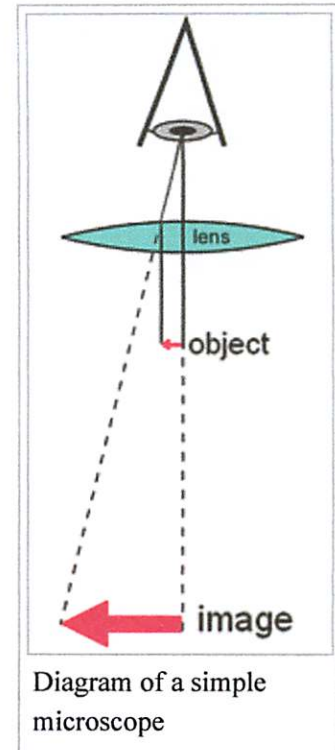
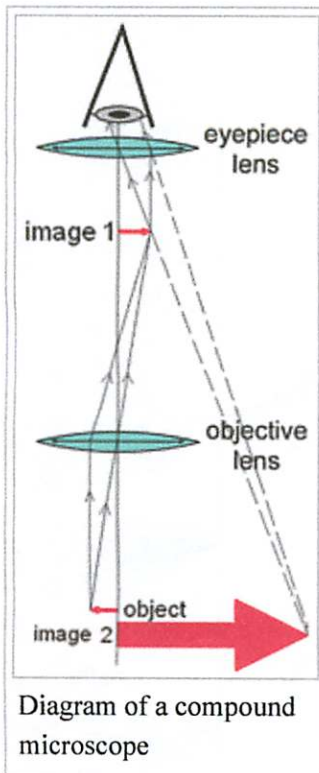


Simple microscope

A **simple microscope** is a microscope that uses a lens or set of lenses to enlarge an object through angular magnification alone, giving the viewer an erect enlarged virtual image.^{[3][4]} Simple microscopes are not capable of high magnification. The use of a single convex lens or groups of lenses are still found in simple magnification devices such as the magnifying glass, loupes, and eyepieces for telescopes and microscopes.



Compound microscope



A **compound microscope** is a microscope which uses a lens close to the object being viewed to collect light (called the objective lens) which focuses a real image of the object inside the microscope (image 1). That image is then magnified by a second lens or group of lenses (called the eyepiece) that gives the viewer an enlarged inverted virtual image of the object (image 2).^[5] The use of a compound objective/eyepiece combination allows for much higher magnification, reduced chromatic aberration and exchangeable objective lenses to adjust the magnification. A compound microscope also enables more advanced illumination setups, such as phase contrast.

History

Invention

It is difficult to say who invented the compound microscope. The Dutch spectacle-maker Zacharias Janssen is sometimes claimed to have invented it in 1590 (a claim made by his son and fellow countrymen, in different testimony in 1634 and 1655).^{[6][7][8]} Another claim is that Janssen's competitor, Hans Lippershey, invented the compound microscope. Another favorite for the title of 'inventor of the microscope' was Galileo Galilei. He developed an *occholino* or compound microscope with a convex and a concave lens in 1609. Galileo's microscope was celebrated in the Accademia dei Lincei in 1624 and was the first such device to be given the name "microscope" a year later by fellow Lincean Giovanni Faber. Faber coined the name from the Greek words *μικρόν* (*micron*) meaning "small", and *σκοπεῖν* (*skopein*) meaning "to look at", a name meant to be analogous with "telescope", another word coined by the Linceans.^[9]

Christiaan Huygens, another Dutchman, developed a simple 2-lens ocular system in the late 17th century that was achromatically corrected, and therefore a huge step forward in microscope development. The Huygens ocular is still being produced to this day, but suffers from a small field size, and other minor disadvantages.