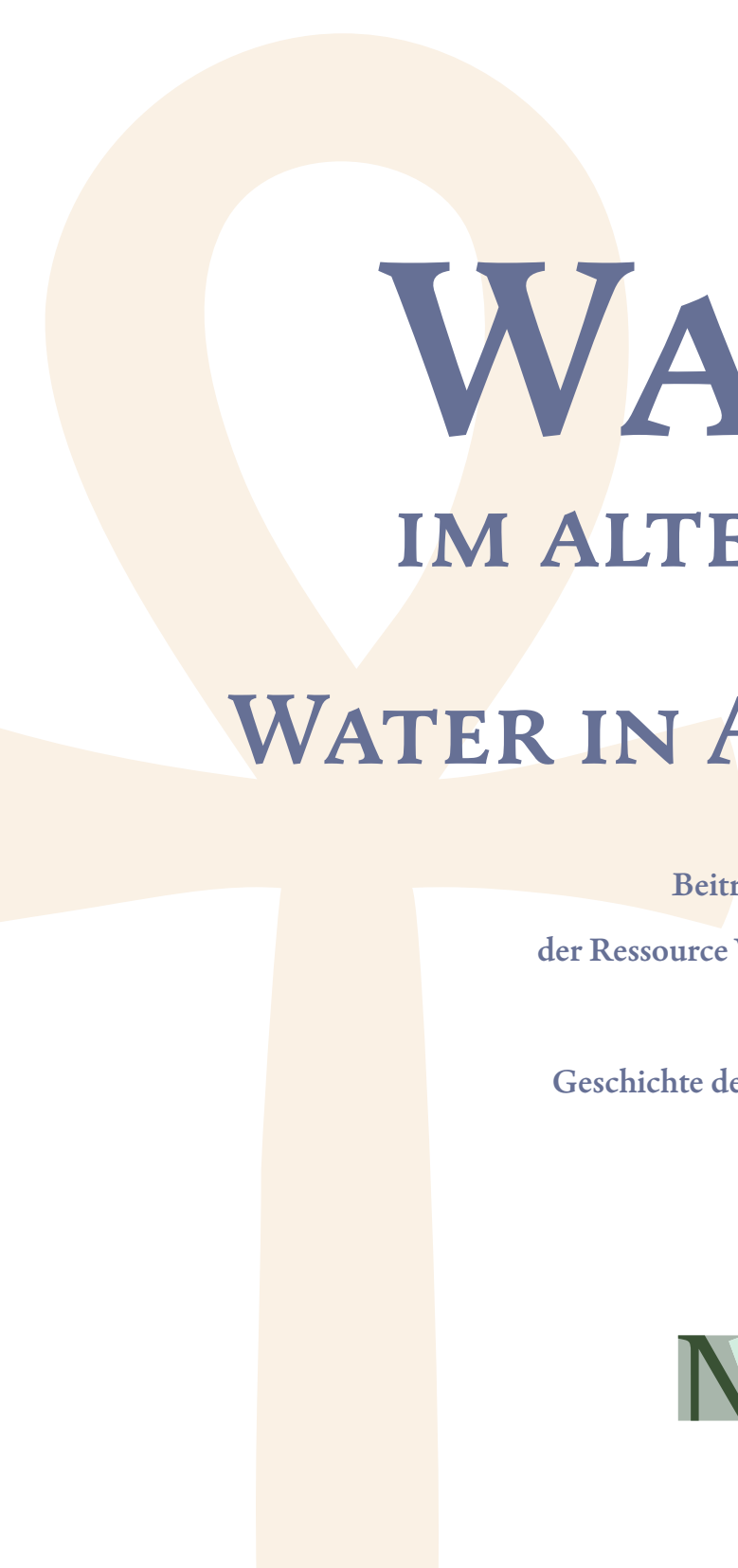




WASSER

IM ALTEN ÄGYPTEN

WATER IN ANCIENT EGYPT

Beiträge zur Bedeutung
der Ressource Wasser in pharaonischer Zeit

Geschichte der Wasserversorgung Band 8



Nünnerich-Asmus
Verlag & Media





WASSER

IM ALTEN ÄGYPTEN

WATER IN ANCIENT EGYPT

HEIDI KÖPP-JUNK (HRSG.)

