

From the summary here given, it follows that, since the discovery of Encke's Comet* as an *interior* one in the year 1819, up to the discovery of the interior comet of D'Arrest, scarcely 32 years have elapsed. Yvon Villarceau has also given elliptic elements for the last-named in Schumacher's *Astron. Nachr.*, No. 773, and has, at the same time with Valz, put forward some conjectures as to its identity with the Comet of 1678, observed by La Hire, and calculated by Douwes. Two other comets, apparently of from 5 to 6 *year periods* of revolution, are the 3d of 1819, discovered by Pons, and calculated by Encke; and the 4th of 1819, discovered by Blanpain, and, according to Clausen, identical with the 1st of 1743. But neither of these can be classed with those which, from longer and more accurate observations, present a greater certainty and completeness of their elements.

The inclination of the orbits of the *interior* comets to the plane of the ecliptic is, upon the whole, small, between 3° and 13° ; that of Brorsen's Comet alone is very considerable,

* The short period of revolution of 1204 days was discovered by Encke on the reappearance of his comet in the year 1819. See the first calculated elliptical orbits in the *Berliner Astron. Jahrbuch* for 1822, p. 193, and for the constants of the *resisting medium* assumed to explain the accelerated revolution. Encke's *Vierte Abhandlung* in the *Schriften der Berl. Akademie* for the year 1844. (Compare Arago, in the *Annuaire* for 1832, p. 181; in the *Lettre à M. Alexandre de Humboldt*, 1840, p. 12; and Galle, in Olbers's *Cometenbahnen*, p. 221.) As belonging to the history of *Encke's Comet*, it must here be called to mind that, so far as our knowledge of the observations extends, it was first seen upon two days by Méchain on the 17th of January, 1786; then by Miss Carolina Herschel from the 7th to the 27th of November, 1795; afterward by Bouvard, Pons, and Huth, from the 20th of October to the 19th of November, 1805; finally, as the tenth reappearance since Méchain's discovery in the year 1786, by Pons from the 25th of November, 1818, to the 12th of January, 1819. The *first* reappearance, *calculated beforehand* by Encke, was observed by Rümker at Paramatta. (Galle, *op. cit.*, p. 215, 217, 221, and 222.) Biela's interior comet, or, as it is also called, Biela's and Gambart's, was first seen by Montaigne on the 8th of March, 1772; then by Pons on the 10th of November, 1805; afterward on the 27th of February, 1826, at Josephstadt in Bohemia, by Von Biela; and on the 9th of March by Gambart, at Marseilles. The earliest rediscoverer of the Comet of 1772 is undoubtedly Biela, and not Gambart; but, on the other hand, he calculated the elliptical elements of its orbit earlier than Biela, and nearly at the same time as Clausen. (Arago, in the *Annuaire* of 1832, p. 184; and in the *Comptes Rendus*, tom. iii., 1836, p. 415.) The *first* reappearance of Biela's Comet, *calculated beforehand*, was observed by Henderson, at the Cape of Good Hope, in October and December, 1832. The already mentioned wonderful doubling of Biela's Comet by separation took place at its eleventh reappearance since 1772, at the end of the year 1845. (See Galle, by Olbers, p. 214, 218, 224, 227, and 232.)