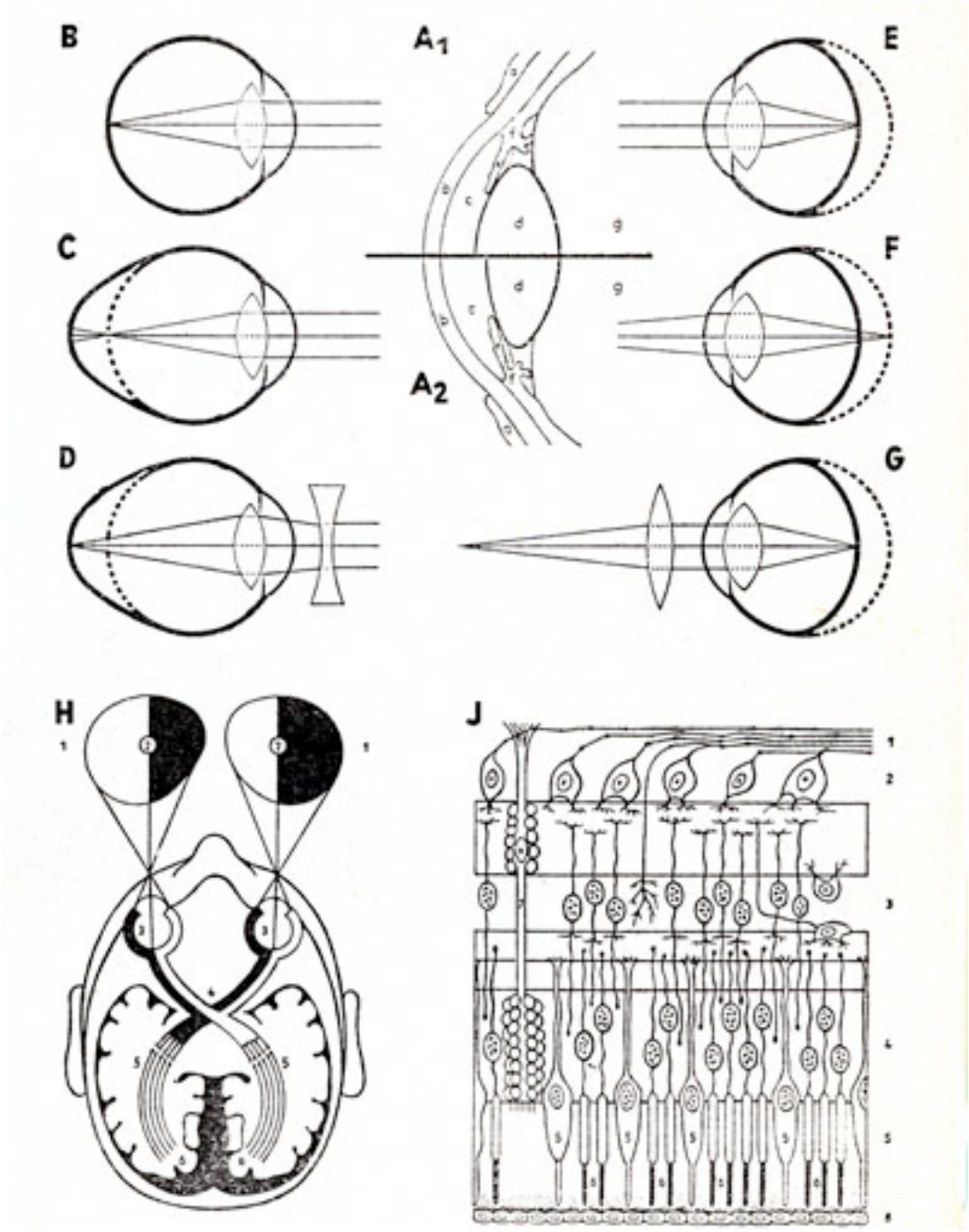
THE EYE II



A

a. eyelid
b. cornea
c. anterior chamber of the eye
d. crystalline lens
e. iris
f. ciliary muscle
g. vitreous body

The lens, in its relaxed state, is convexed, highly refractive and accommodated for near vision. It can be flattened by the radially acting ciliary muscles and accommodated for far vision.
A_1 = lens accommodated for near vision
A_2 = lens accommodated for distant vision

B **Light pathway in a normal eye**

The rays of light come from a distance and strike the cornea in parallel rays. They are converged by the convex lens and fall on the retina forming a sharp image there.

C **Light pathway in a myopic eye, accommodated for distant vision**
The anterior-posterior diameter of the eyeball is too long. In spite of maximum flattening, the lens cannot sufficiently converge the parallel rays, coming from a distance, to form a sharp image on the retina, since the retina lies too far away. The rays converge at a point before the retina and thus form only a blurred image on the retina.

D **A myopic eye, corrected by a dispersing-lens**
A dispersing-lens disperses the parallel rays coming from a distance. The rays then converge at a point similar to that at which rays from near objects converge. In this way, the myopic eye can distinguish distant objects with clarity, too. Near objects can be distinguished with clarity by intensified curvature of the eye-lenses, if you place a dispersing glass before the eye.

E **Light pathway in a long-sighted eye, accommodated for distant vision**
The anterior-posterior diameter of the eyeball is too short. By using its maximum power of refraction the lens can converge the rays, coming parallel from a distance, on the retina shifted before to form a sharp image there.

F **Light pathway in a long-sighted eye, accommodated for near vision**
Rays coming dispersedly from a near point cannot be converged but behind the retina in spite of maximum thickening of the lens. The image is blurred.

G **A long-sighted eye, corrected by a converging lens**
The converging lens placed before the eye gives the rays coming dispersedly from a near point a parallel direction. These rays - as if coming from a distance - are converged on the retina and give a sharp image there.

H **Scheme of visual axis**
field of vision
blind spot where the optic nerve enters the retina
eyeball
optic chiasma
visual axis
visual center in the posterior lobe of the cerebrum

J **Minute structure of the retina**
nerve fiber layer
ganglion cell layer
internal granular layer
external granular layer
uvulae
rods
sustentacular fibers
layer of pigment cell