IM AUFTRAG DER FRONTINUS GESELLSCHAFT

GESCHICHTE DER WASSERVERSORGUNG BAND 8



IMPRESSUM

284 Seiten mit 211 Abbildungen

Bibliografische Information der Deutschen Nationalbibliothek

Die Deutsche Nationalbibliothek verzeichnet diese Publikation in der Deutschen Nationalbibliografie; detaillierte bibliografische Daten sind im Internet über <http://dnb.dnb.de> abrufbar.

© 2026 by Nünnerich-Asmus Verlag & Media GmbH, Oppenheim am Rhein

ISBN 978-3-96176-356-6

Herausgebende: Heidi Köpp-Junk im Auftrag der Frontinus Gesellschaft

Redaktion und Lektorat: Heidi Köpp-Junk

Projektbetreuung und Verlagslektorat: Franziska Grau

Korrektorat unter Mitarbeit von: Klara Rothmann, Luisa Unbescheiden

Layout und Satz: GOfrafix.de – Oliver Kage

Gestaltung des Titelbildes: hjwiehr, Oppenheim

Titelabbildungen: Hintergrund: Kanal nahe Kairo, Foto: Heidi Köpp-Junk; Bilderleiste: links: Darstellungen von Bäumen und Pflanzen im Grab von Sennedjem in Theben (19. Dynastie), Foto: Ursula Mangold, Fellbach. Mitte: Sogenanntes „Butisches Begräbnis“ mit Sykomoren und Dattelpalmen, © Museum August Kestner, Hannover, Inv.-Nr. 1935.200.174; Foto: Christian Tepper (Museumsfotograf). Rechts: Wiedergabe eines Schadufs, Malerei im Grab des Ipy in Theben (19. Dynastie). Nach: N. de Garis Davies, Two Ramesside Tombs at Thebes. Publication of the Metropolitan Museum of Art Egyptian Expedition 5 (New York 1927), Taf. 29, © Metropolitan Museum of Art, New York, mit freundlicher Genehmigung.

Frontispiz und S. 11, S. 284: Fotos: Heidi Köpp-Junk.

Sollte die Publikation Links auf Webseiten Dritter enthalten, so übernehmen wir für deren Inhalt keine Haftung, da wir uns diese nicht zu eigen machen, sondern lediglich auf deren Stand zum Zeitpunkt der Erstveröffentlichung verweisen.

Alle Rechte, insbesondere das der Übersetzung in fremde Sprachen, vorbehalten. Ohne ausdrückliche Genehmigung des Verlages ist es auch nicht gestattet, dieses Buch oder Teile daraus auf fotomechanischem Wege (Fotokopie, Mikrokopie) zu vervielfältigen oder unter Verwendung elektronischer Systeme zu verarbeiten und zu verbreiten.

Für die Bildrechte zeichnen die Autorinnen und Autoren verantwortlich. Sollten sich trotz gewissenhafter Überprüfung durch die Herausgebenden Rechte nicht abgegolten oder Fehler unterlaufen sein, bitten wir um Benachrichtigung des Verlags, um etwaige Ansprüche im üblichen Rahmen abzugelten.

Printed in Europe by Nünnerich-Asmus Verlag & Media

Weitere Titel aus unserem Verlagsprogramm finden Sie unter: www.na-verlag.de

Nünnerich-Asmus Verlag & Media GmbH, Krämerstraße 25, 55276 Oppenheim am Rhein

E-Mail: verlag@na-verlag.de

INHALT

Impressum	4
Inhalt	5
Vorwort	7
Geleitwort	9
Technische Hinweise	10
The Significance of Water in Ancient Egyptian Culture Heidi Köpp-Junk	12
Nilflut und Bewässerungstechnik im Alten Ägypten Heidi Köpp-Junk	34
Dewatering Techniques in Ancient Egypt – An Overview Heidi Köpp-Junk	88
Brunnen im pharaonischen Ägypten Henning Franzmeier	110
The Daily Water in the Egyptian House – The Amarna Example Delphine Driaux	134
Wasser als Bedrohung – Katastrophenmanagement im Ägypten des Neuen Reiches und der Spätzeit Svenja C. Dirksen	152



