calculation of the sides of the triangles, *considered as lying not on a plane, but on a spherical surface,* and ultimately (as we shall see) on a spheroidal one. It is not our object to dwell on these details, or to describe more minutely any one of the many operations of the kind which have been carried out or are still in progress in France, England, America, Prussia, Austria, Italy (but more especially and on the vastest scale in the Russian and in our own Indian Empire), and in the southern hemisphere at the Cape of Good Hope. We are only concerned here with the final conclusions arrived at, and with the reasons on which they rest, and these are :—

1st. The length of a degree of the meridian, in whatever region of the earth it is measured, is *very nearly* the same, nowhere varying from a general average by more than about one 200th part of its amount. And from this it follows that the figure of the earth approaches exceedingly near to that of an exact sphere. For the length of such a degree is a measure of the curvature of the surface, it being evident that were any one to travel southward till the meridian altitude of a star was increased by one degree, he must have arrived at a place where the surface on which he stands is just one degree inclined to that at his starting point: so that in walking on he is at that moment pursuing a course deviating by one degree from the direction of his outset. *Now this deviation from a straight course is our idea of curvature.* The curvature of each geographical meridian then is very nearly the same everywhere. In other words, the earth is very nearly a sphere. The average