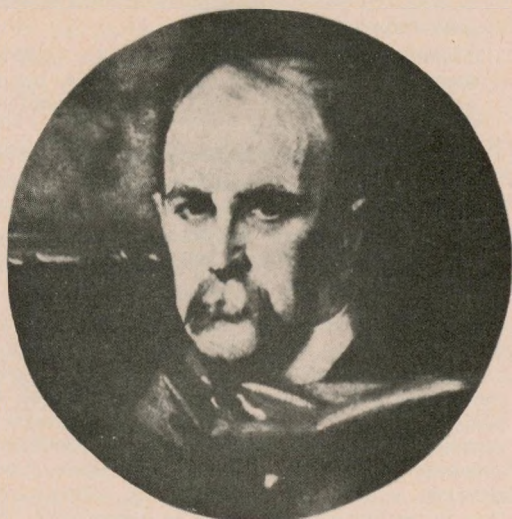


MEN and MEDICINE



WILLIAM OSLER AND THE INIQUITY OF OBLIVION

When William Osler lay dying in December 1919, no longer able to read for himself, he had others read to him. As told in Cushing's *Life*, his selections were from those books most dear to him. Walter Pater's "Marius," Plato, Andrew Lang, Matthew Arnold and his most beloved, Sir Thomas Browne. In a copy of Browne, his constant companion for 52 of his 70 years, Osler had marked a passage "Wonderful page—always impressed me as one of the great ones in B." The passage he had marked begins:

"But the iniquity of oblivion blindly scattereth her poppy, and deals with the memory of men without distinction to merit of perpetuity. . ."

It appears that the "iniquity of oblivion" may be dealing harshly with Osler himself. I am led to this viewpoint by inquiries I have made to young medical students and to doctors. The young "know not Osler"; only the older doctors are well acquainted with him.

Born above Toronto in 1849, William Osler was successively and successfully professor of Medicine at Mc-

Gill and Pennsylvania, and in 1889 he was appointed the first Professor of Medicine and Physician In Chief at the new Johns Hopkins. In 1904 he accepted the Regius Professorship of Medicine at Oxford, where he died December 29, 1919. Distinguished as were his appointments, Osler's accomplishments over-shadowed these.

He took the new scientific medicine from Germany and transplanted it to this continent, setting American Medicine and Medical Education firmly on the path to the heights they now occupy. He was active and influential in public health measures, helped found the National Tuberculosis Association, and pioneered in many other areas, medical libraries, medical education, societies and journals. Perhaps his most enduring monument was his *Principles and Practice of Medicine*, first published in 1892, which was translated into four other languages and ran through a dozen or more editions. Being read by Frederick Gates, the Osler textbook was ultimately responsible for the Rockefeller philanthropies to medicine, the famous Institute and world-wide health activi-

ties. It is still worth the reading but lies undisturbed in medical libraries across the land.

Osler was *the* Great Physician to the medical men of the generation before this one and that which preceded it. On his seventieth birthday, the summer before his death, Osler was the object of an outpouring of respect and affection unknown in the world until that time and not since equalled. Two scientific volumes by the most distinguished physicians were dedicated to him, as well as the July 1919 number of the *Bulletin of The Johns Hopkins Hospital*, full of praise, extravagant by our standards, but sincere and from the hearts. On his death, William Henry Welch, the beloved "Popsey," the father of American Pathology and with Osler, Kelly and Halsted, a founder of The Johns Hopkins Hospital and Medical School, said of Osler:

"At the time of his death, he was probably the greatest figure in the medical world, the best known; the most influential and the most beloved."

William Osler was the model of the classically educated and well-rounded medical man. He was quite as familiar with the classics in his library as he was with the medical literature, as adept in the pursuit of the obscure reference or the rare edition as in the investigation of disease in the patient. Primarily, of course, he was the clinician *par excellence*, thoughtful and precise in the understanding of the ill patient, realistic in his appreciation of the futility of the therapeutic measures then in use, full of admiration for the ability of the body to recover from the majority of diseases if not hindered by the physician, as his hero Sydenham had eloquently pointed out.

His writings were numerous and many of them are available for the medical student and physician today. There are few or no subjects of medical concern at present on which he did not have something to say still worth the reading. Here are just two examples:

On Medical Education (in 1899) Osler wrote: ". . . the student tries to learn too much and we teachers try to teach them too much—neither perhaps with great success. The existing evils result from neglect on the part of the teacher, the student and the examiner of the great fundamental principle laid down by Plato—that edu-

cation is a life-long process . . . We can only instil principles, put the student in the right path, give him methods, teach him how to study and early to discern between essentials and non-essentials." Still sound advice!

On Full-time Teachers (in 1912) Osler wrote: ". . . but what I dread is to have a class of clinicians growing up out of touch, and necessarily out of sympathy with the profession and with the public. This would be nothing short of a calamity. There are always men of the quiet type like Halsted, who practically live the secluded life; to have a whole faculty made of Halsteds would be a very good thing for science, but a very bad thing for the profession." Of the correctness of this prediction we can now debate, half a century later.

