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UNDER THE SANCTION OF THE CONGREGATIONAL CHURCHES.

In malice be ye children, but in understanding be men.—*St. Paul.*

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FIXED STARS.

Fixed stars are called so in reference to their appearance as respects us and other planetary bodies; but the great mass of all those discoverable are of the same characters, and they all have motions, perhaps orbital, like the planets. Motion is indeed universal—it is the very wheel of existence, and the cause of all phenomena, although we may have inferred this from our own limited comprehension of things here, yet the telescope has revealed extraordinary facts as to the application of those general and elementary laws of matter and of existences throughout celestial space. Much of that which is known respecting both the nature and revolutions or stars, or the firmaments of worlds that thus fill all space with life and motion, is noticed in this work, but many of their phenomena are not familiar with all.

There is, strictly, a great variety in the relative magnitude of stars, indeed almost as great as is their number; and, although they have been classified into degrees of size, extending to the 12th order of distances, as regards space and as seen by the naked eye, or by the aid of instruments still further; yet Leland in his catalogue of 600 of the first magnitude reckoned 126 of intermediate magnitudes. These are not magnified by the telescope as are the planets, but appear with an increased lustre which, with some of those of the first order, as seen in Herschel's largest telescope, was too great to be endured by the eye. Their twinkling is attributed to the paucity of their light in passing to us. They appear somewhat larger to the naked eye than when seen through a tube or instrument, and unaided by atmospheric light. We do not see with the naked eye in either hemisphere more than one thousand of these stars, though they appear much more numerous, owing to the confused manner in which they are viewed. The number, as seen through a telescope, is infinite.

The nearest and brightest is the star *Sirius*, estimated to be thirty-two billions of miles distant from the earth; so that it would require seven millions of years for a cannon ball to reach it, constantly flying with a rapidity equal to that which it would have on leaving the cannon. To the inhabitants of *Sirius* our sun appears as a star, and the planetary system revolving around it, of which the earth is one, is unseen, as are those of *Sirius* by us. All the fixed stars are supposed to be centres, or suns, of complete planetary systems. They are classified under six different magnitudes, according to their apparent size to the naked eye; similar ones are called telescopic stars, being seen alone by the aid of an instrument; and their relative magnitudes are thus, as before intimated, greatly increased.

The first catalogue of the stars was made by Hipparchus from his own and the observations of the ancients, and contained 1022; to this number successive astronomers have continued to make additions. Leland completed a list and determined the places of fifty thousand stars, from the pole to two or three degrees below the tropic of Capricorn; and, in a space of only ten by two and a half degrees, Herschel computed two hundred and fifty-eight thousand! Yet still his observations could have added to this number indefinitely. It is not satisfactorily known whether the variety in their appearances is owing to their real magnitude or to their distances, though it is probably attributable to both these causes. But, with respect to their localities, astronomers have defined their places with as much precision as are those of cities and towns upon the earth. Stars which before appeared single have also been discovered to be double, triple, quadruple, and multiple. Herschel completed a list of more than five hundred of these stars, and Professor Struve has added to the number nearly three thousand. The distance of the stars may be conceived by the fact, that the moon actually eclipses two thousand of them at once, that some