Water and Rain in Ancient Egyptian Religion, Cult, and Temples – From the Niuserre Sun Temple Channels to Waterspouts Heidi Köpp-Junk	172
Waterspouts at Tuna el-Gebel Heidi Köpp-Junk	198
Gärten des Diesseits und Jenseits im pharaonischen Ägypten Christian E. Loeben	222
The Water Organ – Origin, History, Terminology, Technique and Use Lucy-Anne Taylor	246
Karte	268
Chronologie des Alten Ägypten	269
Chronologie der Innovationen in der Entwässerungstechnik im pharaonischen Ägypten Heidi Köpp-Junk	271
Glossar Heidi Köpp-Junk	273
Danksagungen	276
Index	277



VORWORT

DR. HEIDI KÖPP-JUNK

Wie ging man in pharaonischer Zeit mit der Ressource Wasser um? Dieses von der Frontinus-Gesellschaft initiierte Buch „Wasser im Alten Ägypten – Beiträge zur Bedeutung der Ressource Wasser in pharaonischer Zeit“ geht dieser Frage detailliert nach und thematisiert ausführlich die Bedeutung des Wassers in der Nil-Oase Ägypten. Wasser ist das höchste und lebenswichtigste Gut in der ägyptischen Kultur, weshalb es auch in der Religion eine zentrale Rolle spielt.

Der vorliegende Band bietet eine profunde Einsicht in die Verwendung von Wasser in pharaonischer Zeit. Neben Übersichten über verschiedene Themen wie Bewässerung, Entwässerung, Brunnen und Trinkwasser enthält er zudem detaillierte Untersuchungen zu Einzelaspekten wie Gärten, der Wasserorgel, den Gefahren des Wassers sowie den neuesten mit Wasser in Verbindung stehenden Grabungsergebnissen. Dass man sich im Alten Ägypten der lebenswichtigen Bedeutung von Wasser sehr wohl bewusst war, spiegelt sich nicht zuletzt in der ägyptischen Religion, im Kult und in den Tempeln wider, wie unten ausgeführt wird.

Dieses Buch wurde so verfasst, dass sowohl Ägyptologinnen und Ägyptologen als auch Fachkolleginnen und Fachkollegen aus den Nachbarfächern sowie vor allem Wasser- und/oder Ägypten-Interessierte davon profitieren. Die Artikel sind eigenständig und nicht aufeinander aufbauend. Daher treten ggf. thematische Wiederholungen auf, die aber durchaus beabsichtigt sind, um dem Leser das Verständnis zu erleichtern, bzw. aufgrund der Eigenständigkeit der einzelnen Artikel in Kauf genommen wurden. Ein Index am Ende erleichtert dem Leser, das Schlagwort zu finden, das er sucht.

Dieser Band ist folgendermaßen aufgebaut: Nach einem einleitenden Artikel zur Bedeutung des Wassers in der ägyptischen Kultur, verfasst von der Herausgeberin, wird von ihr auf das altägyptische Bewässerungssystem und den Nil eingegangen. Anschließend erfolgt von der gleichen Autorin eine Übersicht über die Entwässerungstechniken für Regen- und Gebrauchtwasser in Ägypten

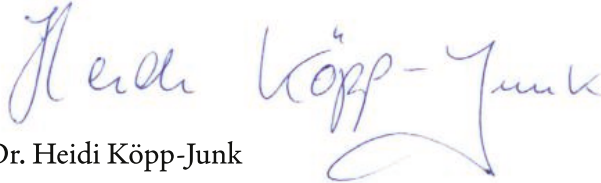


per se, bevor Henning Franzmeier die Brunnen im pharaonischen Ägypten thematisiert. Delphine Driaux legt die Trinkwasserversorgung am Beispiel der Stadt Amarna dar. Die Gefahren, die vom Wasser ausgehen, werden von Svenja C. Dirksen beleuchtet. Nach der Darlegung der Herausgeberin, wie Wasser und Regen in der altägyptischen Religion, im Kult und in den Tempeln erscheinen, wird von ihr auf die Wasserspeier an den Tempelgräbern in der Nekropole Tuna el-Gebel eingegangen. Christian Loeben widmet sich den Gärten im pharaonischen Ägypten und Lucy-Anne Taylor entführt den Leser in die Geheimnisse der in Ägypten erfundenen Wasserorgel.

