

has been so completely demonstrated that all large instruments should be supplied with this arrangement. It can hardly be doubted that electric lights will hereafter take the place of lamps for this purpose.

XI. The system of illuminating wires, field, micrometer-head, &c., by a single lamp, which shall be vertical in all positions, has been so perfected by the Repsolds that it leaves nothing to be desired.

XII. The Washington plan of having the whole micrometer plate, including both fixed and movable wires, moved by a fine screw which has not necessarily a divided head, offers such a convenience in setting that it should always be adopted.

XIII. The old system of having a single finder on that side of the telescope which is opposite the declination axis becomes very inconvenient in a large instrument, owing to the necessity of setting the slit in the dome not only to the telescope but to the finder. The plan adopted in the Vienna telescope of having two finders, of which one shall be above and the other below the telescope when the latter is in the meridian, obviates this difficulty and should always be adopted.

REFLECTING TELESCOPES IN FRANCE.

It is well known to all who have given attention to this subject that the optical performance of great reflecting telescopes has never been proportional to their size, and that the mechanical difficulties of keeping a large reflector in proper figure in different positions have been apparently insurmountable. A plan of supporting a large mirror, devised by the Messrs. Henry, has been adopted in Paris, which it is hoped may obviate this difficulty. It consists, in principle, in supporting the mirror upon a mass of metal of a form similar to that of the mirror, the surface of which is ground to fit the lower surface of the mirror with accuracy when the latter is in proper shape. If the mirror rested directly in contact with this second surface no advantage would be gained, since the backing itself would bend as readily as the mirror. Therefore between the two is inserted a thin stratum of some elastic substance. M. Henry has found a sheet of fine flannel to give the best results. The effect of the sheet is to diminish the flexure of the mirror by a fraction depending upon its stiffness and upon the elasticity of the flannel. Theoretically it may be considered imperfect, because, in order to act, some stiffness is required in the mirror itself. A perfectly flexible mirror would bend just as much with the flannel as without it. But flexure of the mirror can, it appears to me, be reduced to quite a small