

FAITH
AND
THOUGHT

1982
Vol. 109
No. 3

A Journal devoted to the study of the inter-relation of the
Christian Revelation and modern research

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THE NEGEV: ISRAEL'S UNDERESTIMATED HALF?

Dr Brodeur continues his studies of the State of Israel with this paper — of considerable biblical interest — on the Negev.

And the Desert Shall Blossom

Two years after President Anwar el-Sadat's historic journey to Jerusalem, U.S. Secretary of Agriculture Robert Berglund announced that Egypt, Israel and the United States had placed under consideration formation of a multi-billion dollar consortium to undertake a large-scale irrigation of the Sinai and Negev using Nile River water.¹ Berglund explained that the U.S. and Israel would provide much of the technical know-how, but that the financing would be shared by the three members with possible additional input by private industry and the World Bank. Carried away by enthusiasm, the secretary offered that "The region could be made to look like the San Joaquin Valley in California."

The immediate beneficiary of the bold scheme would be food-deficient Egypt. Berglund went on to quote Isaiah: "The wilderness and the solitary place shall be glad for them; and the desert shall rejoice, and blossom as the rose." (Isa. 35:1, AV). There is another passage in Isaiah that comes to mind with the Berglund scheme:

I will make the wilderness a pool
of water, and the dry land springs
of water. I will put in the wilder-
ness the cedar, the acacia, the myr-
tle, and the olive; I will set in
the desert the cypress, the plane
and the pine together.

(Isa. 41; 18-19)

The first time that Nile waters flowed through the Sinai was in 1917, via a modest, 2-inch waterpipe constructed by the British to support their war against the Ottoman Turks. The Negev portion of the Berglund scheme will probably have to wait until the completion of the relocation of the Sinai airforce bases into the

Negev. The resulting programme involved the dismantling of 103 army camps and installations, and building 37 substitute camps in Israel proper. And then there is the highly charged and controversial issue of conservation. Originally, the Israeli Society for Preservation of Nature called for setting aside 1.2 million acres, more than a third of the whole Negev, which includes part of the Judean Desert.² The Society's ambitious scheme was even endorsed by the government Antiquities Department, while the military stood impatiently by, anxious to grant contracts for hundreds of miles of road, runway and pipeline.

It is estimated that 1,200 varieties of plants grow in the Negev, 76 of which are unique to the region. By another calculation, about 10% of the plant types found in the whole Saharo-Arabian desert belt, stretching from Morocco to western India, are believed to be represented exclusively by the Negev.³ Added to that are over a 100 species of animals and birds.

In anticipation of the military's inroads upon the heritage of the Negev, the Antiquities Department sponsored 160 rescue digs aimed at salvaging some of the significant sites. The survey at Ramat Matreid, site of one of the three relocated military airfields, revealed a large concentration of archaeological sites dating from the early Canaanite period. In early 1981, the government's Nature Reserve Authority, the other environmental entity involved in the negotiations, reported that three large reserves comprising over one million acres, 35% of the Negev, had been set aside. In addition, it was offered that extensive army firing ranges, normally closed to the public, would also serve, on balance, for the enhancement of wildlife and its propagation.³

Our Landscape is not sufficiently cherished, our environmental instincts are undeveloped---the sober statement appearing at the very end of Abba Eban's long *Autobiography*^{4a} appeared to be on the verge of vindication. In the context of history and geopolitics it should not, however, be forgotten that the chief *raison d'être* for the Negev, and the considerable sacrifice of human and material resources that Israel made in 1948-1949 to secure it, was not for the purpose of collecting a second maritime outlet, but to keep apart two hostile neighbours: Egypt and Jordan.

