MEN AND MEDICINE

GEORGE M. BEARD, M.D.

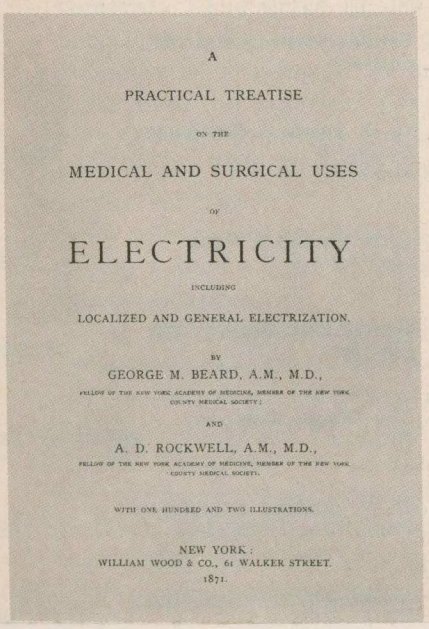
• Few American physicians are familiar with the name of Dr. George M. Beard, and much less with his work. Nevertheless he was an outstanding pioneer in neuropsychiatry. In addition he did work with Thomas A. Edison which by itself might have led to the discovery of radio, and in any case stimulated great interest in the phenomenon now called the Hertzian waves, which Heinrich Rudolf Hertz defined in 1888.

The Hertzian waves were, of course, later used by Marconi when he developed the radiotelegraph. A long series of observations led to Marconi's discovery. The first such observations were those of Galvani who around 1780 observed that sparking from an electrostatic generator caused twitching of frog muscles placed some distance from the machine. In 1842, Joseph Henry (who became the first Secretary of the Smithsonian Institution) reported that a one-inch spark affected magnets thirty feet away. In 1875 Edison also described electrical phenomena that took place at a distance from the source of the electricity. Edison believed that he had discovered a new form of energy, which he called "etheric force." At this time Dr. George Miller Beard was Edison's collaborator but he disagreed with him on this point. On December 16, 1876, Edison demonstrated the phenomenon and Beard lectured about it before the Polytechnic Club of New York. On another occasion Beard published a paper in the *Scientific American* in which he agreed with Edison's notion. Beard also wrote a long paper in a London journal, the *Quarterly Journal of Science,* in which he discussed Edison's findings in great detail. This paper stimulated interest in the phenomenon in many different laboratories in England and America. Many people studied the phenomenon but Hertz was the first to define it (in 1888).

George M. Beard had been interested in electricity for many years. With Dr. Alphonso D. Rockwell, he published a book in 1867 called *The Medical Use of Electricity*. He was only 28 years old then—eight years older than Edison. The book was a great success in both America and Europe and went into at least eight editions during the next quarter of a century. An edition which contained 698 pages and 102 illustrations was published in 1871. This book clearly described the induction of convulsions by means of applying electric currents to the head. Of course the application of electricity to the head had been used in treating nervous and mental disorders for a long time previously. For example, the text by Desbois de Rochefort, *Cours élémentaire de matière médicale,* published posthumously in 1779, cited the success of electric treatments in a girl suffering from a grief reaction. De Rochefort recommended the application of the electricity to the vertex and the occiput, as well as to the spine. However, he apparently induced no seizures and even warned that electricity applied to the head might cause such dangerous effects as excitement.

The mid-nineteenth century saw a great expansion in the therapeutic use of electricty; the book by Duchenne *De l'électrisation localisée et de son application à la physiologie, à la pathologie et à la thérapeutique* was published in 1855 and stimulated interest in the subject. The book by Beard and Rockwell included, among other things, a meticulously detailed account of the indications for and technic of electrotherapy. The application of electricity to the head was recommended for the treatment of what would now be called neurotic, hypochondriacal, and hysterical complaints. Both the electrodes were placed on the temples, over the ears, or on the mastoid processes, or one electrode was placed on the forehead and the other on the occiput. The authors stated that prolonging the treatment might cause convulsions. However, they regarded this as an undesirable effect; nevertheless, they clearly called attention to the induction of seizures by the cranial application of electricity almost three-quarters of a century before Cerletti rediscovered the method.

