ÉDOUARD BROWN-SEQUARD (1817–1894)

ORN as he was on the British island of Mauritius of a French mother (Charlotte Séquard, a vivacious young lady) and an Irish-American father (a Philadelphia captain who was lost with his ship [piracy?] soon after the marriage), Brown-Séquard was a British subject who spent much of his life traveling back and forth between Mauritius, France, England and the United States. In Paris they called him Brown. This was natural, as he was born Charles Édouard Brown and did not take his mother’s name until 1846, and not until 1858 did he legalize it. Like Claude Bernard, he went to Paris with the intention of becoming a dramatic author. But he, too, soon destroyed his plays and enrolled as a medical student. By 1842 he was working under Trouseau and Rayer, the ablest clinicians of the time; again like Claude Bernard he preferred not to settle down to practice but to continue his physiological investigations. When in 1843 his mother,
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who had accompanied him to Paris and eeked out living for the
of them, suddenly died, the blow was such that he rushed back
to Mauritius in an almost delirious state of confusion. Finding
that the island had no proper niche for him, he returned to Paris
on borrowed money.

Portrait, courtesy of the National Library of Medicine, Bethesda, Maryland.
He was interested in digestion, and would swallow sponges, pull them up, saturated, by a string, and analyze the gastric juice. Soon he turned to the nervous system. His doctoral thesis (1846) foreshadowed the discovery always associated with his name: the syndrome following hemisection of the cord. The ideas in vogue regarding the functions of the different parts of the spinal cord were those of Sir Charles Bell in England, extended by F. A. Longet in France, who maintained that all sensation was carried in the dorsal columns. In his thesis, Brown-Séquard stated that after sectioning the dorsal columns of the cords of cold-blooded vertebrates, birds and mammals, sensation in every case persisted in the parts situated below the section. He also commented on the ease with which he had found sensory impressions to be transmitted from one side of the cord to the other. The thesis was shortly followed by a series of papers in which he clearly established that hemisection of the cord was succeeded by sensory loss on the opposite side of the body and retention and even increase of sensation on the same side.

His second important neurological observation completed Claude Bernard's discovery of vasomotor nerves, for Brown-Séquard was the first to show, in 1852, that stimulation of the cervical sympathetic nerve in the rabbit causes blanching of the ear.

All this time (from 1843 to 1852) he was living in desperate straits. His experiments were carried on in his apartment, and his animals were housed there. To reduce the need for much food he drank coffee incessantly; some eighteen hours of his day were spent writing, reading, experimenting; he became seriously ill from an infection following a wound in the dissecting room. Realizing the poor state of his health and position, and having become involved in revolutionary activities, he decided that he must go to America. He knew hardly a word of English.

He boarded ship armed with a letter from his young friend and partisan, Broca, addressed to the University of Pennsylvania: "... Brown-Séquard has imposed upon himself incredible sacrifices... and today has nothing left save an honorable character, profound erudition, and scientific articles which everyone can appreciate." In Philadelphia he eked out his earnings giving lectures, delivering babies at cut-rate prices, teaching French. The year not having brought him an appointment, he was again on the high seas in July, 1853, accompanied by his new American wife. Again
Paris was unheeding, and he and his wife continued on to Mauritius, there to find, in May, 1854, an epidemic of cholera which was to take the lives of 8000 people. Immediately he helped organize a hospital. He ingested material vomited by victims to test the efficacy of opium as a cure. Imagining that he himself had the symptoms—as the story goes—he took so large a dose of Laudanum that he almost died.

Fortune for once favoring him, he received an offer of a professorship, again on Broca’s recommendation, from the Medical College of Virginia, which he accepted. But he was to stay only about four months. To the faculty he had a “surplus of honesty” (he disapproved of slavery), with a lack of energy; his lectures were “not very unlike an attack of spasmodic asthma”; the agony of trying to make himself understood was, if anything, topped by the agony of his listeners, trying to comprehend. His demonstrations, by contrast, were “like wonders wrought by a stage magician.” Something was wrong, for in Paris this short wiry person had always been in constant motion and he had had a great gift of elocution.

