The Dawn of Modern Medicine

The event that dominated 17th-century medicine and marked the beginning of a new epoch in medical science was the discovery of how the blood circulates in the body by the English physician and anatomist William Harvey. Harvey's "Essay on the Motion of the Heart and the Blood" (1628) established that the heart pumps the blood in continuous circulation. The Italian anatomist Marcello Malpighi advanced Harvey's work by his discovery of tiny blood vessels called capillaries, and the Italian anatomist Gasparo Aselli provided the first description of the lacteals, capillaries found in the lymphatic system. In England the physician Thomas Willis investigated the anatomy of the brain and the nervous system and was the first to describe diabetes mellitus. The English physician Francis Glisson advanced the knowledge of the anatomy of the liver, described the nutritional disorder rickets (sometimes called Glisson's disease), and was the first to prove that muscles contract when activity is performed. The English physician Richard Lower studied the anatomy of the heart, showed how blood interacts with air, and performed one of the first blood transfusions.

The French mathematician and philosopher René Descartes, who also made anatomical dissections and investigated the anatomy of the eye and the mechanism of vision, maintained that the body functioned as a machine. This view was adopted by the so-called iatrophysicists, such as Italian physician Sanctorius, who investigated metabolism, and the Italian mathematician and physicist Giovanni Alfonso Borelli, who worked in the area of physiology. Opponents of this view were the iatrochemists, who regarded life as a series of chemical processes, including Jan Baptista van Helmont, a Flemish physician and chemist, and Prussian anatomist Franciscus Sylvius, who studied the chemistry of digestion and emphasized the treatment of disease by drugs.

The English physician Thomas Sydenham, called the English Hippocrates, and later the Dutch physician Hermann Boerhaave, reestablished the significance of bedside instruction in their emphasis on the clinical approach to medicine. Sydenham carried out extensive studies on malaria and introduced the new treatment quinine, obtained from cinchona bark, into Europe in 1632. After the invention of the first compound microscope in 1590, Dutch scientist Antoni van Leeuwenhoek used this groundbreaking technology in 1676 to identify organisms later called bacteria. This was the first step toward recognition that microbes were the cause of infectious disease.