Osler's years of influence on medicine had many similarities to the present time. In the last half the nineteenth century there were the beginnings of the confrontation of the new science with traditional practices and concepts of medical care. The result was the century of medical revolution and renovation in which Osler played such an important part, forwarding the claims of the new scientific methods and technics while at the same time restating and emphasizing the broad cultural heritages upon which sound science and sound medicine are based most securely. At the present time we are at an explosive phase of medical information, in the logarithmic phase of the growth of knowledge. Data are erupting from the laboratories in overabundance; we are in the midst of an information explosion potentially more serious in its effects than the threatened population explosion. Medical research is so productive that even the rapidly proliferating medical and specialty journals are unable to keep pace with its results.

The influence of all these new data upon medical practice should be a matter of active concern for all of us interested in our medical profession, in much the same fashion that Osler was careful to reiterate the primacy of the patient in the medical complex and the scholarly component and legacy in proper medical care. In the plethora of new facts care must be taken that we do not lose older information, much of which is valuable and essential—that we deal with "that bold and adventurous piece of Nature"

in the terms which Thomas Browne described man, that much remains in man and in all living things which escapes the most precise electronic instrument and eludes the laboratory technicians, and that what we *can* explain in terms of the pure sciences is not enough to overshadow or to dwarf that which we cannot explain. Apart entirely from scientific honesty, the neglect of recognition and indication of our areas of ignorance will guarantee that we will never know anything about them. Certainty is the attitude of the semi-scientists rather than of the true scientist, of the technician rather than that of the investigator. We must emphasize the uniqueness of the individual, the peculiar qualities of the human organism as compared to all other organisms or we turn our backs on our cultural heritage, which Osler can be considered in a very real fashion to have epitomized.

The sciences are beginning to realize the value of a study of their history and an analysis of their methods. Departments of the History and Philosophy of Science are appearing more and more frequently in university faculties. The aims of such programs can be stated as Crombie and Hoskin have done:

" . . . to give the student . . . an informed and critical awareness of the scientific tradition which has grown up in our midst, and of its links with many other aspects of our thinking and conditions of life. For scientists it has also the more intimate purpose of providing an approach to the critical examination of what they themselves are doing."

The question needs now to be proposed in medical schools, "should we begin to take formal measures to ensure that the knowledge of our traditions and of our humane orientation is not submerged in the flood of new scientific knowledge? Can we find a place in our medical curriculum for a course on the 'history and methods of medicine' (a phrase of Osler's) or can we afford not to set up such a course, at the peril of our producing technicians of increasing dexterity and facility and narrowness and with all the restrictions of specialism?"

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HERMANN BOERHAAVE

Hermann Boerhaave was born on December 31, 1668, at Voorhout, near Leiden. He received an excellent education in many different fields, becoming an expert linguist proficient in all the European languages plus Latin, Greek, Hebrew, and Arabic. The University of Leiden granted him a Ph.D. degree, and the University of Harderwijk gave him the M.D. degree. In 1709 he became Professor of Medicine and of Botany at Leiden and, in addition, Professor of Chemistry in 1718. He became the leading physician of his time. His book, *Institutiones Medicae*, was published in 1708 and his *Aphorismi*, a year later. Both were translated and read widely in Europe and the Near East. Both were remarkable compendia of then current clinical medicine. In them Boerhaave showed his astonishing erudition and his extraordinary grasp of all the medical literature published up to that time. (He also was famous as the editor of the works of Vesalius, Aretaeus, Bellini, Alpino, and Swammerdam, all published separately in luxurious format.) His *Elementa Chemiae* was published in 1732 and went through more than thirty editions. Some historians regard Boerhaave and not Lavoisier as the founder of modern chemistry.

Boerhaave had an excellent personality; he was a man of simple, friendly dignity, pleasant-voiced and gracious. His phenomenal memory together with his ability to organize complicated material made him a brilliant teacher, not only in the lecture-hall but at the bedside. Like Sydenham in England he followed the ancient Hippocratic method of clinical teaching and he became famous as a bedside teacher. His all-encompassing learning and his extensive clinical experience combined to prevent his adopting any of the great dogmas of his time, and accordingly he became known as the founder of the Eclectic School. Boerhaave's clinical knowledge made him the great consultant of his time and he became very wealthy. It is interesting that he used his wealth in cultural pursuits; for example, his love of music led him to organize concerts at his country house.

However, when today's physicians read Boerhaave's writings they find almost nothing of value in them. It is evident today that Boerhaave had few original ideas of any significance and

continued on page 80

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Postoperatively in these cases the alkaline phosphatase is one of the first tests to become abnormal again if re-obstruction occurs. The alkaline phosphatase level of the serum is a sensitive indicator of obstruction to bile flow. In intrahepatic cholestasis the alkaline phosphatase rise can closely mimic that which occurs in extrahepatic biliary obstruction. This condition occurs most commonly as a hypersensitivity reaction to certain drugs, most notably chlorpromazine, methyltestosterone and arsphenamine. There is also a form of viral hepatitis characterized by intrahepatic cholestasis in which the serum alkaline phosphatase activity is uniformly increased to levels within the range typical of intrahepatic or extrahepatic biliary obstruction. In biliary cirrhosis, either primary or following the cholestatic variant or viral hepatitis or drug hepato-toxicity, the serum alkaline phosphatase is uniformly elevated, often to levels as high as 30 to 100 Bodansky units.

