

of a great number of bright lines the most striking being a double line in the green. Kirchhoff found that if the light from an incandescent base or background is made to pass through a glowing gas, which of itself would yield certain bright lines, there appear in the spectrum band dark lines in the places corresponding to the places occupied by the bright lines proper to that gas. Thus the dark lines in the solar spectrum came to admit interpretation and to indicate the presence in the sun's atmosphere of materials such as exist on the earth. Indeed unidentified lines foreshadowed the discovery on the earth of elements not then known. Soon after, Huggins, Angström, Rutherford, Secchi, Vogel, to mention only a few of the more distinguished workers in this field, devised and perfected means for examining the light from individual stars. Their labors revealed the fact that the remote stars are essentially as our sun,—bodies with an incandescent photosphere surrounded by glowing gases which, affecting the emerging rays of light, disclose the presence in these orbs of elements whose characteristic lines are known, and the existence of which in the sun had already been shewn. Thus, while variety ever presented itself, there could no longer be any doubt of the unity—not the sameness—of constitution of the sun and the distant stars.

In 1864, Huggins succeeded in obtaining the spectrum of a nebula, one of those distant and mysterious appearances that had claimed so much of the time and thought and speculation of Sir William Herschel. I cannot do better than quote from Huggins's account of the discovery—an account written in 1897, in which he quotes from his statement at the time when success waited on his efforts:

"On the evening of August 29, 1864, I directed the telescope for the first time to a planetary nebula in Draco. The reader may now be able to picture to himself, to some extent, the feeling of excited suspense, mingled with a feeling of awe, with which after a few moments of hesitation I put my eye to the spectroscope. Was I not about to look into a secret place of creation?

I looked into the spectroscope. No spectrum such as I expected! A single bright line only! At first I suspected some displacement of the prism, and that was looking at a reflection of the illuminated slit from one of its faces. This