straight lines of horizontal projection; and when curved more or less are more or less interpenetrating as the diameters are more or less unequal.

But where the curiosity, the interest, the emulation of the pupil comes in, is in the study of the development of surfaces; and in verity nothing can be imagined so instructive to them as this, so suggestive, so educative of his apprenticeship of future tradesmanship, either as tin or copper smith, or plumber, cooper, joiner, tailor, milliner, dress maker and what-not; for as the tin and copper smith and plumber, must know what shape to cut his metal to, to form an elbow, so must the artist charged with robing the human form divine be aware of the peculiarly doubly curved or concavo-convex outline which a sleeve must bear to fit it to the body at the shoulder, and so of other contours, and the milliner to make a hat or bonnet must be able to describe the circular or elliptic crown, as well the more or less splayed lateral environment and finally the rim which, all, must fit the one the other and should do so if artistically shaped, without the help of scissors to bring them into contact.

Let then the boy or girl or pupil or apprentice of the "Kindergarten" be taught to take a cone for instance, and applying to it a piece of paper in a way to have an edge of it run straight from the apex to the base, environ it, envelope it, invest it, wrap it if you like, close fittingly and then cut off the surplus paper with a scissors or sharp cutting knife. Now let him remove the envelope and spread it out on the table or a plane faced board, and he will have the image of the sector of a circle. Then let it again be put together or its edges be made to meet and envelope, if allowance has been therefor made in the cutting; and let the edge be stitched, or glued, or pasted, and you have the image of the cone, of the extingoisher, of the cornet, of the spire of a belfry. The smith sees and notes this and makes unto himself a pattern or patterns of that developed shape which when its edges are made to meet, will reproduce the cone.

And now for the developed lateral surface of the frustum of a cone. Wrap as before and then unwrap the solid, and spread out the envelope on a table and you will have a section or portion of the annulus of a circle, which when its straigth or lateral edges are again brought together will be suggestive to you of the lamp shade, the lateral portion of a pail, a pie dish, or a goblet, of the ordinary milk tureen of our farmers, of the surrounding of a hat or bonnet, of a collar or splayed sleeve, cuff, etc., and in the same way as, to draw the curved portion or base of the sector to form a cone, you must take for centre of the curve or circle the summit or apex of the cone which thus makes know the radius required; in the same way, to draw the lateral envelope of the frustum of a cone, the splay being given or assumed and the diameter; you must prolong or produce the sides to meet in a point which will be the apex of the cone of which the frustum forms a portion, and the