

MD REMEMBERS: A Pioneer in Neurology

■ When Duchenne de Boulogne died on September 15, 1875, he had never received a hospital assignment, academic appointment, or official honor but, as he predicted, posterity remembered his various contributions. He pioneered studies of muscular functions, introduced electro-diagnosis and therapy, developed a biopsy technique, and first described bulbar paralysis, spinal muscular atrophy, and the form of muscular dystrophy that bears his name.

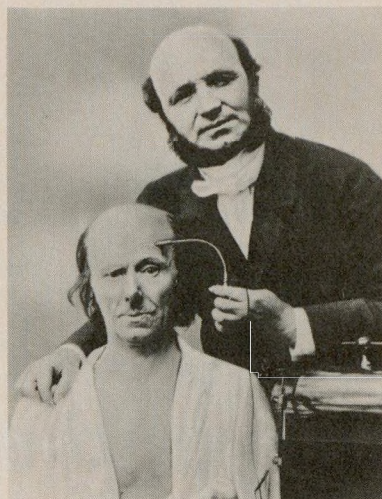
His monumental *Physiology of Movements*, which appeared in 1867 with his own fine illustrations, showed that muscles never act singly but in groups and that the same muscle may serve different functions. His work, *Mechanism of Human Physiognomy* was frequently quoted and its photographs copied in Charles Darwin's book on expressions in man and animals.

Initially regarded as a "crank," Duchenne haunted hospital wards in Paris and ransacked case reports searching for examples of unusual neurologic disorders and in many instances followed interesting patients for years. Once he began to publish his observations and the results of treating various ailments with faradization, patients sought his help and successful practitioners called him in consultation. Charcot said that the eccentric Boulognese clinician was his "master in neurology."

Seafarer's Son. The second of four sons of a French navy captain, Guillaume Benjamin Amand Duchenne was born on September 17, 1806, at Boulogne-sur-Mer. He attended college in Douai, showed an aptitude for the natural sciences, and after passing his baccalaureate entered the University of Paris. The medical faculty then included Jean Cruveilhier, Guillaume Dupuytren, and other distinguished physicians but they were unimpressed by the Boulognese student whose stocky physique, bronzed face, and brusque manner seemed more suited for a career on the high seas than in a consulting room.

In 1831 Duchenne received his

degree for a thesis on burns and returned to his native city to practice among the fisherfolk and marry Barbe Boutroy who died two years later of a puerperal infection leaving a son, Emile. One day in 1835 while performing an electropuncture on a patient with peripheral neuritis, Duchenne observed the contraction of a single muscle fiber. This stimulated his interest and he began to study "localized electrification" of muscles and nerves with a



Guillaume Duchenne de Boulogne faradizing a patient's forehead.

homemade faradic induction coil and batteries.

Following difficulties with his second wife, Duchenne moved to Paris, in 1842, set up his residence and office at 21 Boulevard des Italiens, and continued his experiments with electricity and photography. As a self-appointed physician-at-large, he spent each morning visiting hospitals and almshouses to gather clinical material. His first paper, published in *Comptes Rendus*, in 1847, indicated that if electrodes were placed on properly moistened skin the current's action was localized in adjacent muscles or nerves without causing any appreciable cutaneous sensation.

When it became known that Duchenne had successfully treated a few cases of deafness with faradization, he was besieged by patients and forced "willingly or oth-

erwise" to continue his experiments. He found that one congenitally deaf boy heard his first sounds during the fourth session of electrotherapy and subsequently learned to speak clearly. Duchenne also reported that electrocutaneous stimulation had terminated angina pectoris attacks of two patients and restored respiration and circulation in an asphyxiated boy.

Recognition. Duchenne, at first ridiculed, then tolerated, and finally recognized for his industry and perseverance, reported his observation in prolix papers but he was a timid, absent-minded poor speaker. It is said that his ideas were only made known to the Parisian profession through his colleagues. He described spinal progressive muscular atrophy in 1849, but it was not until his observations were summarized, with due credit, in François Aran's treatise that the disease attracted attention. Noted clinician Armand Trousseau popularized many of Duchenne's concepts and Charcot took the Boulognese physician on his service at Salpêtrière in 1862 and introduced him to neuropathology and histology. In exchange Duchenne showed his medical photography techniques to Charcot.

It is said that Duchenne was not contentious but he was often involved in disputes about the priority of some discoveries. He claimed that he was the first to describe locomotor ataxia but tabes had previously been recognized as a clinical entity by British and German physicians.

Duchenne's son, who was graduated from Montpellier with a thesis on infantile paralysis, practiced with his father for a brief period but at the age of 25 Emile developed schizophrenia and died in 1870. Guillaume Duchenne's last years were clouded by cerebral arteriosclerosis and in 1875 he had a stroke. According to some sources he was attended by Charcot and Edme Vulpian in his final illness while others report that he died a lonely, forgotten man. In 1897 a monument was erected to his memory at the Salpêtrière.