

XVIII.—*Reply to the foregoing Note.*

By F. H. WENHAM, F.R.M.S.

*(Read 9th April, 1879.)*

As those who have been engaged in the aperture controversy have explained their meaning repeatedly, I quite agree with what I understand is the view of the Council, that it should now be closed till some new fact appears to elucidate the question.

Professor Keith's Note does not call for discussion, as the objections appear to arise from a misapprehension of the acting conditions of the sector measurement. The flame does not remain in the centre of the field of the eye-piece during the traverse, and there is no axial bisection; the least movement sideways causes the image of the lamp to leave the centre, and when at last the light margin divides the field, the half illumination is actually caused from the eclipse of the light by the edge of the eye-piece stop. The position of the distant flame can be seen with an "examining lens" over the eye-piece. The field is traversed by the beam of light; this successively intersects all the oblique pencils of the object-glass which afterwards enter together in proximity at the eye-piece at a very small angle of divergence.

The sector measurement fails to indicate true angles of aperture, and in order to prove this without theorizing, I described in my last paper a plain and unmistakable demonstration. I took a series of decisive angles of aperture by the "triangle" method, viz. from the focal distance up to a definite diameter of front lens; I then measured the angle from each of these restricted diameters or apertures by the sector, employed precisely in the ordinary manner, and tabulated the comparative results as "false apertures."

With this I am content to allow all personal controversy to remain at rest, as I consider that I have clearly proved that angle of aperture is usually measured greatly in excess, as angle of field.