Re-Creation in the Desert

The high importance Israel attaches to the sword-like sliver of the Negev has already been justified in the fields of mining and agriculture. The significance of its archaeological investigations will be touched upon presently. Of course, there is also pessimism in some quarters over the purely demographic potential of the

Negev which Ben Gurion chortled so optimistically about. Similar doubts were advanced throughout the 19th Century concerning the prospects of any meaningful Jewish settlement or enterprise in Palestine. Israel cannot afford to neglect the Negev, if for no other reason than that it comprises about one half the total area of the 1949 truce lines.

In the fall of 1968, I visited the Negev for the first time. Seeing Israel had been an afterthought of an Italian vacation, and I had little time to spare in the Holy Land. Yet, there was no question in my geographer's mind about what I should attempt to see first: the Negev. I had some noble company. During his momentous lifetime, Moses had twice spent long periods in isolation and austerity in the contemplative quiet that the greater Sinai offers. In 1980, the late, great peacemaker with Israel, Anwar Sadat, rediscovered and articulated the joint spiritual heritage of the Semitic peoples at the base of Mount Sinai.

I was not yet installed in my room in a third-class hotel behind the Tel Aviv waterfront when the ebullient manager, obviously reading my mind, began to talk of the Negev.

The next morning, at six a.m., I boarded a sleek, airconditioned tour bus. The motley bunch of us headed south-east, first through the highrise suburbs of Tel Aviv, where clusters of houses look as homely as any in the world, though they are devoid of any landscaping, the soil about them drifting into the streets. Then, the drab hallmarks of civilization gave away to the pleasant orange and green of the famous Jaffa groves. Beyond the groves, we encountered some high dunes. With ear-splitting shriek, a brace of Israeli Phantom jets swooped down upon the dunes, probably in a mock bombing run. Then, blessed with a silence overridden only by the drone of the diesel motor, we moved into a gravelly landscape with sparse vegetation. This, not the sand dunes, is the character of most of the deserts of the world. We were steadily encroaching upon the Negev, which in Hebrew simply means *the south*. Here and there, irrigated farms popped up like squares on a checkerboard, an encouraging contrast to the creeping desertification that much of the globe is now experiencing from central Australia to East and Central Africa.

By mid-morning, the big bus was snaking its way through the dusty streets of Bedouin Beersheva. The desert centre's adobe appearance belies the fact that around it are situated research laboratories, factories, even a university. However, the Bedouins took an instant dislike to the Art Deco bazaar that the Israelis had constructed, without their consultation, for the rationalisation of their activities.

Beersheva has had a romantic history. Hagar, Abraham's cast-off Egyptian wife, took her son Ishmael into the wilderness around Beersheva. God promised to make Ishmael's offspring (by tradition, the Bedouins and Arabs) into a great nation just like the Jews. Meanwhile, Abraham dug a well for his flocks at Beersheva, where he was often preoccupied with squabbles with Abimelech, a local chieftain rival, with whom he ultimately made peace. As a result, the place became known as *The Well of the Oath* (Gen. 21:31-32) which is the etymology of the present day name. And, ironically, the systematic removal of the nomadic Bedouins from the northern Negev, in progress since the 1970's by Israel, is calling into question Israel's independence pledge that the desert people had a venerable claim to the region.

In a memoir, David Ben Gurion relates that before the fighting of 1948 was over he met with officials of his government to discuss settlement of the first 300 Jews at Beersheva, there being not a single Jew resident there at that time.⁵ A century ago, it was only a Bedouin encampment, a cluster of eight wells, most of them filled with rubble.

The Negev is critical to the existence of Israel, it comprises not less than five-eighths of the status quo land of 1949. At that time, the soon-to-be martyred UN mediator, Count Folke Bernadotte, advanced a plan that included Israel exchanging with the Arabs the Negev for the better-watered Galilee, much of which Israel had won by war gains. By contrast, the UN Partition Plan had awarded all of the Negev to a Jewish state, except for a finger part way along the 1906 boundary with Sinai. While the UN designated that the finger should go to Egypt, Israel's independence forces had other ideas. Taking advantage of a newly discovered fragment of an old Roman road, they pushed their frail, scant armour in behind an Egyptian army and secured the remainder of the old, straight, 1906 survey line boundary before the last cease-fire took effect.

