

LAENNEC

In the small French town of Quimper, on the coast of Brittany, stands an imposing statue of its most famous citizen, Rene Laennec, bearing the modest inscription, 'To the inventor of auscultation.' Today, two hundred years after his birth, we honour his memory not merely as the inventor of the stethoscope, but as the father of modern chest medicine.

Laennec's early medical training took place in Paris, in the lively surroundings of the most renowned medical faculty in Europe. It boasted an illustrious school of morbid anatomy, headed by Bichat, Courvisart, and Bayle, and as a young medical student he was greatly influenced by their example. In the Hôpital de la Charité it was the practice to perform autopsies on all patients who died there, so that a wealth of pathological material was available for study. Laennec was quick to see the value of this line of investigation and from 1802 onwards he published a series of papers based on his autopsy findings. Two of these papers were of special interest: one, a description of the gross pathology of portal cirrhosis, a condition which still bears his name, and the other, a demonstration for the first time that hydatid cysts in the liver and lungs were parasitic in origin. Laennec quickly developed a special interest in diseases of the chest and one of his major achievements was to define the gross pathology of all the main diseases of the lungs and pleura. His work in elucidating the pathology of tuberculosis in all its different forms was of outstanding importance (see Bishop, p. 129), and prepared the ground for the subsequent research of Villemin and Koch which culminated in the discovery of the tubercle bacillus.

Superb pathologist though he was, Laennec was more interested in the living patient than the cadaver. His clinical approach was modelled on the methods introduced over 2000 years earlier by Hippocrates, who taught that clinical diagnosis should be based on observation of the patient. In order to study the *Corpus Hippocraticum* Laennec learned Greek, and the title of his M.D. thesis, presented in 1806, was 'Propositions sur la Doctrine d'Hippocrate relativement à la médecine pratique'.

Laennec searched for the diagnostic symptoms and signs of disease and he was particularly interested in eliciting physical signs. Diagnosis of lesions hidden deep inside the chest presented a challenge which he met by applying two new methods of examination, percussion and auscultation. Percussion of the chest had already been introduced by Auenbrugger in 1761, but its value was not immediately realised. Mediate auscultation was Laennec's own invention and with the aid of his new stethoscope, a simple wooden cylinder, he set to work to analyse and define all the varieties of breath sounds and added sounds (*râles*) that were to be heard in different diseases of the chest. He attached special importance to pectoriloquy and bronchophony as heard over large tuberculous cavities, and aegophony as a sign of pleural effusion.

Laennec's fame would have been secure had he chosen to confine his studies either to morbid anatomy or to clinical medicine. His greatest achievement however, was to link together the two fields of study. By observing his patients both *ante mortem* and *post mortem* he was able to correlate the clinical features of disease with the pathological lesions found at autopsy. Thus in his classic book 'Traité de l'Auscultation Médiate', are written masterly original descriptions of the clinico-pathological features of all the main diseases of the lungs and pleura. The subjects he covered included *phthisis pulmonalis*, pneumonia, pulmonary emphysema, bronchitis, lung abscess, dilatation of the bronchi (bronchiectasis), hydatid disease, pulmonary infarct and pulmonary oedema; pleurisy, empyema and pneumothorax.

Laennec's work gave rise to much disagreement and criticism from many of his contemporaries. His introduction of the stethoscope was greeted with deep suspicion and his proposal

that all the varied manifestations of tuberculosis were part of the same disease was contradicted by many pathologists, including Virchow. Fortunately, although a quiet man and physically frail, Laennec had the strength of character to carry on with his work despite criticism and even ridicule. He was a brilliant teacher and his ward rounds, which were conducted partly in Latin, attracted students from many parts of the world. By the time he died, in 1826, the importance of his work had become widely recognized and the stethoscope was becoming accepted as the physician's most important instrument of diagnosis. The discovery of X-rays at the end of the century, with the subsequent development of chest radiography, increased the scope and accuracy of clinical diagnosis, as did the introduction later of bronchoscopy, radio-isotope scanning, and, most recently of all, computerised axial tomography. Despite these important advances, however, the clinical methods which were devised and validated by Laennec almost 200 years ago remain fundamental to the diagnosis of all types of respiratory disease.