also by differences in the material of which they consisted.

(31.) Every observer who has examined the spectrum with more care than the last, has added to the number of these lines. Dr Wollaston first noticed two or three of the most conspicuous. Fraunhofer registered and fixed the places of some thirty or forty more; and later observers have mapped down with all the precision of a geographical survey, not less than two thousand of them. The knowledge of them, and the precise measurement of their distances from one another, has proved most valuable in a great many lines of scientific enquiry, and most particularly in Optics and Chemistry; and, quite recently, has been the means of revealing facts respecting the constitution of the sun itself, which one would have supposed it impossible for man ever to have become acquainted with. One word more on these lines—for we must husband time, as there remains a great deal more ground to go over. I have said that they are not *occasional*, but belong to the sun's light *as such*. But they may be considered as in some sort *accidental* as regards the sun—for the light of each of the stars when thrown into a spectrum, is found to have a different system of these "fixed lines." And what is more, the light of every flame has its peculiar lines, which indicate the nature of the burning substance. And in this way there seems to arise a possibility that by studying these lines carefully, as exhibited by terrestrial flames and other sources of artificial light, we may come to a knowlege of what the sun and stars are made of. This is what men of science are now