

A T E R

W A T E R

The ancient irrigation systems in the Negev attest to the many attempts to cultivate the desert throughout history. Two problems confront the desert farmer: finding water and creating arable land. The Negev is not a rainless desert - the higher parts receive about 300 millimeters of rainfall per year. But averages are misleading: the entire amount can fall in one cloudburst every three years. The massive amounts of water that accumulate in the Negev when it rains roar down the wadis in flash floods, eroding the soil that has formed in the valleys and making farming impossible.

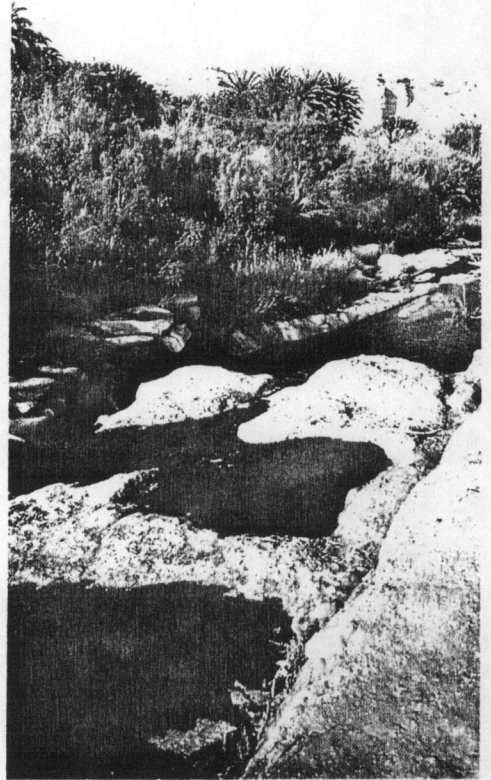
The first serious farmers in the Negev were the Israelites. In the eighth to tenth centuries BCE, huge cisterns were dug in the Negev highlands. Canals were carved out of the mountain slopes above them to channel the floods to the cisterns. Hundreds of these cisterns dot the Negev.

This system was the basis for hundreds of Israelite settlements in the Negev and was used for the next two millennia by the Nabateans in their cities, Herod in his great fortresses, the Christian towns and churches, and even today by the Beduin who still roam the desert.

The Israelites were probably the first to use the runoff water for farming. They discovered that they could do so if sufficiently deep soil accumulated in

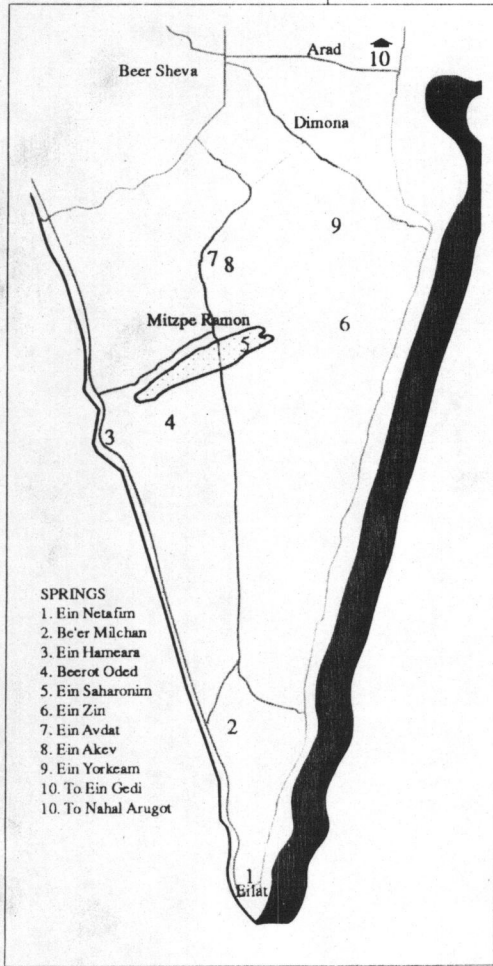
the fields, and if the flash floods could be prevented from sweeping it away. They created channels and dams on the mountains to divert the water to different parts of the wadi and stop the floods. By terracing the river beds, they enabled deep deposits of soil to accumulate and to retain water for many years.

