

36 SANCTIFICATION OF THE NEW MOON

an embolismic year, according to the rule explained above (Sec. 8).

10. There are certain indications by which you may be guided in order not to go astray in determining the sequence of the months of the year. These indications are based upon the rules of calculation, the declarations and postponements as explained above, and they are as follows: If the New Year's Day of a year, whether ordinary or embolismic, falls on a Tuesday, that year will always have regular months; if the New Year's day of a year, whether ordinary or embolismic, falls on a Saturday or Monday, it will never have regular months; if, however, it falls on a Thursday, we have to distinguish between the ordinary and the embolismic year; if it is an ordinary year, it can never have defective months, according to this system of calculation; if it is an embolismic year, it can never have regular months, according to this same system.

CHAPTER IX

1. As to the solar year, there are certain Jewish Sages who have held that it consists of 365 days and one quarter of a day, which is six hours, while some have held that the fraction is less than a quarter of a day. And the same disagreement may be found also among the Greek and Persian scholars.

2. According to the opinion which holds that the year consists of $365\frac{1}{4}$ days, there remains in each cycle of 19 solar years a balance of 1 hour and 485 parts, as pointed out above (vi, 10), and there is an interval of 91 days and $7\frac{1}{2}$ hours between one *tēḵufah* and another; therefore, once you know the day and the hour in which one *tēḵufah* occurs, you can start counting from this *tēḵufah* to the next one, and from the latter to the third one, down to the end of time.

3. The *tēḫufah* of Nisan occurs in that hour and part in which the sun enters the beginning of the constellation of Aries; the *tēḫufah* of Tammuz occurs when the sun enters the beginning of the constellation of Cancer; the *tēḫufah* of Tishri occurs when the sun enters the beginning of the constellation of Libra; and the *tēḫufah* of *Ṭebēṭ* occurs when the sun enters the beginning of the constellation of Capricorn. And according to our method of calculation the *tēḫufah* of Nisan of the first year of Creation occurred seven days, nine hours, and six hundred and forty-two parts of an hour prior to the conjunction of Nisan—in numerals: 7d 9h 642p.

4. (i) The procedure in computing the moment of any *tēḫufah* is as follows: First you find how many full cycles have elapsed from the year of Creation to the beginning of the cycle which you have in mind; take for each cycle one hour and 485 parts (Sec. 2) and convert the parts into hours and the hours into days; deduct from the sum total seven days, nine hours, and six hundred and forty-two parts and add the balance to the time of the conjunction of Nisan (vi, 14 f.) in the first year of the cycle which you have in mind; the result will indicate to you in which hour of the day and on which day of the month the *tēḫufah* of Nisan of that first year of the cycle will occur. And from this time on you begin to count 91 days and $7\frac{1}{2}$ hours for each following *tēḫufah* (Sec. 2).

(ii) And if you wish to find the *tēḫufah* of Nisan of a particular year in the cycle with which you are dealing, you proceed as follows: Take for each full cycle one hour and 485 parts, and for each full elapsed year of the cycle take 10 days, 21 hours, and 204 parts (vi, 4), add up all the items, and deduct from the sum 7 days, 9 hours, and 642 parts; discard from the balance the multiples of 29 days, 12 hours, and 793 parts, which is the duration of a lunar month (vi, 3), and add the balance, which is less than a lunar month, to the time of the conjunction of Nisan in the year in question, and you will then find on which day of the month