From: Calliope, 1997-09
Issue Theme: Science and Medicine in Ancient Egypt
Subject: Water/Oceans, Ancient Civilizations, Egypt
Time Period: 4000-1000BC: Early Civilizations

Back to Normal View

Coping with Water

Many have said that the Nile River made Egyptian civilization possible. Yet, if the Nile gave Egypt life-giving water and rich, black soil, it also brought floods. The Greek historian Herodotus, who traveled in Egypt during the 400s B.C., described the annual late summer/early fall event thus: Egypt is "a sheet of water except for the towns, which look like islands in the Aegean Sea."

Flooding was so predictable that the Egyptians named the July-to-October season *Akhet*, or "inundation." The amount of floodwater, however, varied from year to year. Too little meant people would go hungry. Too much brought terrible destruction. In learning to deal with this mixed blessing, the ancient Egyptians developed many engineering techniques that took advantage of the floodwaters.

Some Egyptologists think that, as early as 4000 B.C., communities living along the Nile Valley may have organized political groups to cope with harnessing the flood. A drawing of irrigation digging shows canals being created about 3200 B.C. Still, dating the start of artificial irrigation is difficult because it differed little from natural irrigation. Natural irrigation occurred when the Nile overflowed its banks and water coursed across the fields.

As the decades passed, farmers improved the channels along which the flood waters ran. Then, they began digging canals with dams that could control the flow of water and take it to areas the flood waters usually did not reach.

By the Middle Kingdom (about 2040–1715 B.C.), the practice of having canals bring water to large shallow basins enclosed by dikes was widespread. Under this system, known as basin irrigation, one canal would feed several basins lined up parallel to the river. The dikes had masonry or wooden gates that workers opened and closed to regulate the flow of water between the basins.

When the river was at its high point, the canals would be opened and the basins flooded. This flood water was then allowed to stand and soak into the parched ground for several weeks. A drainage canal would carry surplus water back into the river.

"Nilometers," placed at intervals along the river, measured the height of the flood and provided valuable information. The Egyptians could now tell the rate at which the water was rising upstream and give communities downstream notice of what to expect and prepare for—how high to build their levees and how deep to dig their canals.

During *Peret*, or "growing," the season from November to February, farmers planted the basins with barley, wheat, various beans and lentils for food, and flax for cloth. Because these crops matured in the cooler winter months, they did not need further watering. During *Shenu*, or "drought," the season from March to June, nothing was planted in the basins.

Fruits and vegetables, both of which required more water, were grown in smaller rectangular plots near irrigation trenches or wells, and watered by hand. These gardens yielded two or even three annual harvests. At first, workers carried water in large clay pots suspended from a yoke. Then, during the 1500s B.C., the Egyptians began using the *shaduf*.

A shaduf works like a seesaw. It consists of a long pole with a bucket suspended from one end and a stone or clay counterweight on the other. The pole rests on a high horizontal bar alongside the source of water. The worker dips the leather, wood, or clay bucket into the water and raises it easily with the help of the counterweight. The worker then tips the water out into a trough leading to the plants.

The most spectacular Egyptian irrigation project was the conversion of the Faiyum, a low-lying area west of the Nile Valley and linked to the valley by a branch of the river. With a system of dams and a network of canals, the vast swamp became productive cropland that came to be known as the "Garden of the Pharaohs."

See also:
Articles from the same subject.
Articles from the same time period.