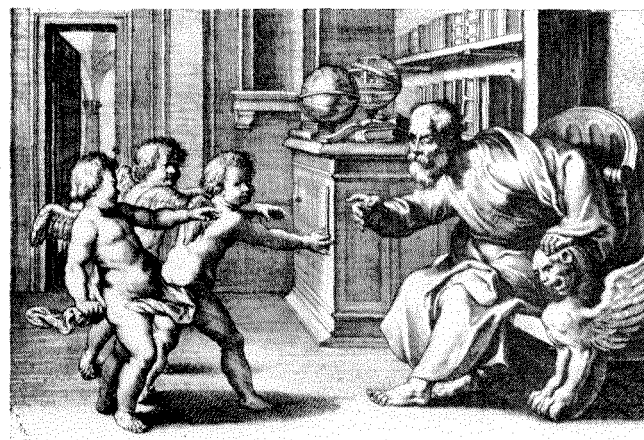




1. Rubens' illustration for the first of the Six Books ON OPTICS shows cherubs dissecting the eye of a cyclops.



2. Second book describes uses of optical instruments that depend upon the linear propagation of light.



3. The third book discusses the perception of such things as size, shape, position, distance, and motion.

## Science in Art

# RUBENS AS A

WHILE PETER PAUL RUBENS (1577-1640), the great Flemish painter, exerted an enormous influence upon the art of engraving and designed frontispieces for approximately 50 books, only seven or eight books are known with certainty to have been fully illustrated by him. Fortunately, one of these seven is of considerable scientific interest, and Rubens' illustrations make it one of the finest scientific books of its period.

The *Opticorum libri sex philosophis iuxta ac mathematicis utiles* by Francis Aguilon is a thick folio volume of more than 700 pages published at Antwerp in 1613. As the title indicates, it consists of six books on optics. Each book is introduced by a large allegorical vignette engraved by Th. Galle from drawings made by Rubens. The work derives its importance from the fact that it lays the foundations of horopterology, provides excellent treatments of such subjects as binocular vision, projections, and so on, and introduces the term "stereographic projection."

The first of the *Six Books on Optics* deals with "The Organ, Object and Nature of Vision"—the term "object" being used with its original meaning, of that which presents itself to the senses. Thus light and color are "objects" of vision. Plate 1 reproduces the vignette that introduces this book. It shows cherubs dissecting the eye of a cyclops under the scrutiny of a teacher.

The second book deals with "Optical Rays and the Horopter." Its vignette (Plate 2) shows the same fig-

*One of a series of articles devoted to reproductions of print drawings and paintings of interest in the history of science-*

# SCIENTIFIC ILLUSTRATOR

by E. C. WATSON

ures using a variety of optical instruments that depend upon the linear propagation of light.

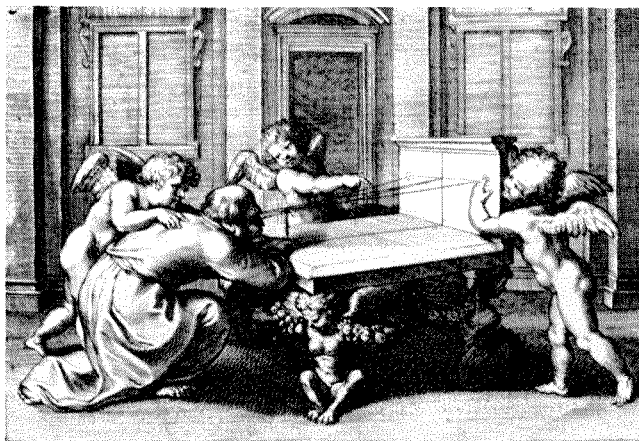
The third book discusses the perception of such common "objects" as size, shape, position, orientation, distance, continuity, discontinuity, motion, rest, and so forth. It is charmingly summarized by the vignette reproduced here as Plate 3.

The fourth book is entitled "Visual Fallacies" and Plate 4 illustrates one of the many optical illusions that are discussed in detail.

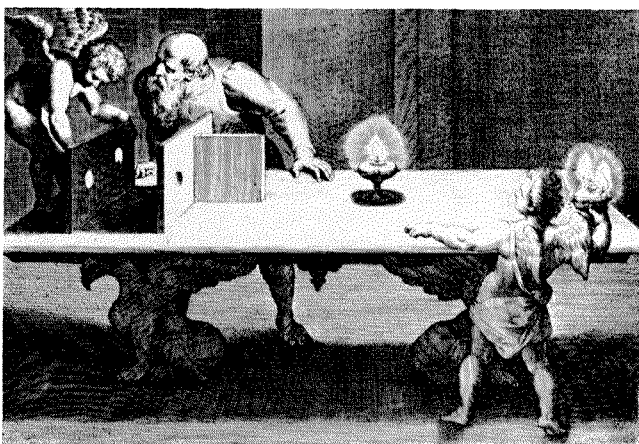
The fifth book deals with "Light and Shade." The vignette in this case (Plate 5) is of especial interest for it clearly portrays a photometer experiment. The invention of the photometer is usually credited to Pierre Bouguer (1698-1758), but here in an engraving executed more than a hundred years before Bouguer's first publication we have a clear, as well as artistic, portrayal of a working photometer with all its essentials.

The sixth and last book occupies nearly a third of the whole volume. It is entitled "Projections," and deals with perspective and scenography as well as with both orthographic and stereographic projections. Its vignette (Plate 6), like the other five, is not only artistic but also quite appropriate to the text.

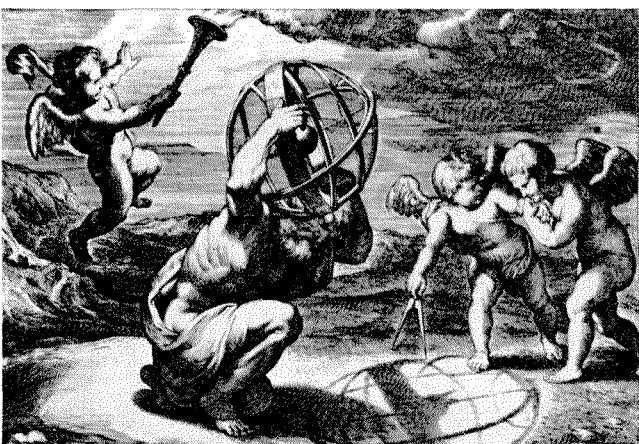
Taken together, these six beautiful engravings display a very considerable comprehension of the principles of optics on the part of one of the world's greatest and most prolific artists.



4. Rubens' illustration for the fourth book, "Visual Fallacies," shows a typical optical illusion.



5. Illustration for the fifth book, which deals with "Light and Shade," portrays a photometer experiment.



6. Sixth book deals with perspective, scenography and orthographic and stereographic projections.