

(25.) It is evident from what we said in the last paragraph, that according to the greater or less disproportion between the lines MR , NS , on the diagram there given, or the sines of the two angles of incidence and refraction, the greater or less will be the amount of bending (or *angle of deviation*, as it is called) of the ray at its point of transmission, for one and the same degree of obliquity—as also that for one and the same medium, the *deviation* increases *with* the angle of incidence (though not *proportionally* to it) being *nil* when the ray enters perpendicularly, and a maximum when just grazing the surface. If in any case MR be greater than NS , or the “ratio of the sines” be one of “greater inequality,” the bending will be *towards* the perpendicular; if less, or if that ratio be one “of less inequality,” *from* it; as indicated by the course of the dotted ray in the figure. If the former be the case in any instance, as in that where a ray passes out of air into water, the latter will happen in the reverse case, as where it passes out of water into air: that is to say, in optical language, “out of a denser medium into a rarer.” This follows, from the general fact that the illuminating and illuminated points are convertible, or that a ray can always return by the path of its arrival, so that the refraction of a ray out of any medium into air is performed according to the same rule of the sines, only reversing the terms of the proportion; or in other words, regarding what was the angle of incidence in the one case as that of refraction in the other and *vice versa*. Numerically expressed, this reversal of the terms of a proportion, or ratio, is equivalent to inverting the numer-