

either directly observed or inferred by rigorous geometrical analysis and measurement. And here we may note that some of these measurable geometrical relations would probably never have been discovered, had it not been that in the actual world of observation they present themselves as specific qualities through our senses. This may be illustrated by the fact that only within very recent times have such phenomena as electro-magnetic waves been observed and studied, though they are quite as real as the tremors and molecular motions which are revealed to us through the special senses of sight and touch in the phenomena of colour and heat.

The scientific study of the external world is thus dependent on, and leads to the conception of sameness. And if we fully realise how far this sameness is carried in all those branches of research where geometrical methods are applied, it must become evident to us that without the qualitative differences revealed by sight and touch, we should probably never have arrived at the notion of individual or separate things at all.

III.

Applying the fundamental principle most clearly stated by Hume, that we have no ideas which are not ultimately derived from impressions; but also taking this principle in a wider sense than that in which Hume seems to have conceived it,—we may now proceed to a second class of ideas.

These ideas are derived not from distinct sensations or impressions, but from the manner in which these