

in like manner have to be reversed on interchanging the illuminating and illuminated points. On neither supposition could the same *intrinsic* law of communication carry the ray from A through P, to B, and from B, through P, to A. This, then, is the law of regular reflexion, commonly expressed by saying that *the angle of incidence is equal to that of reflexion and lies in the same plane with it.*

(20.) If the reflecting surface be a plane, there will be only one point in it which fulfils these conditions. Thus a perfectly polished flat surface of silver, free from scratches, or that of still water, sends no light to the eye from a candle, and is in fact invisible, except at this one point so determined whence the light is reflected to the eye, and in the direction of which from the eye the reflected candle is seen. With curved surfaces, as well as with those we designate as "rough" or "unpolished," the case is different. In all surfaces of this last-mentioned description the microscope reveals to us such irregularities, such innumerable and abruptly broken facets, protuberances and hollows, as to satisfy us that in every, the most minute, visible portion of such a surface, places must occur in which the condition of equal inclination of the two lines in question to the actual surface, *as it exists in those places*, is satisfied—so that a ray there reflected may reach an eye however situated. By such rays, and by others which have entered into the substance of the object and been there internally reflected or otherwise bent, in a manner presently to be explained, all surfaces not self-luminous become *visible as objects*, being seen by rays "scattered" from them in every possible direction.