

a history of medicine in pictures

by George A. Bender

painting by Robert A. Thom

Charcot: Master of Neurology

ON THE LEFT BANK of the Seine, in Paris, not far from the Gare d'Orléans, there stands a large and venerable group of buildings on spacious grounds: the Salpêtrière. Some of its structures are centuries old; they have witnessed many stresses during French history, and have served Paris in many ways. They have experienced periods of intense activity, and of neglect. Their uses have been sometimes glorious, sometimes ignominious. Once far out on the outskirts of the city, the Salpêtrière today is within the heart of France's capital city and is one of the city's largest and most respected hospitals.

The Salpêtrière had its beginning when the French ruler, Louis XIII (1610-1643), ordered construction of a Little Arsenal on the remote site, so that citizens of Paris might be spared the danger of storage of explosives near their homes. Some time later, the Little Arsenal was abandoned, and the buildings fell into disrepair.

Toward the middle of the seventeenth century, Paris was plagued with an influx of thousands of persons rendered destitute by a series of intermittent civil wars, and with an alarming rise in acts of crime and violence. The President of the Parliament placed the buildings of the Salpêtrière at the disposal of Vincent de Paul, a priest noted for organization of charitable move-



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ments. It became, along with the Bicêtre, a part of the Hospice Général, for housing of indigents. In 1656, by royal decree, the Salpêtrière became a place for confinement of insane women and beggars. Soon, arrests built its population to overflowing, and new buildings had to be constructed. During the seventeenth and eighteenth centuries, the Salpêtrière was the largest asylum in Europe, having from 5,000 to 8,000 inhabitants. Primitive, unsanitary cells in a section called "les Loges des Folles" were reserved for demented women; and it was there that, beginning in 1795, Philippe Pinel pursued his efforts at rehabilitation of the insane.

During the early part of the nineteenth century, medical and surgical men were regularly appointed to the staff of the Salpêtrière. It was still a muddled, disordered home for infirm old women when Jean-Martin Charcot became chief of medical services, in 1862. When death ended his career, in 1893, he left at the Salpêtrière the largest, best organized and appointed neurological clinic in the world. During the same period, too, Dr. Charcot had brought the practice of neurology from a rudimentary, undeveloped state to that of a disciplined medical specialty; and, through well-trained pupils, had laid foundations for world-wide modern psychiatric and neurological services.

Jean-Martin Charcot was born November 29, 1825, in Paris. His father was a carriage maker of modest means. He received his early education at the Lycée Bonaparte. Early in life, he showed a better than average talent for art—an ability that was to be of great advantage to him during his teaching career. Young Jean-Martin was not the sociable type, and from an early age possessed the cold, taciturn personality that was to become so identified with him in later years. During his entire life he was a penetrating observer, and he loved to sketch. When he traveled, he made drawings of people and places. In the hospital, he sketched patients who exhibited unusual anatomic features. With a few pen strokes he could unmercifully caricature his contemporaries.

At age nineteen, Charcot began the study of medicine at the Faculté de Médecine associated with the University of Paris (the Sorbonne). He rose rapidly through the stages of extern and of intern. During his internship, he was particularly influenced by Professor Rayer, a friend of Claude Bernard, of Brown-Séquard, and of Berthelot. Charcot became an intern at the Salpêtrière in 1848, and there prepared his doctoral thesis, which he defended successfully in 1853. It was on the subjects of rheumatism and of gout. From 1853 to 1855, he was chief of clinics under Rayer at the Faculté de Médecine; and, in 1856, Charcot was appointed to the rank of hospital physician. In 1857, he became a candidate for the competitive examinations for a faculty position; but it was not until 1860 that he was successful and earned the right to teach at university level.

In 1862, Charcot became chief of the medical services at the Salpêtrière. At that time, he was 37 years old, and, while well trained, would not have been recognized by his contemporaries as having the experience from which greatness might be born. Within the next decade he was to win an international reputation as a researcher and teacher through his work at the great hospital. To many young physicians, assignment to this superannuated "old ladies' home" would have seemed deadly to ambitions. To Charcot, it was the opportunity of his lifetime. Here, virtually, was a small town within the big city: it had about 5,000 inhabitants, of whom 3,000 were neurotic paupers and epileptic patients;

800 were insane; and 250 incurable. This "pandemonium of infirmities" offered a veritable mine of neurological material, extraordinary in its variety and its extent. Almost every type of abnormal neurological manifestation could be found here—not in one, but in many patients. Furthermore, due to the advanced age or incurable status of many, there were multiple opportunities for verification of clinical hypotheses.

Charcot's first step was to establish a pathological laboratory. He felt that a good physician first of all had to be a good pathologist; and he proceeded to earn a reputation in this field before he began to concentrate on nervous disorders. His first book, based on his lectures, was on diseases of old age. By 1866, he had established his free public lectures on clinical subjects, using a hall in the old pharmacy as a forum. His teaching took two forms: these public lessons, given once a week; and daily lessons to his private pupils. Not a fluent speaker, Charcot was a man of few words; but those he uttered were carefully chosen and direct. He supplemented his lectures by a rare power of mimicry, by which he emphasized the various movements, gaits, and symptomatic clues to be observed in patients. His aim was, first of all, to make his pupils see for themselves. Patients were brought into the lecture room, one by one. The patient's history was briefly summed up by an assistant. If pertinent, Charcot asked the patient to disrobe. He would observe keenly, directing the patient to move or to respond so as to reveal some unexpected sign. At the end, he would quickly state his diagnosis; support it, if necessary, with comments and citations to literature; and follow with his therapeutic suggestions. He was quick to discern the difference between true epilepsy and hysteria; and he could spot malingering at a glance. It came to be a legend among patients at the Salpêtrière that "you can't fool Dr. Charcot."

