

Microscope

Historical Perspective

Every field of study and every trade requires a unique set of tools. Carpenters use hammers and levels, English majors all have grammar manuals and for the biologist, the fundamental tool is the microscope. Today, the use of the microscope and images of tiny organisms and molecules is taken for granted, but that has not always been the case. The use of glass to magnify images is known as far back as first century Rome. However, what is now called a compound light microscope was not invented until 1590 when Zacharias Jansen and his father Hans mounted two glass lenses at opposite ends of a tube. It was another eighty years before "Micrographia," the first pictorial study of objects using the microscope was published by Robert Hooke. The "Micrographia" contained images of thinly sliced cork. Cork is a dead tissue from the outer bark of an oak tree. Hooke described the structures he saw in the cork slices as "cells". The term cell, as the individual and fundamental unit of life is still in use today. Less than ten years after the "Micrographia" was published, Anton van Leeuwenhoek observed and produced remarkably detailed images of protozoa, sperm, and bacteria. Since then the technology of microscopy has advanced at incredible rates and continues to push the limits of magnification.