After the War of Independence, Zionist settlement plans for the Negev were under constant review. It was hoped that the rugged wastelands that attracted first Ben Gurion (now Ariel Sharon), would lure up to 100,000 Jewish settlers. Even Chaim Weizmann was enamoured of the region, proclaiming "magnificent redemption in the southland".⁶ Ambassador James G. McDonald notified President Truman that the Zionists would never give up the Negev until "the last Jew had died in its defense."^{4b}

When Abba Eban, a Jewish Agency observer to the United Nations Higher Committee on Palestine deliberations in Geneva, reported UNHCOF's vote for partition to Ben Gurion, the incredulous Prime Minister replied "What was that you said? A Jewish state including the Negev?"^{4b}

There were probably few people more articulate about the hidden treasures of the Negev than our portly tour bus guide who claimed to speak seven languages: "About average for an Israeli", he modestly admitted.

A few miles south of Beersheva, we came upon a tiny, cross-roads settlement. Only two houses were visible, each dwarfed by its steel mesh radio mast. The guide automatically rose from his jump seat beside the driver, grabbed the mike and intoned, "In that green house over there sits our Churchill writing his memoirs."

"And who might that be?" asked an elderly little English lady in her high pitched voice. "Ben Gurion", was the two syllable reply.

Born David Grun, in Poland, as a young man Israel's first prime minister adopted the name of a leader of the tragic uprising of 66 A.D. The name means 'son of a lion cub'. Hoping to get a glimpse of the familiar old white mane, many passengers craned their necks toward the glass. Nothing! The lion was quiet that day.

For the next several dozen miles, as we entered upon the true Negev, not a single soul or vehicle came into view. This was the ancient Wilderness of Zin, aptly described in the fifth Book of Moses as the place "...whose stones are iron and out of whose hills you can dig copper" (Deut. 8:9), a grim wasteland whose northeastern reaches, around the southwestern extremities of the Dead Sea, merge into the biblical 'Wilderness of Zin'.

Geologically and topographically, the Negev is a highly dissected plateau that tips up somewhat toward the southeast, due to later uplift. While the plateau of the Negev terminates abruptly on its Jordanian side, in the Great Rift Valley that runs from central Lebanon to central Africa, on the west it merges quite imperceptibly into the Sinai.

The Sinai boundary, in fact, has a piquant history. Consisting of a straight survey line, with three little jogs, the southernmost of which reflects an attempt to correct erratic surveying, it was accepted in 1906 by the Turkish masters of Syria-Palestine and the Sinai only after the English took up positions in the desert. The old boundary allowed the Turks to control about four-fifths of the Sinai, giving the Ottomans access to the east bank of the Suez Canal lifeline to India. Upon their occupation of Egypt in 1882, the English began to scheme on ways and means of securing *both* flanks of the Suez. The ill-fated Zionist settlement scheme at Gaza, considered by Herzl, was one issuance of the overworked British strategy.

The present boundary, recognized by Egypt, runs, as it has since 1906, from a point just west of Rafah in Mediterranean Israel to the Gulf of Akaba. It was based mostly on drainage divides determining which streams or wadis flow into the Sinai and the Aravah, or lower Jordan Valley, the above-cited Rift. Through an accumulation of survey errors in 1906, more land at the head of the Gulf of Akaba remained under Turkish control than had actually been agreed by the two powers.