Der Untersuchungszeitraum dieses Bandes erstreckt sich von der Prädynastik bis in Griechisch-Römische Zeit, *i.e.* vom 4. Jt. v. Chr. bis zum 4. Jh. n. Chr.

Am Ende des Bandes befindet sich eine Übersichtskarte, eine Zeittafel der ägyptischen Geschichte, eine weitere mit der chronologischen Abfolge des Auftretens der einzelnen Entwässerungstechniken, ein Glossar sowie die Danksagungen. Den Abschluss bildet ein Index.

Trier, Juli 2026


Dr. Heidi Köpp-Junk

GELEITWORT

PROF. DR.-ING. HANS MEHLHORN

Der vorliegende Band aus der Reihe „Geschichte der Wasserversorgung“, der den Band 8 bildet, trägt den Titel „Wasser im Alten Ägypten – Beiträge zur Bedeutung der Ressource Wasser in pharaonischer Zeit“. Bei „Ägypten“ und „Wasser“ denkt man möglicherweise zuerst an Kreuzfahrten und touristische Nilreisen. Zwar wird auch das Reisen auf dem Nil thematisiert, allerdings in Bezug auf die pharaonische Zeit, war doch der Nil die Hauptverkehrsader Ägyptens und trug maßgeblich zum hohen Grad an Mobilität und Handel bei.

Statt eines Vademecums zur Durchführung einer Schiffsreise liegt vor Ihnen ein umfangreiches Übersichtswerk mit den verschiedensten Aspekten, die mit Wasser und Ägypten zu tun haben, sei es die Bewässerung mit den technischen Innovationen Schaduf und Sakijeh, Brunnen, Trinkwasser, Entwässerungspraxis und Gärten bis hin zur Wasserorgel, die in Ägypten erfunden wurde. Vorgestellt werden ferner die neuesten Grabungsergebnisse in Bezug auf Wasser wie aus Athribis und Tuna el-Gebel.

Die Herausgeberin Dr. Heidi Köpp-Junk ist seit 2017 Mitglied der Frontinus-Gesellschaft. Sie bekleidet derzeit die Position der Zweiten Vizepräsidentin und ist zudem im Wissenschaftlichen Beirat tätig. Dank ihrer zahlreichen Veröffentlichungen über ihre langjährige Forschungs- und Ausgrabungsarbeit im Bereich der Wassertechnologie ist sie international in Fachkreisen bekannt. Sie ist eine der wenigen Expertinnen in der Ägyptologie weltweit, die sich, neben Mobilität und Reisen im Alten Ägypten sowie Musikarchäologie, auf altägyptische Wassersysteme, Entwässerungstechniken und -praktiken spezialisiert hat.



Prof. Dr.-Ing. Hans Mehlhorn, Präsident der Frontinus-Gesellschaft



TECHNISCHE HINWEISE

DR. HEIDI KÖPP-JUNK

Die einzelnen Beiträge des vorliegenden Bandes folgen den Publikationsrichtlinien des Deutschen Archäologischen Instituts. So wurden die Abkürzungen von Reihen, Zeitschriften und Monographien dem dortigen Abkürzungsverzeichnis übernommen. Zusätzliche Abkürzungen werden in den entsprechenden Verzeichnissen der einzelnen Beiträge aufgelöst.

Eigen-, Götter- und Königsnamen, Ortsnamen und Fachtermini folgen in ihrer Schreibweise dem Lexikon der Ägyptologie, den Originalpublikationen bzw. den im Fach gebräuchlichen Umschreibungsformen.