Back again in Paris, in 1855, his practice as a neurologist began in earnest with the loan by Rayer of an electrical stimulator which he proceeded to apply with great skill to human patients. But observing convulsions in the guinea pigs upon the spinal cords of which he had performed various operations, he spent much of his subsequent life in the attempt to discover the causes and treatment of epilepsy. Later on, he was instrumental in introducing bromide for epilepsy, as suggested by Locock in 1857. His inquiring mind early led him into another field, endocrinology. Addison had published in 1855 his observations on the clinical effect of disease of the suprarenal capsules, and a year later Brown-Séquard showed how fatal adrenalectomy is. Toward the end of his life Brown-Séquard became uncritically enthusiastic over organotherapy—he had repeatedly injected into himself crude extracts of animal tissues—so that his career ended on a note of extravagant claims: attempts to isolate an effective testicular hormone to counteract senescence made him a laughing stock in some quarters. But he had greater vision than they knew.

In 1858 he undertook a course of lectures in several University centers in Great Britain, and in 1860 was appointed physician to the newly founded National Hospital, Queen Square—the second appointment on the first). Here Hughlings Jackson practice came. But £200 he insisted £10,000 to see a right person to adv.

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appointment on its professional staff (Jabez S. Rainskill received the first). Here he remained for about 4½ years. The young Hughlings Jackson fell under his spell. Honors and a lucrative practice came. But asked to see a patient in Liverpool for a fee of £200 he insisted that his ordinary fee would do; offered a fee of £10,000 to see a boy in Italy, he declined, saying he was not the right person to advise on the case.

Restless, his wife having died, he again set out for America, in 1866. Now a chair at Harvard was waiting for him. In 1866 he delivered the address opening the Medical Lectures at that school. "I would urge upon you," he said, "to make good use of those low creatures, endowed with so little sensibility,—the frogs, the fishes, and the turtles; to which list I might add the rabbits, animals whose sensibility is indeed so dull, that they will hardly stop eating a carrot (even when not particularly in need of food) while you are cutting their flesh..." Arguing that the use of such animals for experimenting was for the good of mankind he said, "I am selfish enough to prefer mankind to frogkind, rabbitkind, etc."

In 1868 he was back in France, probably for the sake of his twelve-year-old son. But since he could not be accorded professorial rank in Paris—he was still not a French citizen, not to speak of his libertarian leanings—he returned to America again, in 1870. The next eight years, in New York, though interrupted by trips to Europe, were his unhappiest: his second wife died after the birth of a daughter. He acquired a third, the widow of a painter.

Another sailing ship returned him to Paris in 1878, the only city he really cared for. Claude Bernard had just died. Taking out naturalization papers he became, finally, a real Frenchman, also Bernard's successor at the Collège de France, an office he happily fulfilled until his death from apoplexy fifteen years later.

During his Paris years he founded three journals devoted to physiology and published hundreds of articles. One of them, in 1876, dealt with his observation that cerebral-cortical ablation in certain regions was succeeded by gastric ulceration, an observation previously made (in 1844) by Moritz Schiff, who considered the ulceration due to local vasomotor paralysis (from lesions of the corpus striatum or cerebral peduncle); Brown-Séquard, disagreeing, contended that contraction of gastric arteries and veins was at fault. He dwelled on his view that neural activity at one level is
always colored and conditioned by what is happening at another, remote level, a notion independently elaborated by Sherrington later on. His public discourses became famous: at the International Congress of Medicine in Paris in 1867—the first of its kind—he was the most eagerly awaited speaker; however, owing to the sudden illness and death of a fellow Mauritian, he did not appear. Brown-Séquard left an enthusiastic group of young workers, the best known of whom were d’Arsonval and François-Franc; upon his passing, the great French school of experimental physiology—belonging to Magendie, Flourens, Claude Bernard and himself—was never the same again.

J. M. D. OLMSTED

References


JOANNES GREGORIUS DUSSEUR DE BARENNE (1885–1940)

The sudden death of Professor Dusser de Barenne on June 9, 1940, occurred at a time when international communications were seriously disrupted, and many of his colleagues in Europe were therefore long unaware that his brilliant career had been brought to an end. Dusser de Barenne, a native of the Netherlands, graduated from one of the foremost medical schools, entered the field of medical research, and was elected to the faculty of a respected institution in his native land. His work was widely recognized, and his contributions to the field of neurology were highly regarded. He is remembered as a distinguished scholar and a dedicated teacher.

Portrait, courtesy Yale Medical Library.