

MD REMEMBERS: Father of Medical Statistics

■ In the early 19th century when Paris was the medical Mecca of the world scores of young American physicians crossed the seas to study under Pierre-Charles Alexandre Louis, the founder of medical statistics. Before the famous French clinician died in 1872 he had established an academic progeny that a British colleague said "knew no distinction of race or even color but coalesced into a noble band of enthusiasts in the cause of medicine, of science and of humanity."

Louis, who was born on April 14, 1787 to a family that kept vineyards in Ay on the Marne river, had planned to be a lawyer but midway in his studies he changed to the faculty of medicine, first at Rheims and then at the University of Paris. After graduating in 1813 he was deciding where to practice when a family friend comte de Saint-Priest stopped in Ay and persuaded the neophyte physician to accompany him to Russia.* With a diploma from St. Petersburg, Louis conducted a peripatetic practice as he traveled with the count for three years and then settled in Odessa. His career in the Black Sea port was quite successful but he was so disturbed by the high mortality among his young patients in a diphtheria outbreak that he returned to Paris in 1820 to continue his studies.

For the next seven years he gave up all private practice and worked first at the Children's Hospital and later in the Charité hospital. Initially he volunteered to assist his friend and former pupil Auguste F. Chomel at the Charité but subsequently he became *chef-de-clinique* at the hospital. He made meticulous and detailed studies, collected voluminous notes on the circumstances associated with the onset of a disease, its clinical course and the autopsy findings. Some colleagues ridiculed his observations and records but this extensive data and his "numerical method" of analyzing various factors provided the foundation for medical statistics.

By using the statistical method he showed that bloodletting was of little benefit in the treatment of

pneumonia, at a time when as many as 50 leeches were applied to a single patient. He also rejected the practice of blistering pleurisy patients after analyzing the results of treatment in 140 cases. Military physician François-Joseph-Victor Broussais who advocated massive bleeding accused Louis of dishonesty but in the ensuing polemics Louis demolished the older physician's theory that gastroenteritis was the basis of all pathology.

During the period he devoted to hospital work Louis published treatises on intestinal perforations, croup in adults, pericarditis, the communications between the heart chambers and the pathologic anatomy of gastric mucosa. He wrote memoirs on liver abscess, the spinal marrow in Pott's disease, the treatment of Taenia, the characteristics of sudden and slow deaths. Based on a study of 1960 cases of tuberculosis (and 358 autopsies) Louis published a classic monograph in 1825 in which he pointed out that the disease generally begins in the left lung and that lesions in any part of the body are probably disseminated from the primary site. He also reported that in the early stages of the disease patients seemed to experience stronger sexual desires than when they were in perfect health, possibly because idleness provided "the most favorable condition for the play of imagination in such matters."

In 1828 Louis and two colleagues went to Gibraltar to investigate a yellow fever epidemic for the Paris Academy of Medicine. Their report of the symptoms and morbid anatomy of the disease was translated into English by Dr. George C. Shattuck and was published as a volume of the Massachusetts Medical Society's *Library of Practical Medicine* five years before it appeared in French. The paper noted that the most remarkable hepatic sign in the disease was the liver's color which might be that of fresh butter, straw, mustard, oranges, pistachios or coffee and milk.

One of Louis most noted contributions was his study of the autopsy findings of 50 patients who

had died of typhoid fever and his description of the characteristic changes in Peyer's glands. While it remained for Louis' Philadelphia pupil Dr. William W. Gerhard to differentiate between typhoid and typhus fever, Louis presented an accurate picture of the symptoms



and pathology in typhoid fever.

Louis was the first physician after Sir John Floyer to use a watch to count the pulse, a practice that was followed by his many British and American students. While he was a reserved, self-effacing man who was ill at ease in the lecture room, he exerted a tremendous influence on his pupils who "caught his clear accents, learned his great language, made him their model."

Sir William Osler said that no French writer of the century had as large an audience as Louis who "possessed a singular power of attracting hard-working, capable men." Among the French clinician's American students were Drs. Valentine Mott, Sr., Alonzo Clark and John T. Metcalf of New York, Philadelphia's Drs. George W. Norris, John B. Biddle and William Pepper, Sr. Dr. John Collins Warren, the founder of Massachusetts General Hospital, was past middle age when he went to Paris to study with Louis; other Boston pupils included Drs. Oliver Wendell Holmes, Henry I. Bowditch, James Jackson, Jr., and from Baltimore, William Power.

* As ambassador in Constantinople he helped to give the Crimea to Russia.