THE SIGNIFICANCE OF WATER IN ANCIENT EGYPTIAN CULTURE

HEIDI KÖPP-JUNK

Abstract

Water is undoubtedly Egypt's most important and fundamental resource. Numerous aspects of daily life are directly related to water, some of which are presented in this study. A few of these are obvious, such as agriculture and wells for water supply. Water is no less fundamental in terms of hygiene and bathrooms, and water supply in the desert. Another factor that should not be underestimated is the use of waterways for trade, traffic and transport. Finally, the ancient Egyptian water and engineering technology, which includes irrigation and drainage techniques as well as the invention of the water organ and the water clock, should be emphasised.

Zusammenfassung

Wasser ist unbestritten die wichtigste und elementarste Ressource Ägyptens. Zahlreiche Aspekte des täglichen Lebens stehen unmittelbar mit Wasser in Verbindung, einige davon werden in dieser Untersuchung thematisiert. Manche sind

offensichtlich, wie z. B. die Landwirtschaft sowie Brunnen zur Wasserversorgung. Doch nicht minder elementar ist Wasser für die Hygiene sowie die Wasserversorgung für Reisen in der Wüste. Ein nicht zu unterschätzender Faktor ist ferner die Nutzung der Wasserwege für Handel, Verkehr und Transport. Letztendlich ist die altägyptische Wasser- und Ingenieurtechnik zu betonen, die Bewässerungs- und Entwässerungstechniken umfasste, wie auch die Erfindung der Wasserorgel und der Wasseruhr.

Introduction

According to Aristotle, “Thales says that it [the nature of things] is water”¹: Water is the source of life. This is particularly evident and fundamental in Egypt, because the Nile oasis is surrounded by desert in both the west and the east². Of course, it is necessary to provide people with water not only for drinking, but also for hygiene, bathing³, laundry, and cooking etc. Water also supplied Egypt with food by means of the annual Nile flood and is of course essential for livestock farming.





Fig. 1
Fishing and fowling scene in the tomb of Menna (TT69) at Thebes.

Furthermore, there is evidence of gardens in which fruit and vegetables are grown⁴. In addition to this practical aspect, these gardens⁵ also had aesthetic value, as can be seen from various illustrations⁶.

Evolutionarily, life emerged from water⁷. In the Book of Genesis⁸ the importance of water is emphasised, and in pharaonic creation myths the primordial hill rose from the primeval water⁹. Several gods are connected to water¹⁰. Nowadays, via the “resolution adopted by the General Assembly on 28 July 2010” by the United Nation Organisation (UN), water is declared a human right¹¹. In the so-called Agenda 2030, it is one of the Sustainable Development Goals, i.e. SDG6¹².

Rain was and still is relatively rare in Egypt, but when it did rain, it often fell in considerable quantities. Sometimes, torrential rains occur which, even if short-lived, have devastating consequences, because the soil cannot absorb the moisture¹³. Therefore, dewatering systems were necessary since the 3rd millennium BC¹⁴. Ancient Egypt offered ideal conditions for agriculture, as the soil was regularly fertilised by the nutrient-rich silt brought by the annual floods. Extensive import and export were made possible by the complex network of waterways in the form of the Nile¹⁵, canals, Red Sea and Mediterranean Sea. In addition, travelling by water enabled extensive cultural exchange not only with the closest neighbors, but also with distant countries. Fishing was carried out intensively with traps and nets, or the fish were speared from small boats. The latter is often combined with hunting birds, a combination that is referred to as the fishing and fowling scenes (fig. 1). Birds were also hunted from the water using throw sticks and nets. However, no water sports were practiced in pharaonic times, since the disease schistosomiasis already existed back then.

Settling a new area of land is not possible without a secure water supply. When travelling through the desert, it was essential to carry enough water and

to be informed about water sources. If they had dried up, this could have led to the traveller's death.

Apparently, the Egyptians were well aware of the importance of water to their livelihood, as it was often sacrificed to the gods in the form of libation. Water had a very high status in religion and cult practice. The text "The Hymn to the Nile", dedicated to the Nile flood, is attested in several versions¹⁶.