It was the Nabateans



Shai Gincit / N.R.A.I.

who first made large-scale use of this technique. From the first century BCE onward, they transformed vast tracts of land into agricultural fields. These systems were later expanded by the Byzantine population, and made the Negev one of the most fertile areas in the region. Apart from the regular produce of grapes, wine, and olive oil, the people of the Negev also raised thoroughbred horses for the



Above: Winter rains revive the spring of Ein Akrabim in Nahal Zin. Lush foliage grows around the spring, which is a popular destination for hikers.

Below: Agriculture in the desert: gladiolas ready for export to Europe.

Opposite page: A flash flood in Nahal Zin.





Courtesy of Moryia Hotel-Dead Sea

Taking the Cure at the Dead Sea

In ancient times, historians had some rather unpleasant things to say about the Dead Sea. "Its water has a nauseous taste, and its offensive odor is injurious," reported the Roman historian Tacitus. And yet much praise could be heard for its healing properties. Roman pharmacologists recommended Dead Sea bitumen for healing wounded gladiators.

Today we have learned how to make the

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The Dead Sea sun, which shines at least 320 days a year, attracts psoriasis sufferers from all over the world. Sunlight is one of the main ingredients in the treatment; in the Dead Sea area, most of the harmful rays are filtered out when they pass through the mineral haze over the lake or lose their intensity on the long trip to the lowest spot on earth.

The Dead Sea has also been found to be very beneficial in the treatment of rheumatoid arthritis. The rich black Dead Sea mud seems useful as a pain reliever. Dead Sea mud, salt, minerals from underwater

springs, and extracts of local plants are particularly helpful for cleansing and revitalizing the skin. The clean desert air, together with the added oxygen of the lowest point on earth and the vapors from the Dead Sea minerals, also do their part to make the region a very popular health spa.

racetracks of the Roman world.

For 1,000 years, after the destruction of the Byzantine Empire, the Negev lay neglected. It was only with the creation of the State of Israel that scientists began to look at the remains of the hundreds of cisterns and dams across the wadis and try to learn their purpose. In the 1950s and '60s, Nabatean farms were reconstructed in the Negev to prove that these farming techniques were viable.

The Jewish settlers utilized the ancient water systems. But modern agriculture requires a constant source of water. In 1946, the first water pipeline was laid. It extended from the center of the country to the Negev. It was later enlarged, another one was installed, and the

system was integrated with the national water carrier that brings water from the Sea of Galilee. Scores of agricultural settlements could then be established. The settlements take advantage of the warm Negev weather to grow out-of-season crops.

Modern hydrological techniques allow them to drill deep into the earth and find water sources that were unknown to the ancient farmers. A rich underground aquifer discovered in the Negev supplements the water supply pumped in from the north.

TOURING TIPS

No visit to the Negev would be complete without a look at man's attempts to farm the desert.

The six Nabatean towns of the Negev are surrounded by a concentration of Nabatean and Byzantine farms. Near Avdat, an experimental Nabatean farm was reconstructed by Professor Michael Evenari to study ancient farming methods. Evenari and his team also reconstructed a number of ancient farms around Shivta. The flourishing trees and plants are living testimony of the success of the Nabatean farming techniques.

Along the road leading from Mitzpe Ramon to Borot Lotz, the Israelites dug dozens of cisterns. Most of them still fill up with water every winter. The most impressive cistern, Bor Hammat, is just off the main road. Seventeen ancient cisterns can be found around Borot Lotz. Near the cisterns grow the great Atlantic pistachios, remnants of the Ice Age.

Another ingenious water system is found in the Arava, north of Eilat. Built 1,200 years ago, it is comprised of tunnels that collect water along the underground aquifer.

A visit to one of the modern agricultural settlements in the Negev is also recommended. Many of the kibbutzim offer tours of their farms. At the desert agricultural research station near Revivim, heat- and salt-resistant crops are being developed.

North of Beersheba, the largest forest in Israel, the Yatir Forest, has been planted. A lookout point in the center of the forest affords a view of the northern Negev.

Finally, three museums are a must: the Joe Allon Beduin Museum in Lahav, the Arad Visitors' Center, and the Negev Museum in Beersheba show man's attempts to live in the desert.