



Medical History

William Withering and Digitalis

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DESPITE many new methods of diagnosis and treatment the cardiologist today would be sadly crippled without a stethoscope and digitalis. The former was the invention of the French physician, Laennec; the latter was the contribution of an English doctor of the 18th century, William Withering. Like Jenner who took a country tradition about cowpox and developed smallpox vaccination; Withering took a similar tale about the efficacy of a local herb medicine and brought about the introduction into medical practice of one of the most useful of all drugs.

Withering was born on March 17, 1741 in Shropshire, England, the son of a country doctor. He studied medicine at the University of Edinburgh where he graduated in 1766 and then spent 10 years in the small town of Stafford. In 1776 he moved into the rising industrial city of Birmingham. It was at about this time that his attention was first drawn to the foxglove as a medicinal plant. Here are his own words in describing how it came about:

"In the year 1775 my opinion was asked concerning a family recipe for

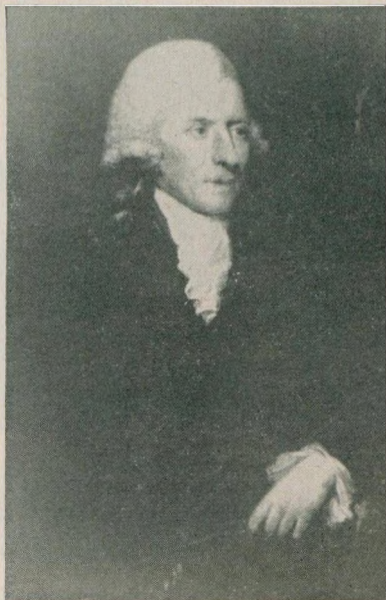


Fig. 1. William Withering, F.R.S., F.L.S., etc. Portrait by Von Breda, 1792.

the cure of dropsy. I was told that it had long been kept a secret by an old woman in Shropshire who had sometimes made cures after the more regular practitioners had failed. . . . This medicine was composed of 20 or more different herbs; but it was not very difficult for one conversant in these subjects to perceive that the active herb could be no other than foxglove".

Withering soon began a study of the drug using first a decoction but eventually employing the dried leaves that were rubbed into a "beautiful green powder". His dose was 1 grain of the dried leaves twice a day. He was convinced that in domestic medicine it had been employed in too

large amounts and produced severe toxic effects. He tells this story of such a case:

"I have lately been told that a person in the neighborhood of Warwick possesses a famous family recipe for the dropsy, in which the foxglove is the active medicine, and a lady from the western part of Yorkshire assures me that the people in her county often cure themselves of dropsical complaints by taking foxglove tea. In confirmation of this I recollect about 2 years ago being desired to visit a travelling Yorkshire tradesman. I found him incessantly vomiting, his vision indistinct, his pulse 40 in a minute. On inquiry it came out that his wife had stewed a large handfull of green foxglove leaves in half a pint of water and given him the liquor which he drank at a draught, in order to cure him of an asthmatic affection. This good woman knew the medicine of her county but not the dose for it, for her husband narrowly escaped with his life".

Withering employed digitalis in his own practice with great success and induced other physicians in Birming-

ham to use it. He kept careful notes on his cases and in 1785 published his celebrated little book *An Account of the Foxglove and Some of its Medicinal Uses*. This became a sort of a medical best seller and physicians everywhere began to use digitalis. The drug was included in the pharmacopoeias of the day. It is still in them, 170 years later, and any attempt to remove it would create a mutiny among cardiologists.

Withering died at his home in Edgbaston, a suburb of Birmingham, on October 6, 1799. He is buried in Edgbaston church and a wreath of foxglove forms part of the sculptured marble tablet over his tomb.

In addition to having made one of the most important contributions of the 18th century to medicine, Withering was a botanist of some note and wrote an excellent account of British plants. He was also an amateur chemist and mineralogist. The well known qualitative test for sulfates with barium chloride was discovered by him. The botanical genus *Witheringia* and the mineral *Witherite* are named for him.

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