In ancient Egypt, water has always been of fundamental importance since the earliest times, an aspect which is reflected in representations from the very beginning. Thus, the oldest decorations on vessels from the period Naqada II from the 4th millennium BC show water and Nilotic scenes¹⁷, similar ornaments were found on Predynastic female figurines as well¹⁸. An early representation of water in connection with the king appears on the mace head of the ruler Scorpion II from Hierakonpolis dating to Dynasty 0 (ca. 3100 BC), which depicts the king with a hoe in his hand, while he stands by a watercourse¹⁹. However, it is unclear whether this is a natural or an artificial irrigation canal. Nevertheless, it was evidently important enough to show it in a prominent scene on such a significant royal object.

Water also plays an important role in ancient Egyptian literature, as for example, in the literary work "The Shipwrecked Sailor"²⁰. The protagonist's ship sinks in the storm and he is stranded on a supposedly deserted island. The power and violence of the sea represent the perils of travel as well as chaos and danger *per se*²¹. But the Nile also posed dangers. In the Old Kingdom, Kaemtenenet mentioned in his biography that he guided the king safely across the river in a storm and received a reward for it²².



Fig. 2
The goddess Nephthys, depicted with water lines on her hands, representing the so-called *njn* gesture. Scene in the tomb of Amunherkhepeshef (QV55) from Dynasty 20 in the Valley of the Queens at Thebes.

Moreover, ancient Egyptian texts show that passing travellers were offered water and sometimes even a bath as a gesture of hospitality²³. The so-called *njn* gesture²⁴ (fig. 2) is interpreted as a kind of welcome, which is depicted, for example, in the tomb of Amunherkhepeshef in Thebes.

From a technical point of view, water was used for water clocks²⁵ as well as for water organs²⁶. Aqueducts are not typical Egyptian facilities²⁷, qanats are known in the Western Desert in the oases of Bahariya, Farafra, and Kharga from the 5th century BC up to Roman times²⁸. Water features like those known from ancient Rome are





Fig. 3
*Modern canal near
Cairo.*

not documented in pharaonic Egypt, which might suggest that water was far too valuable to waste or play with.

Some of these aspects, demonstrating the significance of water in pharaonic Egypt, will be addressed in the following article, while several other items are discussed in detail in other chapters of this volume.

Agriculture

Water means life, not only for humans, but also for flora and fauna, especially in the Nile oasis, which is otherwise surrounded by desert on all sides. About 96,5 % of modern Egypt consists of desert, while the fertile land covers only 3,5 %²⁹. Without water, no agriculture or livestock farming is possible. The Nile and its canals can be

used as a constant source of water without the need for rain (fig. 3).

The annual Nile flood brought fertile mud that would not otherwise have reached the fields. The construction of irrigation systems made large-scale agriculture possible. This sophisticated system of canals and dikes ensured optimal water levels in the fields. Technical devices such as the shaduf in the New Kingdom and the sakiye in the Graeco-Roman Period enabled increased crop yields. The regular annual flooding made Egypt a well-supplied meat pot, so to speak (fig. 4a–b). There is also evidence of famines from pharaonic times, since too low water levels resulted in poor harvests; but if the water level was too high during the flood, it was fatal and life-threatening. The height of the Nile flood was measured at so-called nilometers³⁰ and recorded afterwards. The earliest data go back to ca. 3000 BC. Nevertheless, the fields were still supplied with water enriched with nutrient-rich mud every year³¹.

Wells

As already mentioned, Egyptian wells had different designs. Those in Amarna had staircases that lead to the water level (fig. 5a–c). There, the water could be poured directly into a container. Others had no steps, so that the water had to be lifted with technical devices in these cases.

The depth of wells in Egypt can vary as well. In Amarna, the depth ranges between 1.50–8.80 m³², the one in Qantir is over 6.20 m deep³³, the two in Zawiyet Umm el-Rakham at Marsa Matruh slightly more than 4 m³⁴, the one in Tanis 10.40 m³⁵, the one in Tundaba, located between



Thebes and the Kharga oasis, 9 m³⁶, the one in Deir el-Medineh 50 m³⁷ (fig. 6). An Egyptian text mentions a depth of 21 m³⁸. The oldest wells are archaeologically documented around 6000 BC in Nabta Playa and 1-3 m deep³⁹. The one in the White Monastery in Sohag has a depth of 14 m⁴⁰. Wells are not only found in settlements, but also in temples or their immediate surroundings.

