In hypermetropia the retina R is still closer to the lens and the circle of diffusion correspondingly larger and dimmer, as shown in Fig. 36 C. The rays from D_1 on leaving the eye will be divergent, and their focus will be behind the retina at S_1, forming a virtual image. If the mirror be moved as before, D_1 will move to D_2 and the image seen, S_1, will appear to move to S_2, *i.e.* also against the motion of the mirror. If the plane mirror be used, the retina will be illuminated by a virtual image of L situated as far behind the mirror as L is really in front of it. This virtual image always moves in the opposite direction to the mirror, but the paths of the emerging rays will still be the same relatively to the image of the source of light, *i.e.* as the motion of the illuminating point is reversed in every case, the movement of the shadow is also reversed, and in myopia will now be against the mirror, and with it in emmetropia and hypermetropia.

To ascertain the refraction; in myopia, place concave glasses in front of the subject's eye until the shadow which originally moved with the mirror is seen to move against it. The lowest concave glass which effects this is the correcting lens of the myopia.

If the shadow move against the mirror, the eye is emmetropic, hypermetropic, or slightly myopic.

If on using a convex lens + 0·5 D.[1] the shadow now move with the mirror, then the eye is slightly myopic, about − 0·5 D.

If it continue to move against the mirror with + 0·5 D., but move with it with + 1 D., the eye is emmetropic.

If the motion be still against the mirror, with a lens of + 1 D. the eye is hypermetropic, and stronger + lenses are used, until one is found which causes the motion of the shadow to go with the mirror. The measure of the hypermetropia is 1 D. less than the number of this glass, as it has evidently overcorrected the refraction.

[1] The unit of refraction is taken as a convex lens of one metre focus, which is called the Dioptric Unit or Dioptry (D).