In viral hepatitis, the serum alkaline phosphatase activity is usually elevated only moderately, not more than 10% to 20% of cases having values in the range of those seen in obstructive jaundice, *i.e.*, above 10 Bodansky units or 30 King-Armstrong units. In contrast to this finding the serum alkaline phosphatase activity is frequently elevated and may reach high levels in infectious mononucleosis with liver involvement. The cause of this is obscure, but the phenomenon may be related to the infiltration of the liver with lymphoid cells seen in infectious mononucleosis.

Although the serum alkaline phosphatase activity may reach very high levels in extrahepatic obstruction and intrahepatic cholestasis, the levels usually are roughly parallel to the elevation in serum bilirubin. There are some diseases involving the liver in which the serum alkaline phosphatase activity often rises far out of proportion to the rise in serum bilirubin levels. This situation is referred to as a dissociation of serum alkaline phosphatase and serum bilirubin levels. It is most commonly seen when the liver is the site of metastasis from a primary neoplasm. It is also seen in space-occupying lesions of the liver such as amebic abscess. In this regard the infiltrative and granulomatous diseases of the liver are most interesting. In

these disorders the alkaline phosphatase elevations may be small, but occasionally a striking dissociation will be seen with serum alkaline phosphatase activity well above 30 Bodansky units and serum bilirubin in the normal range or only slightly elevated. When this pattern is seen and skeletal disorders can be ruled out the likelihood of finding a granulomatous or infiltrative process involving the liver is very high. Sarcoidosis, tuberculosis, histoplasmosis, Hodgkin's disease, amyloidosis, disseminated lupus erythematosus and Q fever are all examples in which this phenomenon can be observed.

In cirrhosis of the liver, whether of the Laennec type or of the postnecrotic type, the elevations of serum alkaline phosphatase activity are usually irregular and only of moderate degree. This is also true in primary carcinoma of the liver, although high values may be seen occasionally in this disease.

The question of the origin of the elevated serum alkaline phosphatase in hepatobiliary disease is an interesting one. The osteoblasts normally excrete alkaline phosphatase into the fluid bathing them, and the enzyme is removed from the plasma and excreted in the bile. The two most commonly accepted theories are (1) the retention theory in which the rise in serum alkaline phosphatase is held to be due to decreased excretion in the bile due to obstruction, the source of the enzyme being the osteoblasts; and (2) hepatogenic theory which postulates that a significant proportion of the elevated serum alkaline phosphatase arises from overproduction by liver parenchymal or ductal cells in the presence of obstruction or injury to the hepatobiliary system. Various experiments have been designed in animals to test these theories; and the same is true of studies in man, notably the fractionation of serum alkaline phosphatase by anion exchange resins and paper and starch block electrophoresis. In the latter experiments it has been shown that the distribution of serum alkaline phosphatase among the serum proteins in infectious hepatitis is the same as in normal serum, *i.e.*, solely in the beta-globulin fraction; this is the same as that seen in extracts from normal bone. In obstruction of the hepatobiliary system, whether intrahepatic or extrahepatic, there is

continued on page 82

MEN and MEDICINE

continued from page 67

that he made few original observations in medicine. Even in chemistry, which was at the beginning of a period of great development at the time, his contributions were largely negative. For example, on November 15, 1718, he started the heating to 100° F. of a pound of mercury; he continued it without stopping until May 23, 1734, and then declared that the alchemists' dictum that mercury is changed by heating was unfounded.

Many historians regard Boerhaave as without importance and a man whose influence on modern medicine was nil. This opinion is not valid: On the contrary, by inculcating in his pupils his own habits of hard work, omnivorous reading, logical organization, and precise exposition he had an enormous influence on medicine. His pupils included Albrecht von Haller, the master physiologist and great systematizer of physiologic knowledge; Hieronymus Gaub, Boerhaave's successor at Leiden and the great integrator of physiology with medicine; William Cullen, the outstanding systematizer of clinical knowledge whose textbook remained authoritative halfway through the nineteenth century; Sir John Pringle, the founder of modern military medicine; Gerhard von Swieten who, because his religion kept him from becoming Boerhaave's successor at Leiden, went to Vienna at Maria Theresa's invitation to establish the fame of the Old Vienna School; Anton de Haen who also went to Vienna and there wrote his 15-volume treatise on therapy, etc. In fact both Edinburgh and Vienna should be regarded as intellectual descendants of Boerhaave's Lieden because most of the medical leaders of these two schools had studied under Boerhaave or his successors. It is therefore clear that Boerhaave's influence should not be considered trivial, *i.e.*, based upon the content of his books, but should be recognized as world-wide and continuous.

Boerhaave is an excellent example of a physician who had a strong and lasting influence on medical teaching and practice despite the fact that he made no original observations and was not lucky enough to have discovered a disease or a physical sign to which his name might be attached. ■