

may not acquire different orbits by retardation, *i. e.*, unequal velocity of revolution, and the unequal influence of perturbations? In a treatise already alluded to, Stephen Alexander has attempted to explain the *genesis* of all the *interior comets* by the assumption of such an hypothesis, certainly but inadequately founded. In antiquity, also, similar occurrences appear to have been observed, but not sufficiently described. Seneca states, upon the authority, as he himself says, of an unreliable witness, that the comet which was considered to have caused the destruction of the two towns of Helice and Bura separated into two parts. He adds ironically, why has no one seen two comets unite to form one? \* The Chinese astronomers speak of "three dome-formed comets," which appeared in the year 896, and pursued their course together. †

Among the great number of calculated comets, there are, up to the present time, eight known, whose period of revolution is shorter than that of Neptune. Of these eight, *six* are *interior comets, i. e.*, such whose *aphelia* are within the orbit of Neptune, *viz.*, the comets of Encke (aphelion, 4.09), of De Vico (5.02), Brorsen (5.64), Faye (5.93), Biela (6.19), and D'Arrest (6.44). If the distance of the Earth from the Sun is taken as = 1, the orbits of all these six *interior comets* have *aphelia* which are situated between Hygeia (3.15), and a limit which is nearly  $1\frac{1}{4}$  the Earth's distance from the Sun beyond Jupiter. The two other comets, likewise of a shorter period of revolution than Neptune, are the 74-year *Comet of Olbers*, and the 76-year *Comet of Halley*. Up to the year 1819, when Encke first discovered the existence of an interior comet, these two latter ones were those of the shortest period among the then calculated comets. Olbers's Comet of 1815, and Halley's Comet are, since the discovery of Neptune, situated in their *aphelia* only 4 and  $5\frac{2}{3}$  times the Earth's distance from the Sun—beyond the limits which would allow of their being considered interior comets. Although the term *interior comet* may suffer alteration from the

\* "Ephorus non religiosissimæ fidei, sæpe decipitur, sæpe decipit. Sicut hic Cometem, qui omnium mortalium oculis custoditus est, quia ingentis rei traxit eventus, cum Helicen et Burin ortu suo merserit, ait illum discessisse in duas stellas: quod præter illum nemo tradidit. Quis enim posset observare illud momentum, quo Cometes solutus et in duas partes redactus est? Quomodem autem, si est qui viderit Cometem in duas dirimi, nemo vidit fieri ex duabus?"—Seneca, *Nat. Quæst.*, lib. vii., cap. 16.

† Edward Biot, *Recherches sur les Comètes de la Collection de Matuan-lin*, in the *Comptes Rendus*, tom. xx., 1845, p. 334.