

1661. The first observation of the phenomenon may have been made two or three years prior to this period; but, notwithstanding, the merit of having (in the spring of 1683) been the first to investigate the phenomenon in all its relations in space is incontestably due to Dominicus Cassini. The light which he saw at Bologna in 1668, and which was observed at the same time in Persia by the celebrated traveler Chardin (the court astrologers of Ispahan called this light, which had never before been observed, *nyzek*, a small lance), was not the zodiacal light, as has often been asserted,* but the

and of the retardation of the extremes of the effects in meteorological processes. It is, however, to be regretted that our Baconian-philosophy-loving author, who was Lord Henry Somerset's chaplain, fell into the same error as Bernardin de St. Pierre, and regarded the Earth as elongated at the poles (see p. 148). At the first, he believes that the Earth was spherical, but supposes that the uninterrupted and increasing addition of layers of ice at both poles has changed its figure; and that, as the ice is formed from water, the quantity of that liquid is every where diminishing.

* Dominicus Cassini (*Mém. de l'Acad.*, t. viii., 1730, p. 188), and Mairan (*Aurore Bor.*, p. 16), have even maintained that the phenomenon observed in Persia in 1668 was the zodiacal light. Delambre (*Hist. de l'Astron. Moderne*, t. ii., p. 742), in very decided terms, ascribes the discovery of this light to the celebrated traveler Chardin; but in the *Couronnement de Soliman*, and in several passages of the narrative of his travels (éd. de Langlès, t. iv., p. 326; t. x., p. 97), he only applies the term *niazouk* (*nyzek*), or "petite lance," to "the great and famous comet which appeared over nearly the whole world in 1668, and whose head was so hidden in the west that it could not be perceived in the horizon of Ispahan" (*Atlas du Voyage de Chardin*, Tab. iv.; from the observations at Schiraz). The head or nucleus of the comet was, however, visible in the Brazils and in India (Pingré, *Cométogr.*, t. ii., p. 22). Regarding the conjectured identity of the last great comet of March, 1843, with this, which Cassini mistook for the zodiacal light, see Schum., *Astr. Nachr.*, 1843, No. 476 and 480. In Persian, the term "*nîzêhi âteschîn*" (fiery spears or lances) is also applied to the rays of the rising or setting sun, in the same way as "*nayâzik*," according to Freytag's Arabic Lexicon, signifies "*stellæ cadentes*." The comparison of comets to lances and swords was, however, in the Middle Ages, very common in all languages. The great comet of 1500, which was visible from April to June, was always termed by the Italian writers of that time *il Signor Astone* (see my *Examen Critique de l'Hist. de la Géographie*, t. v., p. 80). All the hypotheses that have been advanced to show that Descartes (Cassini, p. 230; Mairan, p. 16), and even Kepler (Delambre, t. i., p. 601), were acquainted with the zodiacal light, appear to me altogether untenable. Descartes (*Principes*, iii., art. 136, 137) is very obscure in his remarks on comets, observing that their tails are formed "by oblique rays, which, falling on different parts of the planetary orbs, strike the eye laterally by extraordinary refraction," and that they might be seen morning and evening, "like a long beam," when the Sun is between the comet and the Earth. This passage no more refers to the zodiacal light than those in which Kepler (*Epit. As*