

40 from the Dragon's Head, but full 78 from undetermined points. The number of falling stars issuing from Perseus consequently amounted to nearly double those from Leo."\*

The divergence from Perseus has consequently shown it self *in both* periods as a very remarkable result. An acute observer, Julius Schmidt, attached to the Observatory at Bonn, who has been occupied with meteoric phenomena for eight or ten years, expresses himself upon this subject with great decision in a letter to me (July, 1851): "If I deduct from the abundant falls of shooting stars in November, 1833, and 1834, as well as from subsequent ones, that kind in which the point in Leo sent out whole swarms of meteors, I am at present inclined to consider the *Perseus point* as that point of divergence which presents not only in August, but throughout the *whole year*, the most meteors. This point is situated, according to the result deduced from 478 observations by Heis, in Rt. Asc.  $50^{\circ}3'$  and Decl.  $51^{\circ}5'$  (holding good for 1844-6). In November, 1849 (from the 7th to the 14th), I saw some hundreds more shooting stars than I have ever remarked since 1841. Of these only a few, upon the whole, came from Leo; by far the greater number belonged to the constellation of Perseus. It follows from this, as it appears to me, that the *great* November phenomenon of 1799 and 1833 did not appear at that time (1841). Olbers also believes that the maximum November appearance has a period of thirty-four years (*Cosmos*, vol. i., p. 127). If the directions of the meteor-paths are considered in their full complication and periodical recurrence, it is found that there are certain *points of divergence* which are always represented, others which appear only sporadically and changeably."

Whether, moreover, the different points of divergence alter with the years—which, if *closed rings* are assumed, would indicate an alteration in the situation of the ring in which

\* This preponderance of Perseus over Leo, as a point of departure, did not by any means obtain in the observations at Bremen on the night of the  $\frac{1}{4}$ th November, 1838. A very experienced observer, Roswinkel, saw, on the occasion of a very abundant fall of shooting stars, almost all the paths proceed from Leo and the southern part of Ursa Major; while in the night of the  $\frac{2}{3}$ th of November, on the occasion of a fall but little less abundant, only four paths proceeded from Leo. Olbers (*Schum., Astr. Nachr.*, No. 372) adds very significantly, On this night paths did not appear at all parallel to each other, and showed no relation to Leo: they appear, on account of the want of parallelism, to belong to the sporadic and the periodic class of falling stars. The proper November period was, however, certainly not to be compared in brilliancy with those of the years 1799, 1832, and 1833."