the direction perpendicular to the plane which touches the two balls in the point of mutual contact, or point of impulse. This inductive proposition is supported by every argument which can be drawn from what we know concerning the forces which connect the particles of matter together, and are the immediate causes of the communication of motion. It would employ much time and room to state them here; and we apprehend that it is unnecessary: for no reason can be assigned why the pressure should be in *any particular* oblique direction. If any one should say that the impulse will be in the direction of the stream, we have only to desire him to take notice of the effect of the rudder of a ship. This shows that the impulse *is not in the direction of the stream*, and is therefore in some direction transverse to the stream.—He will also find, that when a plane surface is impelled obliquely by a fluid, there is no direction in which it can be supported but the direction perpendicular to itself. It is quite safe, in the mean time, to take it as an experimental truth. We may, perhaps, in some other part of this work, give what will be received as a rigorous demonstration.

Relative or *effective impulse* means the pressure on the surface estimated in some particular direction. Thus, BC (Plate IX. Fig. 1.) may represent the sail of a ship, impelled by the wind blowing in the direction DC. GO may be the direction of the ship's keel, or the line of her course. The wind strikes the sail in the direction GH parallel to DC; the sail is urged or pressed in the direction GI, perpendicular to BC. But we are interested to know what tendency this will give the ship to move in the direction GO. This is the effective or relative impulse. Or BC may be the transverse section of the sail of a common wind-mill. This, by the construction of the machine, can move only in the direction GP, perpendicular to the direction of the wind; and it is only in this direction that the impulse produces the desired effect. Or BC may be half of the prow