By and large, the Sinai boundary had withstood remarkably well a whole succession of sovereignties over Palestine. First, it was adopted by the League of Nations to set out the western limits of the Palestinian mandate (1922) recommended by the Treaty of San Remo (1920). Next, the recommendations of the United Nations Special Commission on Palestine (UNSCOP) endorsed the 1906 line, recommendations that led to the historic UN Resolution of November 29, 1947. A deviation from those proposals resulted in 1949 when the negotiations of the Israeli-Egyptian armistice awarded a narrow coastal strip situated between Rafah and Gaza to Egypt. This gave birth to the notorious and controversial Gaza Strip, the spear-like enclave of Palestinian refugees which militant Israelis liken to a dagger thrust into the side of the Zionist state.

Hopefully, the boundary will stand the test of time now that Israel has completed (April 15, 1982) the final phase of its multi-stage withdrawal from the Sinai in accord with the provisions of the peace treaty of March, 1979.⁷

As one who has been studying and writing about the Arab/Israeli conflict for fifteen years, I am convinced that Israel has no intention of allowing a Palestinian state, or fragment thereof, form on the Gaza Strip. The prospects of the coastal enclave being voluntarily returned to Egyptian trustee-ship remain dim. And what about its status in ancient times? While there is little doubt that David and Solomon included the Gaza Strip in their conquests, recent archaeological discoveries apparently point to a more ancient Egyptian hegemony. Between 1972 and 1980, Israeli excavations at Delt el Batah, an Arab village in the Strip, has revealed the presence of tombs attributed as the final resting places of high pharaonic officials, and also an Egyptian residence dating from the time of Rameses II, the traditional pharaoh of the Exodus.⁸ The discoveries have given rise to speculation not only that the area was then controlled by Egypt, but that the garrison's presence astride the favoured coastal caravan route to Canaan probably influenced Moses to opt for a return via the southern Sinai.

A Lunar Landscape

Such facts were unknown, of course, when I was lurching around the bends and dips of the Negev in that big Egged bus a dozen or so years before. The moonscape repetition of wadis and rises was sufficient to make me long for a good stretch of Roman desert highway, or modern bitumen. Now, with the Negev being rapidly transformed into a network of military bases, airfields and depots, the gravel highway will become a thing of the past. The improved roads will no doubt link up also the most impressive of the Nabataean-Byzantine ruins of the Negev: Isbeita, a complex situated about thirty miles from Sede Boker.⁹ However, the site was not attainable during the gravel road days of Israel's first quarter century in the new Negev. Instead, the Tel Aviv-Eilat one-day excursions programmed their luncheon stop at the sister site of Avedat, ancient *Eboda*, a Grecian-like oracular little plateau on which stands, all crowded together, the ruins of a 5th century Byzantine church and monastery, the only remains of the city of Eboda. The church was constructed with stones mined from an abandoned fortress of the Tenth Legion, the Roman force that helped to subdue Jerusalem and Masada during the great uprising of 66-73 A.D.

A century or so after its construction, a severe earthquake destroyed many of the Nabataean-Byzantine centres, and their irrigation works. Eboda perished. And it may have also been the death knell of the flourishing desert culture.

I wandered back and forth among the stones in that chilly September air, wondering if the same earthquake — or perhaps a later one — had also altered the flow of the groundwater so that springs referred to in the ancient Book of Judges of the Old Testament ceased to flow forever (Judg. 1:15). The mysterious Nabataeans built up quite a civilization during the centuries just before and after Christ. How they managed to survive, much less prosper, on from one or two inches of rainfall each year was brilliantly reconstructed by American archaeologist Nelson Glueck, and described in his book *Rivers in the Desert*.¹⁰ Nabatean engineers created a latticework of ditches and cisterns which trapped almost every drop of usable moisture. Even the dew was captured. These desert traders also trapped the rain that fell upon the roof tops and funnelled it into household cisterns; the surplus then was channelled into the communal water supply.

Israeli technicians have reconstructed some of the old Nabataean networks with a new twist: concrete liners to reduce seepage. Quality almonds, apricots and other nuts and fruits are being grown on nothing more than the desert runoff, precisely metered amounts of it seeping from perforated plastic pipe tapping a V-shaped catchment

area that is adequate for just a single tree. The drip irrigation method also has the advantage of leaching harmful salts out of the root systems.

