HIGH SCHOOL DRAWING COURSE.

LINEAR PERSPECTIVE.

THE term **perspective**, applied to a drawing of an object, indicates that it is a representation of the *apparent* form of that object when viewed from one point.

It has no doubt been noticed, even by the most careless observer, that, except under certain circumstances, objects never appear *as they are*, and that their appearance changes with every change of the spectator's position with regard to them. This difference between appearance and reality is caused partly by the convergence of the rays of light, reflected or transmitted by the objects to the eye,* and partly by the manner in which these rays cut an imaginary transparent plane interposed between the objects and the spectator.

The eye, being opened, admits a flood of light from space, part of which may proceed from objects lying within the range of vision. This light passes through the circular opening in the iris, called the pupil, and the crystalline lens, and excites the optic nerve spread over the inside of the back of the eye, thus producing the sensation which we call vision. The rays composing this volume of light are convergent and meet in the focal point of the crystalline lens, forming a cone, the base of which may be supposed to be at any distance from the eye.†

Only one portion of an object can be seen distinctly at one time. In order to obtain a complete and correct idea of the whole, the gaze is directed at different parts of it until it has all been examined. When the eye is fixed upon one point everything about that point in all directions is seen more and more indistinctly as its distance is increased, so that the angle limiting the field of distinct vision is necessarily comparatively small. In perspective it is fixed, for the sake of convenience, at 60°, and everything lying outside is supposed to be invisible; therefore, in order to make a picture of the whole circle of landscape, the spectator would have to change his position six times, thus dividing his horizon into six different parts, each one of which would be contained by an angle of 60°.* This is called the **visual angle** or **angle of vision**.

The word *perspective* is derived from two Latin words, signifying "to look through," and naturally suggests the thought that there is a "something" through which the spectator is looking. This "something" is the **Picture Plane** (P.P.), or plane of delineation, and is an invisible vertical plane, supposed to be interposed at a given distance between the spectator and the object to be drawn. It is represented by the surface upon which the drawing is made.

A good idea of the picture plane and its use might be obtained by placing upright in front of the eye a pane of glass, and tracing upon it the outline of objects seen through it, taking care that the eye is kept in one position. The drawing thus made would be a true perspective drawing, and could easily be transferred to a sheet of paper.

The position of the eye is called the **Station Point** (S.P.).

The point towards which the eye is directed, being in the centre of the field of vision, is called the **Centre of Vision** (C.V.). When looking straight ahead the eye of the spectator is naturally fixed upon the horizon; the Centre of Vision is therefore in the horizon. If a circle were drawn with a proper radius upon the pane of glass already referred to as representing the picture plane, its circumference would be a picture of the limit of the field of vision, the circle would be the picture plane, its centre would be a picture of the centre of vision, and its horizontal diameter would be a picture of the horizon. This last line representing the horizon is called the **Horizontal Line** (H.L.).

A line drawn from the Station Point to the Centre of Vision represents, not only the distance of the spectator from the picture

* In perspective the spectator is supposed to be looking with only one eye.

† This principle of convergent rays is nicely illustrated by the light issuing from a magic lantern. The diameter of the circle of illumination on the screen (the base of the cone) depends upon the distance of the screen from the lantern. In this case the rays of light diverge, while in the case of the human eye they converge. This shows, too, that the opening through which the light passes, governs the shape of the field of illumination on the screen, in the one case, and of the field of vision in the other.

* This is illustrated in Fig. 5.