Sclera of transparent onion-like layers. its shape

Sclera is the outer covering of the eye which is opaque and consists of a white coating.

In front of the eye, it becomes transparent and is called cornea. Light enters the eye through the cornea. From cornea it comes to the iris. The colour of the iris is the colour of a person’s eyes. Iris controls the size of the opening known as pupil. Pupil controls the amount of light entering the eye.

Lens is situated immediately behind the iris and consists of a series of transparent onion-like layers. Its shape can be altered by the contradiction of the ciliary muscles. The lens becomes thinner when the object we are trying to see is far away and thicker when it is near. Between the cornea and the lens, lies a jelly-filled liquid called the aqueous humor.

Between the lens and the retina is a liquid-filled substance called vitreous humor. Choroid layer is the second layer of the eye. It consists of a darkly pigmented layer of tissue that has two basic functions: (a) To support the blood vessels that supply fuel to the retina and (b) To absorb light waves that are scattered after corneal refraction. If choroid coat did not prevent these scattered rays from striking the retina, the image you would perceive would be blurred. Retina is the inner most layer of the eyes. The retina is essentially a membrane consisting of three layers of cells. One layer is made up of only receptor cells. These receptor cells are called the rods and the cones.

The other two layers are made up of nerve cells called bipolar and ganglion cells. It is the long axons of the ganglion cells that form the optic nerve to the brain. Rods and cones that are found in the retina are the real receptors

for vision. Rods are slender and cylindrical in shape. Cones are broad and conical. Some animals, such as rats, have only rods. Others, such as turtles have only cones. Rods are active in dim light.

They have a chemical substance called rhodopsin which plays an important role in dark adaptation. Rods help us to see shades of grey, black and white. Rods are found only in the periphery of the retina. Deficiency of rhodopsin leads to night blindness. Cones are active in day light. They have a chemical substance called iodopsin which plays an important role in light adaptation. Cones help us to see colour and are found in the centre of the retina.

In the centre of the retina is found a yellow coloured area. This area has only cones. It is known as the Fovea.

Visual sharpness of an image is greatest when it falls on the fovea. On the retina is also found an area called blind spot. It is also called an optic disc. It is an area on the retina, near the place where the optic nerve begins. This area has no rods and cones. Hence, when the image of an object falls on this area, we cannot see.

Thus, from the above discussion we see that light enters the eye through the cornea, the amount of light being regulated by the pupil, whose size is controlled by the iris. Through the aqueous humor and vitreous humor light reaches the retina. In the retina, light strikes the rods and cones. This leads to electrochemical reaction in rods and cones, which gives rise to a nerve impulse.

The nerve impulse reaches the bipolar cells and then the ganglion cells. The axons of the ganglion cells from the optic nerve, which carries the impulse to the appropriate visual area of the cerebral cortex. When information reaches the visual area of the cerebral cortex, we are able to see.