While the northern Negev and its urban triangle, Beersheva, Arad and Dimona, currently depend upon the National Water Carrier, which taps sources of the Jordan, realization of any large-scale settlement programme further south ultimately depends upon discovery of a more economical way to desalinize seawater than the method currently being employed to sustain Eilat. A second generation plant is in the offing for Ashdod, the new city due west of Jerusalem, near the coast, built in the 1960's. It is expected to desalinize 10 million gallons of seawater per day.¹¹

Minerals in the Desert

The Negev's great inland lake is the Dead Sea whose northern reaches extend, of course, well beyond the true Negev. Since 1934, or earlier, Jewish enterprise has managed the huge potash industry near Sodom, where the sun's heat is used to evaporate Dead Sea water, potassium carbonate, potassium chloride, magnesium bromide and chloride, and common table salt¹² being the products. During the second world war, potash plants operating at both ends of the Dead Sea supplied much of the United Kingdom's potash requirements.¹³

More recently, Israeli scientists have discovered a method for extracting more of the potash content from brine, an advance that has significance for the fertilizer-barren Third World. The Dead Sea now supplies Israel's magnesium requirements. In addition to this vital material, lithium salts are obtained.

Another development is the discovery of the sea alga *Dunaliella bardawil* which grows rapidly on shallow ponds of very salt water. Up to 40% of its dry weight is glycerol, which is now exported: the residue provides a rich protein suitable for animal feed and beta-carotene used in the food industry.¹⁴ From the ground, the Negev yields superphosphate material essential to the production of the three most commonly used fertilizers.^{15a} Major methane gas deposits were discovered near Sodom, site of the Dead Sea Works, in the 1960's. And to the west, in the hills around Arad, there is ball clay, for brick making, and plaster of Paris. Small deposits of manganese and molybdenum, essential steel hardeners for industrial nations, and also iridium, cobalt, and caesium have been found in the Negev.

With such mineral abundance, Ben Gurion envisaged the Negev becoming a major industrial centre. Instead, it is becoming a major military centre with the inevitable related industries. Another of Ben Gurion's wishful projections was for a maritime canal that would link the Mediterranean and the Gulf of Aqaba, via the flat rift valley of the Arabah, the continuation of the Dead Sea trench that is also filled by the Gulf. He probably did not originate this scheme, but it has now been superseded, in any event, by the shorter Mediterranean-Dead Sea Canal Scheme.

In an interview granted during his 80th year, Ben Gurion demonstrated his long view of history. He cited, as Israel's most important priority for peace, the settlement of the Negev. His reasons were several. First, it constitutes about half of Israel's Independence land. Second, it separates Egypt (Sinai) from Jordan and Arabia. A concentration of Jewish population in this wilderness wedge would make any linkup of forces by these Arab countries more difficult. The third reason is partly historical. Ben Gurion cited the fate of ancient, coastal Carthage which fell to a broader based and better organized Rome. With reference to the dangerous over-concentration of Israel's urban population in the coastal Tel Aviv area, he observed: "If the state does not put an end to the desert, the desert is likely to put an end to the state."^{15b} As examples, Ben Gurion could have cited *Leptis Magnis* in North Africa, and *Geraba* in Jordan — both great, ancient urban centres swallowed up by the phenomenon of desertification that is once again ravaging the world.

