cisively confirmed by the evidence of several in the observations at Toronto.

As the annularity approached, the landscape assumed a peculiar sombre hue, differing sensibly, though in what it is hard to say, from the shades of evening, or of a sky overcast with clouds, and during the annularity that strange lurid appearance, so often remarked, rested on terrestrial objects, giving to the grey stone buildings of the Fort a greenish tinge, and making the faces of individuals look ghastly and corpse-like.

It will be collected from what has preceded, that the changes of coloration referred to, though varying in detail on different occasions, and even variously represented by different persons at the same time and place, present some features in which all agree, such as the red or orange tinge on the horizon, the purple gray of the zenith, and the lurid green of light-coloured terrestrial objects. The question arises—Can these circumstances be accounted for, considering them as due to the varying action of the sun's light on our atmosphere? or are we to infer that the quality of the sun's light is different at different points of his disc? To the latter we are able to reply in the negative; for in this case the solar spectrum formed by refracting the sun's rays through a prism would undergo modification in color during the progress of the eclipse. The experiment was tried on this occasion by Dr Smallwood, who states that "the spectrum exhibited a very slight increase of the red ray," which is sufficiently accounted for by the descent of the sun towards the horizon. Conclusive as this is, another test of the same might have been afforded by an observation suggested by the Committee, namely—an examination of the coronæ formed occasionally when a light cloud or haze interposes before the sun's disc. The colors of these rings (first recognized by the celebrated Young as a problem of interferences on the undulatory hypothesis of light) would have varied from those of the uneclipsed sun; but the circumstances favourable to their occurrence appear to have been wanting on the present occasion.

Dismissing, then, the hypothesis of any sensible variation in the quality of the sun's light in different points of his surface, it remains only to see if the observed facts can be accounted for as atmospheric phenomena. The whole question of the illumination of the sky is one of great subtlety and delicacy, and to the sagacity of the great Newton we owe the fundamental idea of its explanation, namely—"that the particles of the atmosphere have no proper colour of their own, but that they more easily reflect the blue and transmit the red rays of the white solar beam." So that of a pencil of parallel rays falling on a spherical particle of air or vapour, one part is transmitted, another is reflected in all directions as if the particle itself were a source of radiant light; in the former, the colours towards the red end of the spectrum predominating; in the latter, those towards the blue. It is to this reflection or scattering we owe the general blue colour of the heavens, the illumination of twilight, and the diffusion of light in the daytime. "Were it not for this," says Herschel, "no objects would be visible to us out of direct sunshine; every shadow of a passing cloud would be pitchy darkness; the stars would be visible all day; and every apartment, into which the sun had not direct admission, would be involved in nocturnal obscurity." Suppose, now, a spectator to direct his sight towards one point of the sky, his eye will receive from the aerial particles along the line of vision, first—those rays of the sun which, falling on them after direct passage through the atmosphere, are reflected to the eye; secondly, those, also, which, having been already reflected one or more times among the whole mass of particles of the atmosphere, have also fallen on this line of particles, and been by them again reflected in the same direction as the former to his eye.

The colour of the spot of sky at which he looks will be determined by the combination of these two lights, which we may distinguish by the terms "direct" and "indirect;" the former being, under ordinary circumstances, much the stronger of the two, and giving the character to the colour. This direct light, as already stated, loses its blue by transmission and its red by reflection, so that the final tint, on reaching the eye, and by consequence, also, the colour of the sky, will depend on the length of path and the density and moisture of the strata traversed by it. Thus, under all circumstances, in a clear sky, the zenith will be decidedly bluer than the horizon, the blue tint diminishing as we descend, both on account of the smaller vertical height compared with the horizontal range of the air, and also on account of the increased density and moisture of the strata nearest the earth's surface.

Again, at mid-day, when the sun is at his highest, the length of path for the zenithal regions will then be the shortest, and the blue tint of the zenith will be stronger than at any other time of day, and on the horizon, for similar reasons, a grey tint prevails, often nearly white. As the sun descends, the blue in the zenith fades, and the red predominates on the horizon, till at sunset the *direct* light transmitted through the lowest strata of air, often charged with moisture, furnishes on the horizon, in the neighbourhood of the sun and extending from him on both sides, a brilliant red, which whitens towards the zenith, and may often be seen to assume, as we ascend, the successive colours of the spectrum from red to blue-gray. Opposite to the sun may often be seen a patch of red light, which attains its greatest intensity just as the sun sinks below the horizon, and is even more decided than that in the west, the rays forming it having twice had to traverse the lowest stratum of air and vapour. When the sun sinks below the horizon, the *direct* light is intercepted from the east by the interposition of the earth, whose shadow is projected on the sky in the form of a circular segment: the sky where this is illuminated solely by the *indirect* light which has proceeded by reflection through the higher strata, and is consequently blue, rendered still more marked by contrast with the surrounding red. When the sun has sunk, and the *direct* light is wholly cut off, the only illumination of the heavens is by the *indirect* which, as night proceeds, is given by more and more numerous reflections, and becomes in proportion more and more blue. Applying the same explanation to the effect produced by the opaque body of the moon interposing between the sun and spectator, we see that in a partial eclipse, the *direct* light being more or less cut off, the *indirect* becomes proportionally of more importance, and has more effect in determining the resultant colour of the portion of sky considered. It is also evident that its effect must depend much on the altitude of the sun at the time, and the position of the spectator in the shadow. In the zenith the *direct* light being intercepted more or less, we should expect the blue to be more decided, and if the sun be somewhat low in the heavens, this blue would be mixed with the *indirect* rays from the horizon, and thus acquire a purple tint. On the horizon, again, the part in deepest shadow loses not only its *direct* light, but also that portion of the *indirect* which is ordinarily furnished to it by the zenithal regions; its remaining illumination coming from strata lower down would necessarily show the red tint so constantly observed. For intermediate portions of the sky, the prevailing tint would