the meteors move—can not at present be determined with certainty from the observations. A beautiful series of such observations by Houzeau (during the years 1839 to 1842) appears to offer evidence against a progressive alteration.* Edward Heis† has very correctly remarked that, in Grecian and Roman antiquity, attention had already been directed to a certain temporary uniformity in the *direction* of shooting stars darting across the sky. That direction was then considered as the result of a wind already blowing in the higher regions of the atmosphere, and predicted to the sailors an approaching current of air descending thence into the lower regions.

If the *periodic* streams of shooting stars are distinguished from the *sporadic* by the frequent parallelism of their paths, proceeding from one or more points of divergence, a second criterion of them is the numerical—the number of individual meteors referred to a definite measure of time. We come here to the much-disputed question of the distinction of an extraordinary from an ordinary fall of shooting stars. Two excellent observers, Olbers and Quetelet, have given as the mean number of meteors which can be reckoned hourly in the range of vision of one person upon not extraordinary days, the former five to six, the latter eight meteors.‡ For the discussion of this question, which is as important as the determination of the laws of motion of shooting stars, in reference to their direction, a great number of observations are required. I have therefore referred with confidence to the already-mentioned observer, Herrn Julius Schmidt at Bonn, who, long accustomed to astronomical accuracy, takes up with his peculiar energy the whole phenomena of meteors—of which the formation of aërolites and their fall to the Earth appear to him merely a special phase, the rarest, and therefore not the most important. The following are the principal results of the communications which I requested from him.§

* Saigey, p. 151; and upon Erman's determination of the *points of convergence* diametrically opposed to the points of divergence, p. 125–129.

† Heis, *Period. Sternschn.*, p. 6. (Compare also Aristot., *Problem.*, xxvi., 23; Seneca, *Nat. Quæst.*, lib. i., 14: "Ventum significat stellarum discurrentium lapsus, et quidem ab ea parte qua erumpit.") I have myself long believed in the influence of the wind upon the direction of the shooting stars, especially during my stay at Marseilles at the time of the Egyptian expedition.

‡ *Cosmos*, vol. i., p. 113.

§ All that is marked in the text with inverted commas I am indebted for to the friendly communication of Herrn Julius Schmidt, attached to the observatory at Bonn. With regard to his earlier works of 1844, see Saigey, p. 159.