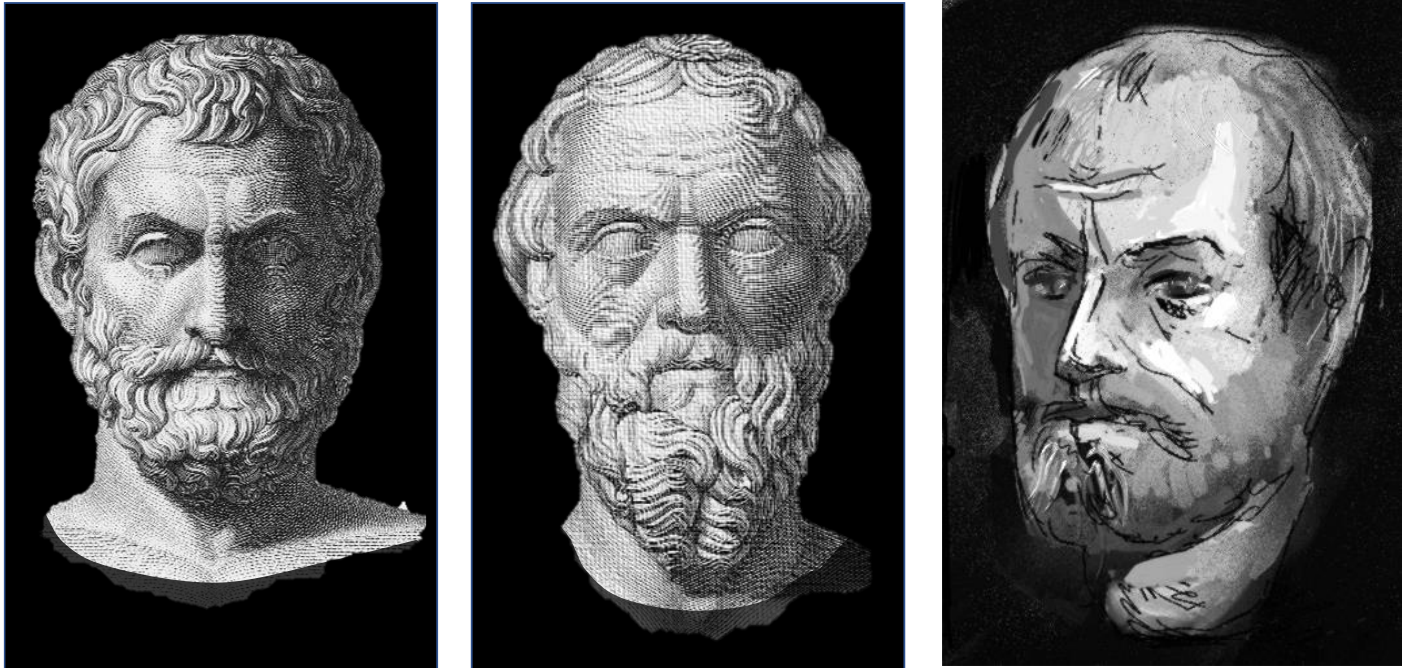


# Understanding Climate: Gifts from the Nile

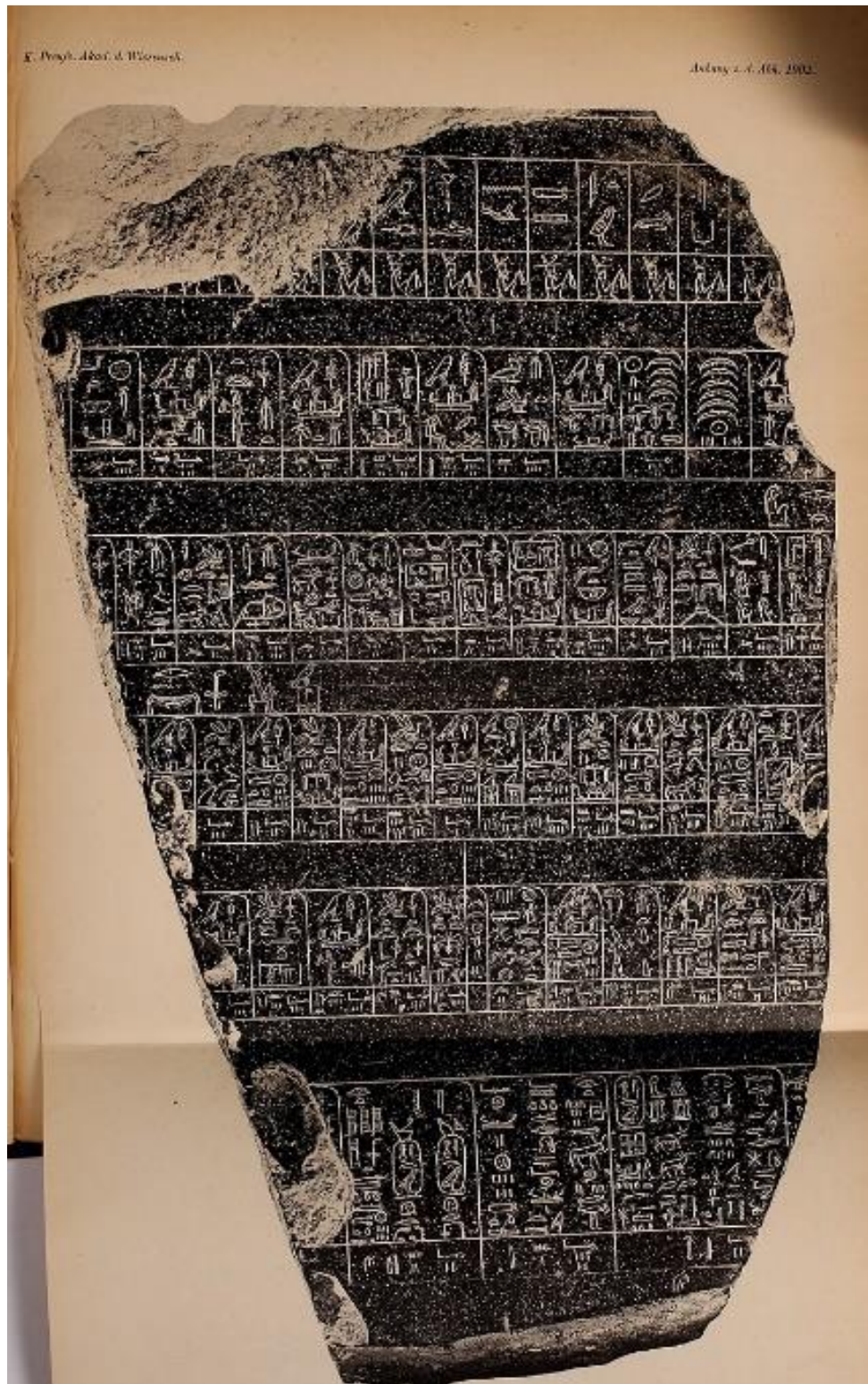
Demetris Koutsoyiannis and Theano Iliopoulou

## Annex of illustrations



**Picture 1.** Greek philosophers who studied the Nile—depictions based on known sculptures (from left to right): Thales of Miletus (Θαλῆς ὁ Μιλήσιος, c. 624/623 – c. 548/545 BC), one of the Seven Sages of Greece the first Greek philosopher also recognized as the father of science; Herodotus (Ἡρόδοτος, c. 484–c. 425 BC), historian, author of *The Histories* (Ἱστορίαι), considered to have been the first to treat historical subjects using a method of systematic historiographic investigation; Aristotle (Ἀριστοτέλης, 384–322 BC), founder of the Lyceum and the Peripatetic school of philosophy and author of about 400 books, many of which are lost.

**SOURCES:** Thales and Herodotus adapted from: E.Q. Visconti, *Planches de l'Iconographie Grecque*, De l'Imprimerie de P. Didot l'Ainé, Paris, 58 plates (engravings), 1817, [https://archive.org/details/gri\\_33125010850713/](https://archive.org/details/gri_33125010850713/), <https://arachne.dainst.org/entity/1884649>; E.Q. Visconti, *Iconographie Grecque (ou Recueil des Portraits Authentiques des Empereurs, Rois, et Hommes Illustres de l'Antiquité)*, vol. 1-III, J.P. Giegler, Milan, <https://zenon.dainst.org/Author/Home?author=Visconti%2C+Ennio+Quirino%2C+1751-1818>, 1824-1826. Aristotle taken from D. Koutsoyiannis, N. Mamassis, and A. Tegos, “Logical and illogical exegeses of hydrometeorological phenomena in ancient Greece”, *Water Science and Technology: Water Supply*, 7 (1), 13–22, 2007, created by Manos Christofakis.