Water and Hygiene

The practice of cleaning one's own body has been documented since the earliest times in Egypt on the basis of objects and architectural facilities. A basin and an ewer were used to wash hands, both could be made of clay or copper. They were excavated as objects in the tombs of the elite⁴¹ or of pharaohs, or depicted in tombs as in the one of Mereruka at Saqqara, dating to Dynasty 6 (fig. 7a-b).

Bathrooms are attested since Dynasty 2, when they appear in private tombs at Saqqara⁴². Several are attested in the houses of the elite and the palaces of the pharaohs as in Amarna and Medinet Habu (fig. 8).

They usually consisted of a rectangular monolith on which the bather stood and doused himself with bath water provided in jugs. There was no water supply or drainage system in the bathrooms. The used bath water flowed through a small drain into a basin, from where it had to be scooped off by hand.

Water Supply in the Desert

Within a settlement or town, water was obtained from the Nile, canals, or wells⁴³. There was no water supply to the individual houses via gutters or canals, so it had to be brought there in contain-

Fig. 4 a
A scene in the tomb of Amennakht (TT218) at Deir el-Medine depicts the netherworld with several waterways, plants in the lower register, the grave owner and his wife sowing and harvesting in the middle register, and the deceased in a boat in the upper register.

Fig. 4 b
Harvesting scene in the tomb of Ti at Saqqara.





Fig. 5 a–c
The well at Akhmim.

ners. Within a settlement, the inhabitants knew how to find water – but what was it like while travelling through the desert? Ancient Egyptian texts show that people were well informed about the locations of wells. Papyrus Anastasi I mentions the wells along the “Ways of Horus”⁴⁴. Beside the textual evidence, there are archaeological sources that demonstrate that even chains of artificial water depots existed along desert tracks, for instance on the Abu Ballas Trail, that had to be refilled regularly⁴⁵. However, these deposits, wells and cisterns had to be maintained; they did not remain in good condition on their own. Wells were at danger of drying up due to natural conditions. Moreover, the walls could collapse or the well could be blown over with sand. There is a depiction of a well on the Turin gold mine map. Here, the feature was surrounded by a wall, which was intended to protect it from sliding sand, but also acted as a protective wall against the floods of water that plunged down the wadi during flash floods⁴⁶.

As can also be seen from the Bible, it was common practice for an enemy to fill wells with earth. Another way to render them useless was to throw dead animals into them⁴⁷, or to isolate an enemy from the water supply⁴⁸. A text from Zawiyet Umm el-Rakham indicates that the Egyptians fortified wells to make it more difficult for passing Libyans to find drinking water⁴⁹. In general, there are different types of wells: they could be shallow and covered with a flat stone for protection, or the traveller had to dig several meters deep to find water. For example, the spring of Ain Amur between the Kharga and Dakhla Oases had muddy water and was only a hole in the ground between high grass⁵⁰. The explanations of the modern traveller Wilfried Thesiger are very informative in terms of the problems that can arise when trying to find

a well, or the usability of the water from it. Some wells could only be located because there were animal feces in the vicinity. When the water was extremely brackish, Thesiger was unable to drink it. The thirsty camels, on the other hand, drank it⁵¹. At another well, however, the animals could not be persuaded to drink it as it was very bitter. He tried to trick them by holding their nostrils shut, but this was also unsuccessful⁵². In other cases, the water was muddy, brackish, salty, contaminated with feces or dead animals⁵³. Milk could be poured in to mask the different taste, so that the water was still drinkable⁵⁴.

Pharaonic texts refer to individual wells from time to time, but also chains of them. One example is the Middle Kingdom expedition text from the reign of Mentuhotep IV, found at the Wadi Hammamat. It refers to the discovery of a well in the middle of the desert⁵⁵. Pharaoh Seti I ordered the construction of a well next to the Kanais temple, which was located in the Wadi Mija on the desert route from Edfu to the Baramiya mines⁵⁶. The text of the Ramesside Quban stela mentions a new installed well on the route to the Wadi Alaki gold mines⁵⁷.



Fig. 6
Well near Deir el-Medineh, the so-called *Grand Puits*, where about 5000 ostraca were found.

