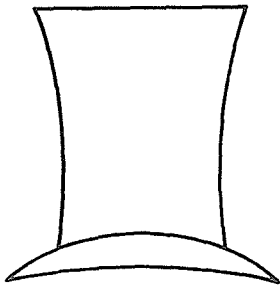


*Science & Technology***SEEING: Illusion, Brain and Mind**

by John P. Frisby
Oxford, 1980
160 pp. \$16.95



Roxby Press, Ltd.

In talking about sight, we frequently resort to the inadequate model of photography. This analogy explains the first steps in the process of seeing, in which the eye, like a camera's lens, focuses an image of the world on its retina. But vision, notes Frisby, a British psychologist, involves more than just mirroring light patterns back to the brain. A camera, television, or computer printout can replicate reality but cannot see. The eye extrapolates. Shape, texture, movement, size are all "seen." Furthermore, "brain pictures" are not made with photographic accuracy; our minds "expect" to find certain patterns and will impose them where they do not exist. (The top hat at left, for example, is actually as wide as it is tall, contrary to what our eyes, overestimating vertical lengths, tell us.) Frisby also discusses the roles played by environment and heredity in sight development. Studies suggest that Asians have less difficulty than Caucasians in distinguishing between vertical or horizontal lines and oblique ones, he notes. Kittens reared in a drum painted solely with horizontal stripes develop only horizontally tuned striate nerve cells in the cortex of the brain—the body's visual center. Frisby's clarifications of as yet unanswered questions about eyesight inspire the reader's awe of this "familiar" function.

FROM ATOMS TO QUARKS: An Introduction to the Strange World of Particle Physics

by James S. Trefil
Scribner's, 1980
225 pp. \$12.95

When Ernest Rutherford and Niels Bohr discerned the atom's structure in the early 1900s, scientists thought they had found the basic building blocks of all matter (protons, electrons, and, possibly, neutrons). They had not. By the early 1960s, hundreds of additional particles (neutrinos, positrons, mesons, baryons, to name a few) had been discovered. Trefil, a University of Virginia physicist, traces scientists' confusion about the properties of these new particles: Experimenters could not predict where they would turn up. "Once more," he writes, "our picture of the