

ancient *Jewish tables*, some 430 years before the Christian era, and 755 years before the Council of Nice.* The Mishna, compiled about the year 140 of the Christian era, refers, in numerous passages, to the intercalary year; and there further appears in its pages numerous indications of the existence of general principles of a calendar system, though there be no direct statement or exposition thereof, prior to the public teachings of those great and learned men to whom the introduction of the present Jewish Calendar system has been referred. The first of these we notice is Rab Shemuel, who became Rosh in Nahardœa, in A. M. 3997, according to the "Yuchasin" and "Tsemach David" of Ganz. Among other titles he received the name of the "Astronomer", being always known as ר' שמואל ירחיאי because of his especial celebrity in that science. Of him it is said ונהרין ליה שבילי דשמיא כשבילי דנהרדע that the paths of the heavens were as familiar to him as the roads of Nahardœa. But in still higher terms is his contemporary, Rab Ada, spoken of. Although most branches of knowledge were familiar to him, yet he excelled in arithmetic, geometry, and astronomy. The great Maimonides in his elaborate treatise קדוש דודע (Consecration of the months,) speaks in approval and admiration of his calculations—to which he accords the praise of perfect contrivance, and astronomical exactitude, as indeed do all scholars, Jews as well as Christians, and of these even the most inveterate opponents and detractors of the Rabbies. Dean Prideaux says,† "His work may be truly reckoned the greatest piece of art and ingenuity that is to be found among the Jews." In short, he laid the foundations for the Jewish Calendar, which the eminent Hillel Hanasi, great grandson of R. Yehudah Hakadosh, the compiler of the Mishna, completed:—"It is the same system which we now follow, and which we shall ever follow throughout the dispersions of Israel, until the coming of our redeemer."‡ The peculiarity of Rab Ada's system was the introduction of fractions (57ths) which Rab Shemuel had not publicly taught. According to Rab Ada, the solar year contained 365 days, 5 hours, 55 minutes, $25\frac{2}{3}$ seconds. The lunar month from one conjunction to the other 29 d. 12 h., $44'\frac{1}{2}$, and the lunar cycle of 19 years 6939 d. 16 h. $33'\frac{1}{2}$. This calculation upon which the Jewish Calendar is based, so agrees with the Gregorian, or New Style, in use among Christians, (introduced, be it remembered, by Pope Gregory XIII, as late as 1582 of the Christian era, *some fourteen centuries after* the publication and adoption of Rab Ada's calculations,) that there arise only a difference of about two days in five centuries. The scheme generally adopted, upon authority of Hillel Hanasi, in further detail, is this:—The Cycle consists of 19 lunar years, and contains 235 months,

* Even Mr. Allan joins the learned Dr. Hale in this opinion, which has been ably maintained by the celebrated Anatolius, Bishop of Laodicea, A.C. 270.

† Connections, Preface to vol 1.

‡ Ganz in "Tsemach David."