

in which he exults in having discovered 400 hitherto unobserved stars in a space of one or two degrees. He never makes any reference to *unresolved* nebulous matter. Yet how could the great nebulous spot in the sword of Orion have failed to rivet his attention? But, although this great observer probably never saw the irregular nebula in Orion, or the roundish disk of a so-called irresolvable nebula, still his general views\* on the intrinsic nature of nebulous spots were very similar to those to which the greater number of our astronomers of the present day incline. Like Galileo, Hevel of Dantzic, who, although a distinguished observer, was not much inclined to rely upon telescopic observation for aid in cataloguing the stars,† made no mention in his writings of the great nebula in Orion. His star catalogue, moreover, did not contain upward of 16 nebulous spots, of which the positions were accurately determined.

At length, in the year 1656, Huygens discovered the neb-

\* "In primo integram Orionis constellationem pingere decreveram; vero, ab ingenti stellarum copia, temporis vero inopia obrutus, aggressionem hanc in aliam occasionem distuli. Cum non tantum in Galaxia Lacteus ille candor veluti albicantis nubis spectetur, sed *complures consimilis coloris areolæ sparsim per æthera subfulgeant*, si in illarum, quamlibet specillum convertas, stellarum constipatarum cœtum offendes. Amplius (quod magis mirabile) stellæ, ab astronomis singulis in hanc usque diem *nebulosæ* appellatæ, stellarum mirum in modum consitarum greges sunt: ex quarum radiorum commixtione, dum unaquaque ob exilitatem, seu maximam a nobis remotionem, oculorum aciem fugit, candor ille consurgit, qui densior pars cœli, stellarum aut solis radios retorquere valens, hucusque creditus est."—*Opere di Galileo Galilei*, Padova, 1744, tom. ii., p. 14, 15. "At first I had resolved to describe the whole constellation of Orion; but the multitude of the stars and the want of leisure compelled me to postpone the undertaking till another occasion. Since not only in the Milky Way may be observed that brilliancy as of a whitish cloud, but several areoles of a similar color are scattered through the firmament; if you direct the glass to any one of them, you will meet with a host of clustered stars. Moreover, the stars (still stranger to say) which, by every astronomer, are to this day called nebulous, are clusters of stars lying close together in a wonderful manner, from the combination of whose rays (while they can not be separately distinguished by the eye on account of their minuteness, or their very great distance from us) arises that whiteness, which, from its capacity of reflecting the rays of the stars or of the sun, has been hitherto supposed to belong to a denser part of the atmosphere."—*Sidereus Nuntius*, p. 13, 15 (Nos. 19–21), and 35 (No. 56).

† Compare *Cosmos*, vol. iii., p. 41. I also remember a vignette at the close of the introduction to Hevel's *Firmamentum Sobescianum*, 1687, in which three genii are represented, two of whom are making observations with Hevel's sextants. The third genius is carrying a telescope which he appears to be worshiping, while those observing exclaim, *Præstat nudo oculo!*