**Picture 2.** The Palermo Stone, the fragment of the Egyptian Royal Annals housed in Palermo, Sicily, Italy, which included, in other information, measurements of the height of the annual Nile flood and inundation.

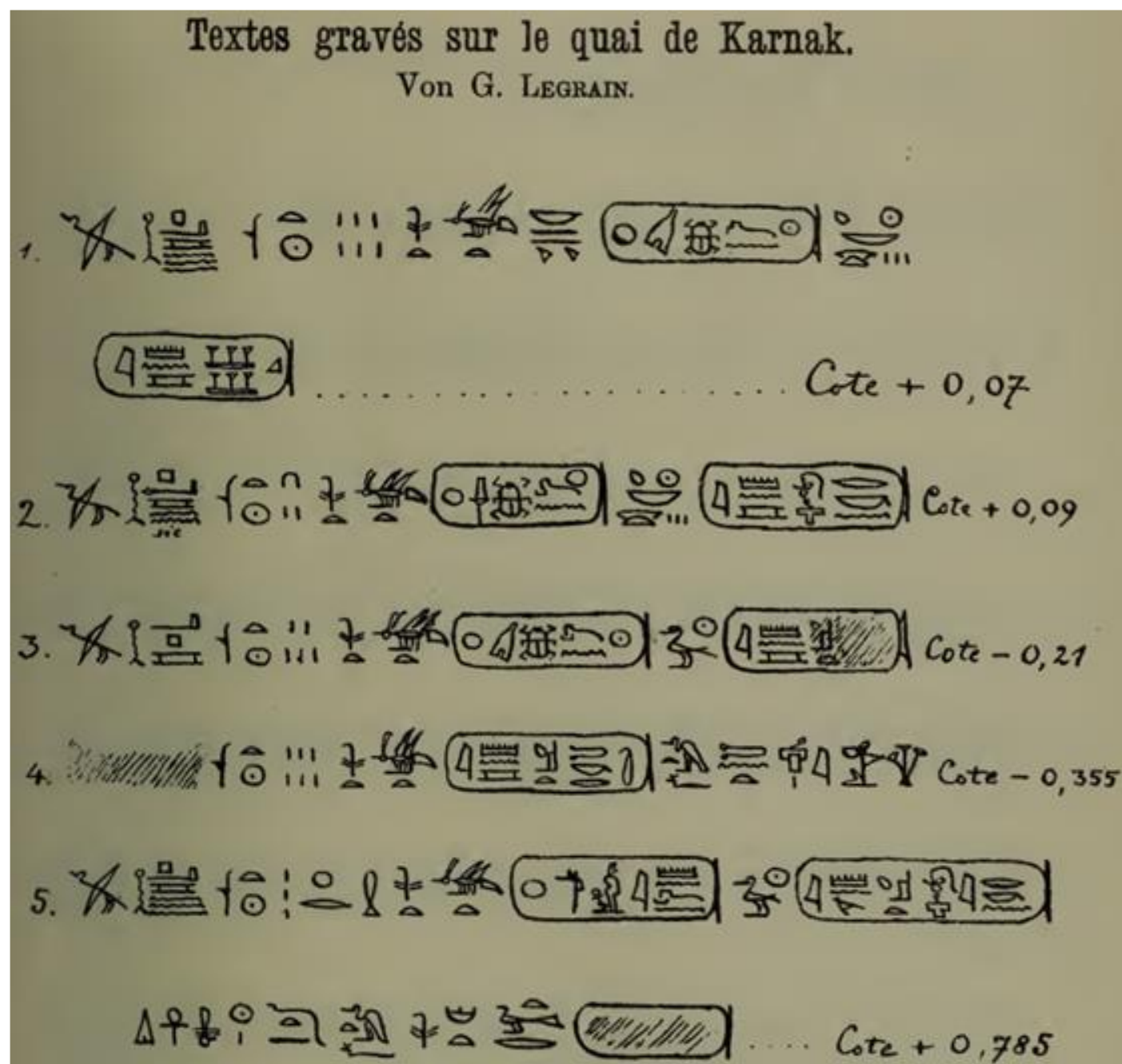
**SOURCE:** [https://en.wikipedia.org/wiki/Palermo\\_Stone#/media/File:Abhandlungen\\_der\\_K%C3%B6niglich\\_Preussischen\\_Akademie\\_der\\_Wissenschaften\\_aus\\_dem\\_Jahre\\_\(1902\)\\_16765759871.jpg](https://en.wikipedia.org/wiki/Palermo_Stone#/media/File:Abhandlungen_der_K%C3%B6niglich_Preussischen_Akademie_der_Wissenschaften_aus_dem_Jahre_(1902)_16765759871.jpg)





