

mass, which formerly extended beyond the limits of the most remote planet. The luminous spectra of all the stars are not, observers agree, of the same nature; by studies continued from 1863 to 1872, Father Secchi succeeded in bringing these different spectra under four heads, which, he holds, correspond to different ages and physical states of the stars. The theory, too, of the maintenance of the sun's energy by gradual condensation, so happily developed in the article referred to above, though commonly attributed to Helmholtz, was learnedly defended by Father Secchi, and its probability rests largely on his observations. However bold the hypothesis may seem at first sight, he holds, with other eminent modern astronomers, that the spectroscopic furnishes strong evidence that the fixed stars are the suns and centres of planetary systems, some parts of which must be in much the same state as our globe, consequently inhabitable if not actually inhabited. He thus concludes a chapter on nebular spectra ("The Sun," vol. ii.): "The theory which we have unfolded relative to the formation of the sun, which is attributed to the gradual condensation of a nebula, was at first admitted only on simple inductions, but it has been confirmed, and so to say, demonstrated by the discovery of gaseous nebulae: everything leads us to believe that these nebulae will one day be transformed into stars, and that all the stars which twinkle in the sky have had a similar origin. \* \* \* The world has grown vast to us; the solar system no longer appears but as a point in space. What a difference between these great ideas and those which formerly limited the world to our globe! But in learning more of the vastness of the world, man's true greatness is undiminished. No doubt we appear small in the immensity of the universe, but the greater the world is for us, the greater must be our intelligence to understand such marvels, the greater is the genius of man who has discovered them. God alone can perfectly understand his works; happy the mortal who can have an idea of them vast enough to admire their greatness and beauty."

Father Secchi also enriched astronomy by his investigations on the motions proper of the sun and stars, the transit of Venus,

eclipses, and other important phenomena but time and space do not permit us to even outline or enumerate his researches in these directions. "The Stars," a work he had just completed when overtaken by death, gives a fair general knowledge of the results of his astronomical labours.

It would be unjust to Father Secchi, in however brief a sketch of his life, to pass unnoticed his services to science apart from astronomy. He began his scientific career by the study of physics, and never altogether abandoned it. Besides his early works on this subject, we have from him an excellent volume entitled "The Unity of Physical Forces." But the greater part of the time which his astronomical researches left him, he devoted to meteorology and terrestrial magnetism. He established the fact that magnetic variations are concomitant with certain solar phenomena, such as rotation, spots, etc.; to him first honors must be accorded, if scientists ever realize their hopes of finding another great solar force different from light and gravitation.

Such is an incomplete résumé of the legacy of scientific truths which Father Secchi left to the world when he passed to a better life on the 26th of February, 1878. The results of his labors in every field of astronomical research since 1850 are chronicled in the scientific periodicals of Italy, France, Germany and England. Years before his death the scientific world placed him upon a solid and lofty pedestal, from which he could look down upon his many and eminent rivals, and where he was beyond the reach of fanaticism or even armed injustice. The Italian government which in 1875 expelled the Jesuits from Italy, not only left Father Secchi unmolested, but allowed him to retain at the observatory all his brothers in religion whose services he deemed useful. He sought not, but well deserved the honors tendered him by his enrolment as an officer of the Legion of Honor, a correspondent of the Scientific Society of France and a member of the Royal Society of London and of the Academies of St. Petersburg, Berlin, Brussels, Madrid and Philadelphia. Perhaps, no glowing epitaph recounts the humble Jesuit's greatness, but the name of Secchi will be known and honored as long as astronomy is studied.

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