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be built up equally upon each side of this line. Draw across this at right angles the line c d, saying that the top is to be sketched equally upon each side of this. Set off upon a b the space 1, 2, and you have determined the size (the drawings upon the board should be two or three times the size of the objects). Mark off upon c d the width of the top of the cup, estimating the proportion of this distance to the space 1, 2, and then draw the lines for the sides of the cup.

Next sketch in the ellipse for the top; (the tendency in the class will be to make this too wide). Now mark off upon a b the point where the rim of the saucer cuts the cup hiding its lower portion. Draw e f upon either side of which the ellipse of the saucer is to be sketched, which will be a little wider than that of the cup. The proportion of the space 1, 3, to 3, 2, should be carefully estimated, for it shows the depth of the saucer as well as the portion of the cup which is visible.

Mark off upon ef the width of the saucer, estimating the distance it extends beyond the cup. Sketch in the ellipse of the saucer the part that is hidden by the cup as well as that which is visible, that the ellipse may be perfect, the two sides meeting; complete the saucer, and erasing the invisible lines, we have the objects in outline. The shading should be simple with a few lines following the form as in Fig 1.



makes is that now only one-half of the ellipses are seen, that they no longer see into the cup and saucer, and that the cup appears to rest deeper in the saucer (see Fig 2). A little talk upon the perspective of curves may here be given with great value with a practical demonstration of raising and lowering the objects. An ellipse is simply a circle in perspective. Fig 2 is drawn upon the board in pretty much the



FIG 3

same way as Fig 1, drawing first the line $a \ b$ and crossing it at right angles with the line c d. Next setting off upon a b the space 1, 3, thus deciding upon the size, then mark the width of the cup upon c d and start the sides. Sketch next the curving top above the line c d, making it a part of a perfect ellipse by sketching lightly the invisible part below the line; (see dotted line Fig. 2). Mark upon a b the point where the line of the saucer crosses and draw the line ef as in Fig. 2. Sketch the ellipse of the saucer and complete the lower part. Shade as in Fig. 2 following the curve of the ellipses.

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The tendency of the class will be to make the ellipses pointed at the ends. This, in a measure, may be overcome if the pupil starts with the ends, making them well rounded, and then sketches the sides of the ellipses, building them up equally upon either side of the straight line. Should the cup have a handle it is best to turn it in such a way that it will not appear in the first lesson. After they have had some practice, it may be turned into sight and drawn.

For the second lesson, place the cup and saucer upon the teacher's desk, above the level of the eyes and show them that the great difference which this

For the third lesson, which is the most difficult, place the cup upon its side in the saucer, and the whole below the level of the eyes as in Fig. 3. Draw a b, marking upon it the width of the saucer. Sketch the ellipse. Across $a \ b \ draw$ the line $c \ d$, noting the angle it makes with $a \ b$ and the distance from the side of the saucer. Next draw the line 1 2, and from the point where it cuts c d draw 1 3 noting the angles these lines make with a b These lines are of use in estimating the height of the cup above the saucer. Upon c d mark the lowest point of the cup which in most cases will be invisible, and sketch the ellipse of the cup. Complete the lower portion of the saucer and add the sides of the cup. Shade as in Fig. 3, following the outline of the objects.

Limited space forbids my going into detail in these lessons; but it will be seen, I think, that nearly all that is to be taught with regular curves is brought out in the drawing of the cup and saucer from different positions. The most that I can hope to do in this way, is to give teachers the pith of the matter, leaving them to work it out in detail.