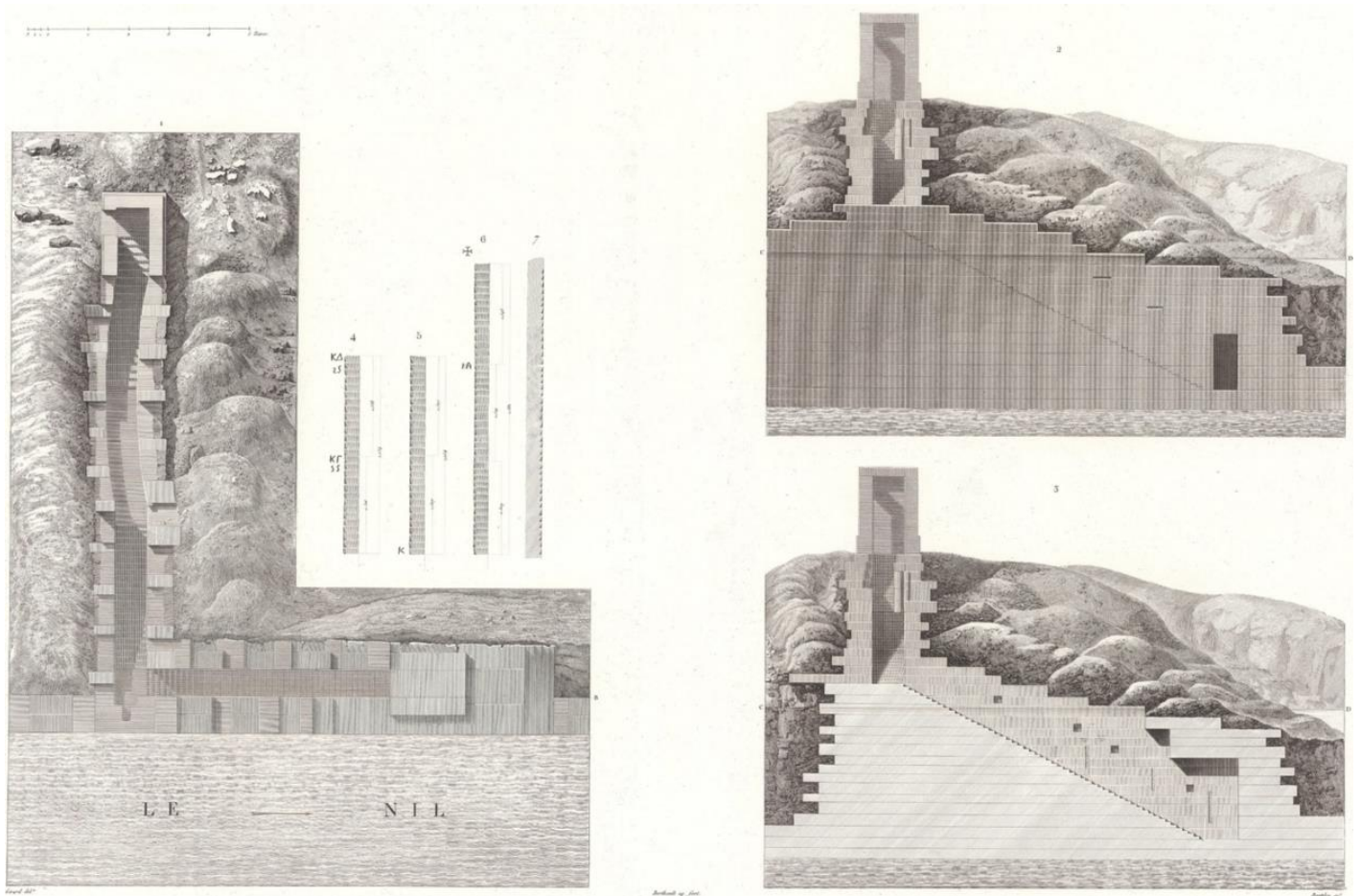
**Picture 3.** Stone block (Conservation number of Sudan National Museum SNM 34353) with inscription of the Nile record at Kumma. The translation reads “*Water-edge of the flood of the year 32, under the Majesty of the King of Upper and Lower Egypt, Nimaât-ra [Amenemhat III], may he be granted life for ever and ever*”.

