1st Mag.	2d Mag.	3d Mag.	4th Mag.	5th Mag.
20	65	190	425	1100

6th Mag.	7th Mag.	8th Mag.	9th Mag.
3200	13,000	40,000	142,000

The number of stars distinctly visible to the naked eye (amounting in the horizon of Berlin to 4022, and in that of Alexandria to 4638) appears at first sight strikingly small.* If we assume the moon's mean semi-diameter at 15′ 33″·5, it would require 195,291 surfaces of the full moon to cover the whole heavens. If we further assume that the stars are uniformly distributed, and reckon in round numbers 200,000 stars from the first to the ninth magnitude, we shall have nearly a single star for each full-moon surface. This result explains why, also, at any given latitude, the moon does not more frequently conceal stars visible to the naked eye. If the calculation of occultations of the stars were extended to those of the ninth magnitude, a stellar eclipse would, according to Galle, occur on an average every 44′ 30″, for in this period the moon traverses a portion of the heavens equal in extent to its own surface. It is singular that Pliny, who was undoubtedly acquainted with Hipparchus's catalogue of stars,

and +90° observed by Lalande. As this space is 0·72310 of the whole heavens, we should again have for this zone 5255 stars visible to the naked eye. An examination of Bode's Uranography (containing 17,240 stars), which is composed of the most heterogeneous elements, does not give more than 5600 stars from the first to the sixth magnitude inclusive, after deducting the nebulous spots and smaller stars, as well as those of the 6·7th magnitude, which have been raised to the sixth. A similar estimate of the stars registered by La Caille between the south pole and the tropic of Capricorn, and varying from the first to the sixth magnitude, presents for the whole heavens two limits of 3960 and 5900, and thus confirms the mean result already given by yourself. You will perceive that I have endeavored to fulfill your wish for a more thorough investigation of these numbers, and I may further observe that M. Heis, of Aix-la-Chapelle, has for many years been engaged in a very careful revision of my *Uranometrie*. From the portions of this work already complete, and from the great additions made to it by an observer gifted with keener sight than myself, I find 2836 stars from the first to the sixth magnitude inclusive for the northern hemisphere, and therefore, on the presupposition of equal distribution, 5672 as the number of stars visible throughout the whole firmament to the keenest unaided vision." (*From the Manuscripts of Professor Argelander*, March, 1850.)

* Schubert reckons the number of stars, from the first to the sixth magnitude, at 7000 for the whole heavens (which closely approximates to the calculation made by myself in *Cosmos*, vol. i., p. 150), and upward of 5000 for the horizon of Paris. He gives 70,000 for the whole sphere, including stars of the ninth magnitude. (*Astronomie*, th. iii., s. 54.) These numbers are all much too high. Argelander finds only 58.000 from the first to the eighth magnitude.