LETTERS

Foreign Letters

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Sir James Mackenzie

By a curious irony, not unknown in medical history, Sir James Mackenzie has succumbed in his seventy-first year to heart affection and to the disease to which he devoted his last book-angina pectoris-from which he began to suffer a year ago. Born at Scone in 1853, the ancient place of coronation of the Scottish kings, he received his medical education at the University of Edinburgh, where he grad-uated in 1882. After a term as house physician at the Edinburgh Royal Infirmary, he studied at Vienna and then settled down to general practice in Burnley, a Lancashire manufacturing town, where he remained twenty-eight years. His career was something of a romance. Engaged in what to most men is an uninspiring routine, however useful and at times interesting it may be, he laid the foundation of researches which revolutionized cardiology and gave him enduring fame. On beginning practice, he realized that his previous studies had left him ill equipped for his work. At first he thought that the defect was personal and endeavored to remedy it. He read a vast number of medical works, and the truth dawned on him that the knowledge he was seeking was not available. The leaders of the profession were too engrossed in sciences other than medicine; simple practical questions left them dumb. He went to the root of the matter, saying: "Every sick man puts the same question to his physician: What does this symptom of which I complain mean for me?" Even the most common of all symptoms, pain, was not understood. He set to work to remedy this defect, and made careful notes of the symptoms of his patients.

He soon found that the task was too great for him, and concentrated on disease of the heart. He turned the weary hours of attendance in the lying-in room to account by study With the help of a local watching the parturient's pulse. maker, he devised a new instrument, the polygraph, which in his hands revolutionized our knowledge of cardiac disease, by enabling a complete record to be made for the first time of the action of the heart. Then came his studies of heart irregularity, which turned the eyes of the medical world on the Burnley practitioner. He published his first important work, "The Study of the Pulse." At the meeting of the British Medical Association in Toronto in 1906, he read a paper in which he pointed out that depression of the cardiac stimulus through the bundle of His produces prolongation of the interval between auricular and ventricular contractions until the ventricular systole becomes irregular or drops out entirely, thus explaining for the first time the phenomenon of heart block. In 1907 he settled in London, and soon took his place as the foremost consultant on diseases of the heart. In the following year appeared his great work, "Dis-eases of the Heart," which was translated into German, French and Italian. In 1913 he was appointed physician in charge of the cardiac department of the London Hospital. But the work of the specialist did not satisfy his aspirations. He harked back to the wider problems of his early days as a general practitioner. While at the very zenith of his fame, he gave up his great position in London and migrated to the little Scottish city of St. Andrews, that he might better study the problems of disease, as here, in a comparatively stationary population, he could follow up his patients. He founded, what is unique in the medical world, the St. Andrews Institute for Clinical Research, and gathered round him the local practitioners to study medicine in the way he thought

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it should be done. "The study of disease," he wrote, "will not advance until the general practoitioner becomes a research worker, because the general practitioner alone sees the earliest signs of disease." On two things he never tired of insisting—the necessity for the study of disease in its earliest stage, and the unreliability of laboratory methods. Thus, he wrote:

he wrote: It will come to be realized that the organs of the body are regulated by structures specially evolved for the purpose of conducting a peculiar form of energy called the impulse. The cells of the body have been specially evolved for the reception of this form of energy. The result of stimulation by the impulse is of a particular kind, being graded to suit the circumstances, purposive and effective. These conducting structures, erves, etc., are not evolved for the conduction of electricity, nor are the cells of an organ made to respond to an electrical stimulus. Physiologists place the organ in artificial conditions, employ artificial stimulation, and obtain an artificial result. From such results they evolve the "law of all or nothing," because that always happens in response to electrical stimulation, the response being sudden, ungraded, and ineffective and purposeless, in striking contrast to the normal response. When this is realized, the whole of the physiological interpretation of the functional activities of organs will have to be scrapped. This is one of the results that I anticipate. Keep this in your mind twenty-five years hence.

A general conclusion that emerged from the St. Andrews studies is that symptoms are due to disorder of normal reflexes. Of other works besides those mentioned, his most important one was "Symptoms and Their Interpretation," which was translated into four languages. In a tribute to him published in the *British Medical Journal*, Sir Thomas Lewis, now our foremost cardiologist, says that Mackenzie will hold a place in British medicine beside Sydenham, Stokes, Graves, Addison and Bright. At the end he studied his own symptoms, "not unsuccessfully," for some further clue as to their meaning.

Electronic Reactions

At a joint meeting of the Sections of Medicine and Electro-Therapeutics of the Royal Society of Medicine, Sir Thomas Horder presented a lengthy report of a committee that had investigated the so-called "electronic reactions" of Abrams. The committee consisted of Dr. C. B. Heald, medical adviser to the director of civil aviation, Colonel Lefroy, the head of the wireless research of the air ministry, and Mr. Hart and Mr. Whately Smith, who are engaged in physical research for the war office and air ministry, respectively. Thus there were three laymen to two physicians. Sir Thomas Horder, who may be considered to have represented clinical medicine, consented to act as chairman. The work came under two divisions: 1. The purely physical. Do the blood and secretions of a patient give out any form of energy that can be detected and measured by physical means? 2. What relation does any tuned and recorded reaction "electronic energy" bear to known pathologic conditions? The committee did not investigate the Abrams apparatus, but examined the claims of Dr. Boyd of Glasgow, who has devised a new apparatus, which he calls the "emanometer," for obtaining "electronic reactions." One test was the discrimination between two apparently identical substances presented in such a way as to be indistinguishable in the ordinary way. Of twenty-five successive trials, all were successful. The following conclusions are drawn: 1. Certain substances, when placed in proper relation to the emanometer of Boyd, produce changes in the abdominal wall of the subject of a kind that may be detected by percussion. Thus the funda-mental proposition underlying, in common, the original and certain other forms of apparatus devised for the purpose of eliciting the so-called "electronic reactions of Abrams" is established to a high degree of probability. 2. No evidence justifying this deduction is yet available from the work of those who practice with the apparatus designed by Abrams hir self. 3. The phenomena appear to be extremely elusive, and highly susceptible to interference, so that in order to obtain reliable results elaborate precautions are necessary,

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