

black-leg. The carcasses were burned and all precautions taken to prevent further spread of the disease. In June a veterinarian was sent out by the Department of Agriculture, who vaccinated all of the adults of the herd with serum prepared and furnished by his department, as a protective measure.

"In addition to the 22 animals that died of disease, 2 bulls and 4 cows have died or had to be killed for various causes during the year. These, however, were of but little loss to the herd, as they were old or decrepit animals and unfit to remain with the herd.

"By constant herding during the summer the herd has become used to being driven, and as a rule in handled with but little trouble on the range. The usual show herd of 15 bulls was brought into the field near Mammoth Hot Springs at the beginning of the tourist season, so they could be seen by travelers, and was returned to the main herd on September 18."

CHARTS ILLUSTRATING THE EFFECTS OF COMMON DEFECTS OF THE EYE.

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One of the most puzzling subjects to the beginner in the study of physiology is that of the common optical defects. Even elaborate mechanical devices such as the Kuehne's Eye sometimes fail to clear the subject; and, at times, may even increase the confusion. I find that this is largely due to the fact that the average beginner, either from lack of imagination, or from incorrect previous ideas of the terms used, fails to understand the subjective symptoms associated with the various types of defective eyes. When the subjective effects are clearly understood, the student has very little difficulty in grasping the optical principles involved.

The accompanying charts were developed after much experiment and seem to have been very successful in stimulating the youthful imagination. They were used in my classes in the Oklahoma State Normal school for a number of years, and were widely copied by my students in their own classes. The drawings can be made by any one who can manipulate a ruler and a "T" square. The original charts were made with charcoal on rough drawing paper about 2 ft. x 3 ft. in size. When a second set was made, a year later, it was discovered that a black wax pencil was much better than charcoal.

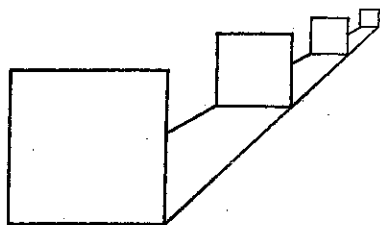


FIG. 1.

The Receding Planes as Seen by Good Eyes.

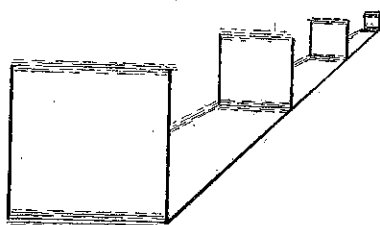


FIG. 2.

The Effect of "Horizontal" Astigmatism. There are Hundreds of Kinds of Astigmatism, but the Effect in Each Case Is to Show Objects Dim in One Plane.

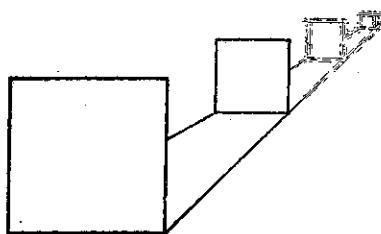


FIG. 3.

As Seen by Near Sighted Eyes.

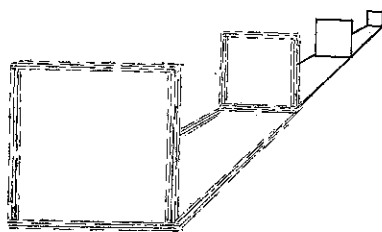


FIG. 4.

As Seen by Far Sighted Eyes.

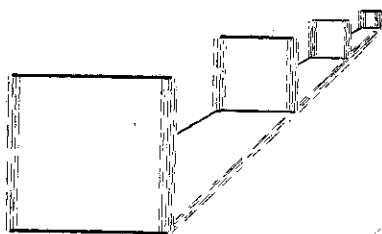


FIG. 5.

The Effect of "Vertical" Astigmatism.

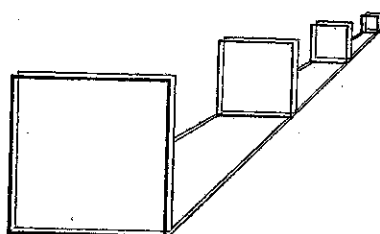


FIG. 6.

The Effect of Strabismus. Strabismus Is Any Displacement of One Eyeball. There Are Many Forms, Including Cross Eye, Cocked Eye, Drooped Eye, Etc.