central line devoid of colour. That these fringes originate in the mutual interference of rays which have passed beside *both* the edges of the object and entered the shadow, is proved by intercepting the light on one side only, leaving that on the other to pass freely. *All* the interior fringes and the central streak disappear, leaving only the *exterior ones on the illuminated side* outstanding. The shadow (which is now formed under the same circumstances as in the former case) must, it is clear, be still receiving one-half the total quantity of light which it did before; and if its edge be narrowly examined, it will be seen not to terminate in any sharply-defined line cutting it off from the fringes, but to graduate off insensibly; and hence arises a very singular phænomenon. If the light be readmitted on *both* sides, and the breadth of the shadow, or what under such circumstances must be accepted as such, be measured, it is found to be much broader than it ought to be were it limited by straight lines drawn from the illuminating point through the edges of the object. And, what is still more remarkable, if its breadth be measured on a screen, successively placed at different distances from the object, its increase of breadth is found not to be in the simple proportion of its increased distance; as it would were the aerial shadow (or the space shaded by the object) bounded by straight lines; but as if by curves starting from its edges, and having their convexities towards the light. And, finally, if the object and the screen, *preserving the same distance between them*, be moved gradually nearer and nearer to the illuminating point, the fringes, both interior and ex-