**SOURCE:** E. Yvanez, *Rock Inscriptions from Semna and Kumma – Epigraphic Study*, Sudan National Museum, National Corporation for Antiquities and Museums, Khartoum, Sudan, 2010, <https://www.sfdas.com/IMG/pdf/rock-inscrip28e2.pdf>.



**Picture 4.** Texts engraved on the quay of Karnak, along with the heights measured above (+) or below (–) the floor of the west court and the hypostyle hall whose average elevation is 74.25 m a.s.l. The part of the first page of the paper, reproduced here, contains 5 out of 45 entries. Their formula is simple, and the meaning is “*The Nile in the year x of the king of Upper and Lower Egypt y*”. The fifth entry (with height 0.785) corresponds to the second highest flood, which occurred in regnal year 3 of the of pharaoh Osorkon II, likely in 870 BC.

**SOURCE:** Reproduced from G. Legrain, “Textes gravés sur le quai de Karnak”, *Zeitschrift für Ägyptische Sprache und Altertumskunde*, 34 (1), 111-118, 1896, <https://archive.org/details/zeitschriftfr34brug/page/110/>.



**Picture 5.** The nilometer at the Elephantine Island near Aswan: (**left**) plan of a staircase leading down to the Nile; (**upper right**) cross section, showing the door which allows communication with the river and, at a higher elevation than the door, two horizontal openings that illuminate the staircase; (**lower right**) detail, showing, along the stairs, graduated scales that were used to measure the flood of the Nile. These scales, shown separately, include Greek inscriptions for the numbering of cubits.

**SOURCE:** C.L.F. Panckoucke, *Description de l'Égypte: Ou, Recueil des Observations et des Recherches Qui Ont Été Faites en Égypte Pendant l'Expédition de l'Armée Française*, Imprimerie de C.L.F. Panckoucke, Paris, France, 1821, <https://archive.org/details/descriptiondelg10pancgoog/page/36/mode/2up>; <https://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~320415~90089550>.





**Picture 6.** An artwork (Coptic textile) of the Byzantine period, dated between c. 430 – 640 AD, found in Antinoopolis, some 250 km south of Cairo and kept in Louvre Museum, Paris, with a Nilotic scene including nilometer with marked cubits with Greek numerals, IZ = 17 and IH = 18.

**SOURCE:** <https://www.livius.org/pictures/egypt/antinoopolis/antinoopolis-coptic-textile-nilotic-scene/>.





**Picture 7.** The nilometer at the Roda Island near Cairo: **(upper left)** location on map; **(upper right)** drawing from year 1737, when it was in operation, by Frederic Louis Norden (1708 –1742; Danish naval captain, cartographer, and archaeological explorer); **(lower)**; modern photos of the upper and lower part **(left and right, respectively)**, showing the marble octagonal column (with a Corinthian crown) standing in the center of the chamber, where the measurements were taken; the column is graded and divided into 19 cubits.

**SOURCES:** **(upper left)** Google Earth; **(upper right)** F.L. Norden, *Voyage d'Égypte et de Nubie*, Pierre Didot l'ainé; Constantin, Paris, 1795, [https://archive.org/details/4NN359\\_1\\_NORD/page/n293/mode/2up](https://archive.org/details/4NN359_1_NORD/page/n293/mode/2up); **(lower)** photos of by Mahmoud Anees and Loai Samen, Google maps, <https://goo.gl/maps/T8NUgoDAorK2>; <https://goo.gl/maps/dsdJHJYVv572>.