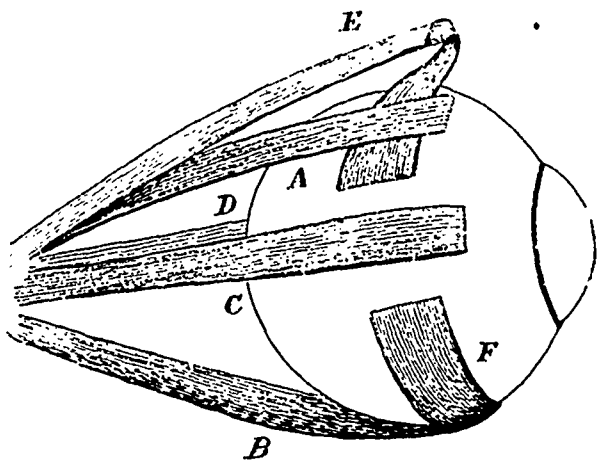
is convex on both sides, with a sharper curve behind than in front. Its length is about one-fifth, and its depth, when at rest, about one-third of an inch. It is, however, much more rounded in a child than in an adult, and becomes flattened in old age on both surfaces, when it also loses some of its transparency. It is contained in a firm elastic capsule, thicker in front than behind. To the anterior surface of the capsule, at the margin of the lens, is attached the ciliary zone or suspensory ligament. This ligament retains the lens in its proper position, and by its tension on the anterior surface keeps the lens flattened. It branches off from the hyaloid at the ora serrata, where the retina terminates and the ciliary processes commence, and thus forms a connection between the retina and the lens. It is received between and corresponds with the flutings of the processes, and stretches out with these when necessary to relax the tension of the lens. The triangular canal of Petit surrounds the crystalline lens, being the space between the back of the suspensory ligament, the front of the vitreous humor and the edge of the crystalline lens.



The external muscular system consists of the external or motor muscles which move the eyeball. They are, described simply:*

A	The superior rectus	which pulls the eye				upwards
B	" inferior	"	"	"	"	downwards
C	" external	"	"	"	"	outwards
D	" internal	"	"	"	"	inwards
E	" superior oblique		"	"	"	outwards and downwards
F	" inferior	"	"	"	"	outwards and upwards.

These muscles, except the inferior oblique, take their origin at the back of the eye from a ring that surrounds the sheath of the optic nerve. They are all attached to the sclerotic, the insertion of the four recti being not far behind the cornea.

The action of the four straight muscles, the recti, is very simple and easily understood. They are attached to the front part of the globe, and by a direct action move the front of the eye to a certain position. The action of the obliques is, however, rather more complicated; the superior oblique takes its origin on the nasal side of the orbit, passes forward through a loop and then backwards obliquely, and is attached to the top of the globe towards the back of it. When it contracts it pulls the back of the eye up and in, and therefore causes the cornea to be turned down and out. The inferior oblique passes from the nasal side also, under the globe and by its contraction pulls the back of the eye down and in, and so causes the cornea to be turned up and out. The eye can be directed to any intermediate point by the combined action of some two or more muscles, and the muscles of the two eyes work in such unison as causes the latter to be turned to the same object.

The motor muscles are in pairs. The superior and inferior recti constitute one pair; the external and internal recti are another; and the superior and inferior obliques are the third. Each of the two muscles of any pair is the antagonist of the other, and it is the constant tension of each one of the six muscles that keeps the eye in its proper position. When one muscle of any pair contracts, its antagonist relaxes its tension, and so the eye is turned by the contracted muscle into the desired direction.

The movements of the eye are on three different axes of rotation, and the central point of the motion (where the axes cross each other) is the centre of rotation. This is about the middle of the vitreous. The muscles, when at rest, keep the eyes in such a position that they are directed straight forward but inclined rather downward. The action of the motor muscles is called convergence.

A line drawn from P to Q straight through the centre of the eye is the optic axis; this is not the line of vision. The latter is the visual axis, which may be considered as a line drawn from O, the macula lutea, to R, the object looked at. The macula is situated about 6 mm. from the blind spot, rather below and to the temporal side of the posterior pole. The visual axes of the two eyes are so inclined towards each other that they meet at a point about twenty feet distant; each visual axis issues from the cornea slightly to the nasal side of, and slightly above, the anterior pole. Thus with the two eyes perfectly at rest the same object is pictured upon corresponding parts of the retina of each. To have perfect binocular vision, that is, vision in the two eyes at the same time of the same object, it is absolutely necessary that the images of the object seen be so refracted on to the retinæ that the maculæ occupy the exact centres of each picture.

(To be continued.)

According to reports from the Lipari Isles, so extensive are the deposits of pumice-stone that the supply is practically inexhaustible. The only menace to the pumice industry is said to be an artificial pumice introduced by the Germans.

Practical Hints on Advertising.

I don't believe in cute advertising. It may pay in the show business. I've heard that it does.

The other day I asked a theatrical manager whether he had ever tried newspaper advertising alone and unaided by posters. He said he had. Said he had tried posters alone, too, and that a combination was better, but he said: "Novelties and startling effects are best of all."

That is for theatricals.

Business methods and show methods must, of necessity, differ. A show stays a day, or three days, or a week. May never come again. Must get all it can then, and get it quickly. There must be a "hurrah." The more people are startled, and the more their curiosity is aroused, the better.

It isn't that way in a mercantile business. That stays. The longer it stays in one spot the better—if it is properly conducted.

Show methods of advertising will beget suspicion. Can't have "startling reductions" and "bankrupt" sales every day. That doesn't mean never have a sale. Have plenty of them, but find a good, honest reason for each one, and "fight it out on that line." Remember the boy who cried "Wolf!" and don't say anything startling unless it can be backed up with the facts. If you cry "Wolf!" let folks hear him howl.

* * * *

Don't be too distinctly original in your advertising. Don't try to startle people with your wit.

The successful new idea is the one that everybody has unconsciously recognized for a long time. Don't get beyond the age.

* * * *

Do you advertise (God save the mark!) on the backs of restaurant bills of fare? Do you put a card in the book "for the benefit of the fire department"? Do you subscribe to the "*Industrial Progress*" book, and have your picture in it as a prominent business man? Does the "society" programme catch you? Are you susceptible to the blandishments of the gentleman who puts beautiful charts in all the railway stations?

Do you take "a space, the only one left, in a thousand and one schemes that come around every year? Do you suppose you ever got a cent's worth of benefit out of any $10 you ever spent that way?

If all the dollars that are diverted from the newspapers into these and similar channels were used in buying space in the best paper in town, there would be fewer merchants who say that advertising is a doubtful undertaking.

There's nothing doubtful about it. It is as sure as any other business transaction. The funny part of it is, that it is generally given less attention than any other department of a business.

* The more complex working of the motor muscles will be described later.