ed to explain its cause, but Newton was the first who gave an entire and satisfactory explanation of the phenomenon.

We have avoided as much as possible the very appearance of mathematical demonstration in the explanations we have given of natural phenomena, which may possibly have occasioned a want of precision in many parts of the work. Should we be charged with this fault, we may remind the critic that these pages have been written to implant or nourish a love of science in the minds of those who, from natural predilections or the force of habit, have devoted more time to the cultivation of the imagination than to the acquisition of philosophical knowledge—for those who have been accustomed to think the pursuits of science derogatory to an intellectual and poetical mind. We cannot, however, explain the formation of the rainbow without a reference to a diagram, which may remind the reader of a mathematical demonstration.

The rainbow is always seen in that part of the sky opposite to the sun. There are, however, two bows, of which the interior is the stronger, being formed by one reflection, the exterior by two. Supernumerary bows have been occasionally seen. The primary or inner bow, which is commonly seen alone, consists of arches of colour in the following order, commencing with the innermost: violet, indigo, blue, green, yellow, orange, and red. These, as we have already stated, are the primitive colours, and we may be led to a suspicion of the cause of the rainbow by the fact that they have the same proportion in the bow as in the prismatic spectrum. The rainbow is in fact a number of spectra produced by the reflection of light from the falling drops of rain.

The formation of the rainbow primarily depends upon the

Fig. 1
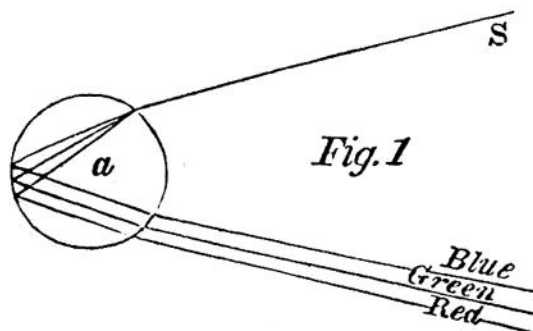
different degrees of refrangibility belonging to the differently coloured rays of light, and the separation of these rays is