The book is interesting for several other reasons. One is the matter-of-factness of the phrenologic comments. Thus, in discussing the placement of electrodes, the book recommends placing the positive pole on the summit over what was supposed to be the phrenologic "organ of firmness." This sentence exemplifies the hold that phrenology still had on American psychiatry. The authors' adherence was considerably weaker than that of nearly all American psychiatrists of the pre-Civil-War period; those physicians were firmly convinced of the validity of phrenologic ideas and had unshaken faith in the value of psychotherapy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PRACTICAL TREATISE

ON THE

MEDICAL AND SURGICAL USES

OF

ELECTRICITY

INCLUDING

LOCALIZED AND GENERAL ELECTRIZATION.

BY

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WITH ONE HUNDRED AND TWO ILLUSTRATIONS.

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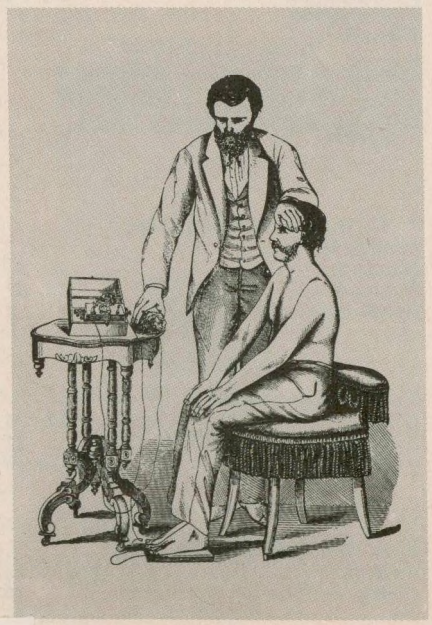
1871.



and milieu therapy, together with a deep scorn for shock therapy. However, it is evident that even as late as 1871 phrenology pervaded American psychiatry much as Freudism does today.

Another reason for this book's interest are the words on page 294. In discussing nervous exhaustion the book states: "The morbid condition or state expressed by this term has long been recognized, and, to a certain degree, understood, but the special name *neurasthenia* is now, we believe, for the first time presented to the profession." The authors go on to say: "Among the special exciting causes of neurasthenia may be mentioned the pressure of bereavement, business and family cares, parturition and abortion, sexual excesses, the abuse of stimulants and narcotics, sudden retirement from business, and civilized starvation, such as is sometimes observed even among the wealthy orders of society. *The disease is most frequently found in the United States, among the brain-working classes of our large cities.*" In another place, *i.e.,* in his book *American Nervousness,* published in 1881, Beard referred to neurasthenia as "the American disease." He wrote: "While nervousness is not peculiar to America, yet there are special expressions of nervousness that are found here only; and the relative quantity of nervousness and of nervous diseases that spring out of nervousness are far greater here than in any other nation in history, and has a special quality . . . The nervousness of America is extending over Europe, which, in certain countries, at least, is becoming rapidly Americanized." (These gloomy words uttered three-quarters of a century ago are a modified echo of what George Cheyne had said in 1733 in his book *The English Malady*. Cheyne believed that nervousness was a particularly English disorder and that its incidence in England had reached unprecedented levels.)

Beard's writings on neurasthenia gained him widespread recognition in America and in western Europe. However, his observations on the seizure-inducing effects of electricity were forgotten. Beard apparently treated few psychotic patients, and in any case he tried to avoid inducing seizures. Accordingly, it was impossible for him to have discovered electroconvulsive therapy. The physicians who first developed the convulsive therapy of phychoses almost certainly knew about Beard's writings on neurasthenia; it is unfortunate that they did not know about his observation on the effects of electricity, made more than half a century earlier. Here is another example of how ignorance of the findings of the past retards progress in medicine.

If he had been persistent, Beard might have participated in the discovery of radio waves. He might also have discovered the value of electroconvulsive therapy in depressions. However he did neither. On the other hand his ideas on what is now called neurosis were widely adopted. In addition he coined a new term "neurasthenia," which was adopted by leading psychiatrists—Janet for example.

Beard should therefore be regarded as one of the great American physicians of the nineteenth century. His death at the young age of 44 deprived American medicine of one of the most active and broadly-informed minds that it had at the time. ■