Charcot insisted upon the "anatomico-clinical method" in his classes. Every description of a pathological condition was preceded by a discussion of normal histology of the part. Then the patient was examined.

Charcot is credited with introduction of

use of the clinical thermometer in France; and in time he introduced to his clinic the services of ophthalmologists, laryngologists, otologists, psychologists, and other specialists. He established special laboratories for microscopic work and for photography; a museum of pathology; and a section on artistic anatomy. In 1872, he succeeded Vulpian as professor of pathology at the Faculté de Médecine, but his principal teaching and research were carried on at the Salpêtrière.

It was said by Charcot's students that each year was marked by discovery of some new neurological entity. In 1864, Charcot studied muscular atrophy caused by poliomyelitis. In 1868, he went into miliary aneurism and its role in cerebral hemorrhage. Amyotrophic lateral sclerosis (which became known as Charcot's disease) held his interest in 1869. He did particularly brilliant work on multiple sclerosis (1863-1866) and on differentiation of this disease from parkinsonism. For years, he retained the services of a maid afflicted with multiple sclerosis so that he might better observe the condition. In 1880 came his important book on localization of disease-producing lesions in the brain.

Basically, Charcot's contributions to neurology fall into five groups: original descriptions of various nervous diseases having definite pathological basis; discovery of localization of functions of the brain and of the spinal cord from clinical and pathological examinations, mapping for future neurosurgeons the areas where they should look for these correlations; establishment that there are types of nervous diseases caused by psychic trauma, without physical lesions; investigation of hysteria, of hypnotism as the psychic equivalent of hysteria, and development of psychotherapeutic measures for treatment; and an exhaustive survey of paintings, photographs, engravings, and sculptures illustrating manifestations of nervous diseases, constituting an important contribution to the history of neurology. In addition to publication of many papers and books, he also found time to edit journals having relationship to his fields of interest.

It was through an administrative accident that Charcot began to study hysteria inten-

the picture Greatest neurologist of the nineteenth century, Parisian physician Jean-Martin Charcot (1825-1893) developed La Salpêtrière from an asylum for indigent women to one of France's leading hospitals. Charcot's study and care of its vast patient population led to creation of the world's leading neurological clinic; attracted students from many nations; raised neurology to a respected medical science. Some of Charcot's teachings inspired Sigmund Freud of Vienna (Charcot's student, 1885-1886) to develop the world-famous Freudian hypothesis on psychoanalysis and psychotherapy.

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sively. The Pavillon Sainte Laure in the Salpêtrière, which housed both hysterical insane and epileptic patients, was deteriorating, necessitating evacuation of patients. It became Charcot's duty to "sort them out." He found that hysterical young girls, housed with epileptic patients, soon began to mimic the convulsions and attitudes of epilepsy. In separating these patients from true epileptics, Charcot became interested in the causes and possible treatment of these patients. Many of his ideas have since been outmoded by newer concepts, but at their time they constituted a beginning of concern for these psychiatric patients. Employing isolation, understanding, and psychologic suggestion, he was able to improve the condition of an appreciable number of them.

Charcot's investigations into hypnotism (then regarded only as in the domain of charlatans) were impelled by his desire to study comparisons with hysterical states, and by the hope that patients suffering from hysteria might be treated by hypnotism. He finally discarded hypnotism as a suitable therapeutic tool in care for such patients.

Charcot attracted students from many foreign nations to his lectures at the Salpêtrière (where, in 1882, a special professorial chair in clinical neurology was established for him). Among them were gifted, original men like Joseph Déjerine, Pierre Marie, Joseph Babinski, Gilles de la Tourette, F. Raymond, H. Meige, and P. Richer. These men did much to carry forward the science of neurology from foundations laid by Charcot. Another famous student was Sigmund Freud, who studied under Charcot in 1885 and 1886. Freud himself admitted that his ideas concerning psychoanalysis grew out of one of Charcot's remarks about the importance of sexual incompatibility in marital unhappiness. Charcot's ideas of stimulating the patient to talk about his problems was the germ from which grew the Freudian concept of "mental catharsis" by psychoanalytic methods as a means of relieving disturbed minds. Freud also translated some works of his teacher into German. Charcot thus could be called the "grandfather" of modern psychotherapy.

Shortly after Charcot assumed responsibility for services at the Salpêtrière, in 1862, he married Madame Durvis. She was a woman of

beauty, wealth, and social charm; their home life was a happy one. Madame Charcot's daughter by her first marriage eventually married one of Charcot's interns, Henri Liouville. The Charcots had one daughter, Jeanne, born in 1865, and a son, Jean, born in 1867. Though Jean Charcot studied medicine and became a physician, after his father's death he turned to his first love, the sea, commanded several ships, and earned fame for himself as an arctic and antarctic explorer.

Despite his cold exterior and autocratic mien, Charcot, a handsome man, was kind to his interns, and treated them almost as sons. Like all persons who attain fame, he had his enemies and his detractors; but he also had influential friends, and he was recognized internationally for his work. In perspective, he looms as the greatest neurologist of the nineteenth century, and one of the most eminent clinicians in the latter half of that century.

Only in his last years did Charcot lose the speed and physical vigor for which he was noted. His heart began to trouble him, but his mind remained clear, and he maintained his autocratic dominance over clinics at the Salpêtrière. In August, 1893, with two friends who had been former students, Charcot went on a vacation trip into the Morvan, a district southeast of Paris. There, he died suddenly, on August 16, 1893, following an attack of angina pectoris and congestion of the lungs. His funeral was held at the chapel of the Salpêtrière, and he was buried in the Cimetière Montmartre. A bronze statue, erected by commission of his former students, stood before the entrance of the venerable hospital until it was pulled down and melted as scrap metal by Nazi occupation troops during World War II.

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