III. 4 DATES RELATING TO SEASONAL PHENOMENA AND MISCELLANEOUS ASTRONOMICAL DATES

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The rising and falling of the Nile and the harvesting of grain and fruit occur regularly at certain times within the solar year. When their dates were recorded in terms of the Egyptian calendar, they can be converted into absolute dates. Occasions of quarrying expeditions have also been traditionally considered examples of seasonal dates, since Egyptologists conjectured that such work was not undertaken during the summer.\(^1\) Even if so, the conversions yield intervals that are too broad to be of much use for chronology. For if cool weather lasts for 120 days, from November to February, then a “cool season date” spans an interval of \(4 \times 120 = 480\) years. Although there might have been a tendency to send expeditions to quarries during the cooler months, there are nevertheless attestations for expeditions at the hottest time of the year.\(^2\) Thus conversion of expedition dates can result in chronological contradictions.

**Dates of the Nile Flood**

The Nile flood results principally from monsoon rains that fall over the Ethiopian plateau between mid-May and September.\(^3\) In modern times the dams constructed at Aswan beginning around 1900 have prevented the annual flooding of the Nile Valley. Data recorded in the 19th century and the Middle Ages provide information about the onset and duration of the flood which are crucial for evaluating pharaonic dates. The Nile sunk to its lowest level in April/May; towards the end of

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\(^2\) Beckerath, *Chronologie*, 53.

May and the beginning of June it began to rise. The biography of Weni, a Dyn. 6 official, seems to mention a low water date. Weni reports that he brought an altar from Hatnub to the pyramid of Merenre within 17 days in III Shemu, “although there was no water on the $\Delta \omega$”. Lieblein, who dated Merenre far too early at ca. 2525 BC, calculated that III Shemu 17 corresponded to March 5 Greg., a time when the river falls fast. Gardiner paraphrased Weni’s description with “when the river was at its lowest”. If so, Merenre would have reigned between ca. 2817 and 2694 BC when III Shemu 30 coincided with May 31 (Greg.) and III Shemu 1 with April 1 (Greg.). Following Gardiner and using the standard chronology for the OK, Eyre correctly calculated the Gregorian months December and January as corresponding to III Shemu, but he wrongly designated these months as “a time of low, if not the lowest, water”. There are various possibilities to resolve the contradictions in Weni’s report: the translation of $\Delta \omega$ as sandbanks may be wrong; the flood might have been low and run off very early that year; Weni may even have exaggerated.

Another low water date refers to a difficult passage through the channels of the Semna rapids at Uronarti in 19 Senwosret III. Correlated with the Dal inscription of year 10 of Senwosret III, the Uronarti inscription “provides evidence for an extraordinary variability in the Nile levels of late winter during the reign of Senwosret III”. Seasonal dates that diverge from the statistical mean cannot be used to establish absolute chronology. In the following paragraphs the basic data are presumed to be samples of the statistical mean.

64 Gregorian maximum flood dates on record from the Middle Ages and the 19th and early 20th centuries refer to the Nile gauge at Roda (Old Cairo), whereas the pharaonic high flood dates refer to Karnak temple. At Roda the maximum height was reached between September

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6 The correct correspondence of III Shemu 17 in 2525 BC is March 7 Greg.
7 Gardiner, Egypt, 97.
8 If Merenre reigned in ca. 2222 ± 6 BC, then III Shemu corresponded in his reign to ca. December 8 to January 7 (Greg.).
9 Eyre (n. 1), 16.
11 Borchardt, Mittel, 91.
12 B. Bell, AJA 79 (1975), 238.