On longer routes, not only single wells were built, but chains of wells. This was to ensure that those travelling on this route were always provided with water. From an expedition text, we learn that the expedition leader Henu, who lived during the time of Mentuhotep III, built 14 wells in the Wadi Hammamat in the Eastern Desert⁵⁸. A relief in the temple of Karnak from the reign of Seti I shows the wells along the “Ways of Horus” between el-Kantareh and Rafa⁵⁹.



Fig. 7 a
In the tomb of Mereruka at Saqqara, dating to Dynasty 6, the tomb owner sits in front of an offering table on which bread is piled up. Below it, on the right-hand side, is a basin with an ewer, on the left-hand side are three so-called *hz* vases.

Fig. 7 b
Detail of the basin and ewer in the tomb of Mereruka at Saqqara from Dynasty 6.





Fig. 8 a–b
Bathroom of Pharaoh
Ramesses III in the
palace of Medinet
Habu. The bathing
water flows over a
small drain into a
basin, from where it
had to be scooped
out.



Trade, Traffic, and Transport on the Waterway

The river Nile (fig. 9a–b) connects the whole country, functioning as the main traffic route for about 1000 km from the Delta to Elephantine Island. This is why the Nile is called a “natural highway”⁶⁰. Not only the Nile, its natural tributaries and the artificial canals were used for travel and transport, but also the Mediterranean Sea and the Red Sea⁶¹.

Shipping led to intensive trade, passenger transport, local and long-distance travel and thus prosperity. Several studies focus on Egyptian ships and boats⁶². Vessels were used as early as 6000–5000 BC⁶³. They were an essential element of the Egyptian traffic system. A wide variety of ships and boats was used for transporting freight and passengers on inland waterways and at sea. So-called sickle-shaped boats with rudders and two cabins are attested in the Naqada II period (3500–3200 BC)⁶⁴. Next to the pyramid of Pharaoh Khufu, who reigned in Dynasty 4 (ca. 2600 BC), several boat pits were found. In two of them, the ships were still preserved. One of them is 44 m long, 5.60 m wide, with a flotation depth of 1.50 m. It was disassembled into its components, consisting of a total of 1224 pieces⁶⁵.

Besides the Egyptian ships and boats used to travel the river Nile and the canals (fig. 10a–c), seagoing ships are attested as well, travelling the Mediterranean Sea and the Red Sea⁶⁶.

Harbours and mooring places were essential for traffic and trade. Several temples were provided with access to water via a branch canal; the same applies to major state construction projects in order to transport the building equipment as close as possible to the site⁶⁷.



Fig. 9 a–b
The Nile at Luxor.

To travel the Red Sea, it was necessary to cross the Wadi Hammamat. Ships were dismantled and stored at harbours along the Red Seas, e.g., at Wadi el-Jarf, south of Ayn Sukhna, dating to Dynasty 4⁶⁸. In galleries used as storerooms, fragments of tall ships as well as rudders came to light⁶⁹. It is assumed that the harbour served as a starting point for travels to south Sinai and Punt⁷⁰.

Another important Middle Kingdom harbour is Wadi Gawasis, from where the journeys to Punt started⁷¹. The ships made of cedar wood were built in shipyards in the Nile valley. Afterwards, they were dismantled again and transported by donkeys overland from the Nile valley to Wadi Gasus, a distance of about 145 km. They were stored there until they were needed and then reassem-

bled⁷². Therefore, the ships were not transported in one piece, but in smaller units and by modes of land transport to their point of use, where they were rebuilt⁷³.

The same observations apply to the Ayn Sukhna harbour on the Red Sea, 120 km away from Cairo. The length of the seagoing ships could be reconstructed to 14–15 m⁷⁴. Ayn Sukhna was used already in the Old Kingdom⁷⁵. Another Red Sea harbour was found at Mersa in the Wadi Gawasis⁷⁶. In the galleries, not only parts of seagoing ships and rudders were found, but also anchors and 43 cargo boxes dating to the Middle Kingdom. The excavated ships had a length of 20–30 m. Mersa probably functioned as a harbour since the 3rd millennium BC⁷⁷.