For Ben Gurion, the Dead Sea was not an anachronism, but a wonderful inland sea; what the Great Lakes are to the United States. No wonder! That slimy water body boasts an estimated 42 billion tons of chemicals.^{15c} One of the more quaint speculations about the Salton Sea, with more than faint overtones of biblical prophecy, is that one day Israel will solve all its economic and financial problems, and become fabulously wealthy in the process, by filtering the gold reputed to be in suspension in even larger quantities than the densest known 'pockets' or 'lenses' of gold that German electrochemist Fritz Haber proved were in the seven seas, when he roamed them in the 1920's, anxious to find a way to pay off Germany's staggering reparations debt by a single, staggering coup! To date, chemical analyses of Dead Sea Water, at least the ones the Israelis are willing to talk about, do not reward speculations about a liquid el Dorado. According to one analysis, neither gold nor platinum could be found in detectable quantities.¹⁶

A Sea to Sea Waterway

In March, 1981 the Begin government approved a scheme to construct a 50 mile long channel for the transport of Mediterranean waters to the Dead Sea, a natural fall gradient of about 1,300 feet.¹⁷ The project could realize between 100 and 150 megawatts of electricity for the national grid. The canal could also interlock with a successful pilot scheme on the Dead Sea---production of electricity from the harnessing of the natural heat stratification of Dead Sea brine.¹⁸ The goal, of course, is to free Israel from the curse of imported oil. However, solution of a serious economic problem may raise the spectre of an equally serious international legal problem. The question posed is the legitimacy of Israel's plan to tunnel under the four-mile wide Gaza Strip, which is Egyptian territory. Israel unsuccessfully tried to conquer the strip during the War of Independence, but has kept it under constant occupation since winning it as the spoils of war in 1967.

Because of its nearness to the Tel Aviv mini-conurbation, Israel is very reluctant to return the Gaza Strip to Egypt. Moreover, Israel claims that the Gaza Strip-Judean Hills route is the most economical of all routes for the Dead Sea Canal. In any event, conveying the Mediterranean under the strip would undoubtedly provide Israel with another argument for not restoring the Gaza to Egyptian sovereignty.

Live Wire from the Dead Sea

For nearly a half century direct sunlight has been employed to evaporate Dead Sea brine for the chemicals used in artificial fertilizers. A few years ago, Israel undertook an important new step in the exploitation of this benign-looking natural resource. On the northern shore of the sea they constructed a resort hotel that is both heated and cooled by mechanisms that take advantage of the varying ambient temperature of the natural stratification of the brine. The sea is first diverted to shallow, constructed pans whose blackened bottoms produce temperatures of 91-93°C. Then, the sun-heated brine is diverted to heat a low boiling working fluid. The vapour resulting drives a turbine which, in turn, generates electricity. In 1981, the 150 kW experimental generator was expanded into a 5,000 kW power station, the first in a projected string of power modules that could yield 2,000 megawatts. By the 1990's Dead Sea solar ponds, created by pinching of the Halashon Narrows, might supply a substantial part of Israel's electrical power requirements, freeing the country from its dependence upon foreign oil. And the feat could probably be accomplished a lot

cheaper than by the ambitious Mediterranean-Dead Sea Canal Scheme, whose natural fall could be tapped for hydro-electric power.¹⁹

About 98% of Israel's energy in the 1970's came from petroleum. More than a third of the oil, most of it imported, was burnt to produce electricity — one of the least economic uses for oil. As in the United States, frantic efforts have been under way in Israel to convert oil-fired power plants to coal. The first such unit, at Hadera, came on stream at the end of last year. While there is believed to be very little crude oil underlying Israel (the Sinai fields have already been returned to Egypt), there are large shale oil deposits in several places, including Dimona in the Negev and in the Hartuv Hills near Jerusalem. Just as the Burning Bush spoke to Moses, the burning rocks are sending a signal to latter day Israel. Two years ago, Israel signed an agreement with West Germany for an initial feasibility study for the exploitation of shale oil.²⁰ When all the dust settles on the relocated Sinai airbases, priority may be given to the undisturbed black dust which locks up millions of barrels of liquid fuel.

A nation in which servicing the interest in the foreign debt exceeds \$2 billion is praying, as prayed the Psalmist of old: "Restore our fortunes, O Lord, like the watercourses in the Negeb" (RSV, 126:4).

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