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A French physician, Rene Laennec of Quimpec (1781-1826, Figure 1) set the medical profession on its ear with the invention of the stethoscope. In 1816, the 35 year old physician was examining young women with baffling heart problems. She was stout and well endowed and he was embarrassed at putting his ear to the bosom of his female patient. He recalled the childhood trick of scratching the end of a log with a pen. The sound transmitted loud and clear.

Figure 1. Rene Laennec



Laennec made a laminated “log” by rolling 24 sheets of writing paper into a compact cylinder. In his words he

“...applied one end of it to the region of the heart and the other to my ear, and was a little surprised and pleased to find that I could thereby perceive the action of the heart in a manner much more clear and distinct than I had ever been able to do by the immediate application of the ear.”

In addition, the young lady’s modesty remained intact. This success was followed by a solid wood cylinder. Further experiments produced a tube with a drilled center. In 1819 Laennec published his, “On Mediate Auscultation-classification of all cardiac and respiratory sound.” Many of the old guard, unable to sort out the rumbles, wheezes, and murmurs of the stethoscope, defended the ear-on-chest method. But in spite of such obstructionists, the stethoscope had become the badge of the progressive physician by 1820.

The London Medical Journal of 1827-1828, reported that there were physicians who jumped on the stethoscope bandwagon for the sake of appearances. One such, placed the wrong end of the stethoscope to his ear while holding the opposite end against the patient’s chest. He reported a respiratory murmur which turned out to be the rattle of a hackney coach passing on the street below. In 1837, Oliver Wendell Holmes returned from his Paris studies and wrote a plea to his countrymen for a wider use of the stethoscope for direct exploration of the chest. By 1850 there were relatively few who were not using the monaural instrument in office diagnosis.

There were many preferences for this new “mediate” auscultation (see Figure 2). Some favored a solid turned cylinder, but most felt a hollow stethoscope allowed both wood and air to vibrate. Austin Flint, the most knowledgeable nineteenth century cardiologist, felt that wood did not conduct sound as well as metal or glass, but was lighter to use. He recommended the straight-fiber ebony and cedar. The latter, as well as pine, did not feel cold on the skin and were preferred by patients. These woods were less easily broken.

Other woods included cherry or other fruitwood, mahogany and boxwood. Pewter, brass, silver, gutta percha and even papier mache were fashioned into monaural. Ivory was a handsome medium, but its poor sound-conduction qualities relegated it to such as ear and chest pieces.

Figure 2. Types of Stethoscopes



By 1840, American physicians and the monaural stethoscopes were no longer strangers, but it was generally felt that the ear to the chest served the purpose as well. By the 1850's the stethoscope had become a mainstay of the physical examination. Countless styles and shapes were introduced in the last half of the nineteenth century, and most were advertised in the United

States up to the First World War. But our physicians turned a deaf ear on the monaural in the 1860's when Cammann's binaural stethoscope made it obsolete.

The Delaware Academy of Medicine has a number of stethoscopes, and images, books, and journals chronicling the importance of this simple diagnostic tool which revolutionized the practice of medicine by allowing the physician to listen to the lungs, heart, digestive tract, and during pregnancy. Before the stethoscope, doctors listened by auscultation - listening by placing the ear on a patient's chest.

The public health benefit of being able to listen to the patient's body with accuracy and precision was a significant step forward. However, stethoscopes are not without their detractors. Along with poor hand washing behaviors, they can act as a vector of transmission of antibiotic resistant microorganisms, especially troubling in nosocomial infections.

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