sidereal space. In the radiation-spectra of nebulæ, Mr. Huggins finds the hydrogen lines very prominent; and he conceives that they may be glowing masses of that element. Prof. Tait has suggested, on the other hand, that they are more probably clouds of stones frequently colliding and thus giving off incandescent gases. Sir William Thomson (now Lord Kelvin) favors this view, which is further amply supported by spectroscopic observations. Among the fixed stars, absorption-spectra have been recognized, pointing to a structure resembling that of our sun, viz. an incandescent nucleus which may be solid or liquid or of very highly compressed gas, but which gives a continuous spectrum and which is surrounded with an atmosphere of glowing vapor.[7] Those stars which show the simplest spectra are believed to have the highest temperature, and in proportion as they cool their materials will become more and more differentiated into what we call elements. The most brilliant or hottest stars show in their spectra only the lines of gases, as hydrogen. Cooler stars, like our sun, give indications of the presence, in addition, of the metals—magnesium, sodium, calcium, iron. A still lower temperature is marked by the appearance of the other metals, metalloids, and compounds.[8] The sun would thus be a star considerably advanced in the process of differentiation or association of its atoms. It contains, so far as we know, no metalloid except carbon, and possibly oxygen, nor any compound, while stars like Sirius show the presence only of hydrogen, with but a feeble proportion of metallic vapors; and, on the other hand, the red stars indicate by their spectra that their metallic vapors have

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[7] Huggins, Proc. Roy. Soc. 1863–66, and Brit. Assoc. Lecture (Nottingham, 1866); Huggins and Miller, Phil. Trans. 1864.

[8] Lockyer, Comptes rendus, Dec. 1873.